



**Pocono Environmental
Education Center**



Autumnal Equinox 2010

PEEC Seasons

A Quarterly Publication to Advance Environmental Literacy

INSIDE THIS ISSUE

A Fundraiser for Bats	1
CEO Message	2
Growing Green & The Solution	3
Recycled Donations	4
EcoZone: Bear Update	5
Oh Henry! & Thank You RMH!	6
Great Day at Great Bear	7
Women Living Fully	8
Girls in Gowns, Gents in Jeans	9
Hydraulic Fracturing	10
Energy Efficiency Corner	11
The Perfect PEEC Present	12
Wishful Thinking	13

**Pocono Environmental
Education Center**

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A Fundraiser for . . . Bats?

By Allison Owczarczak



Some people love bats, others loath them. But like them or not, our North American cave and mine dwelling bats are in trouble. Since White-Nose Syndrome (WNS) was first observed in four Albany area caves in New York State in the winter of 2006/2007, the fungus has spread to 17 States and two Canadian Provinces. Over one million bats have perished.

Congress appropriated \$1.9 million in late 2009 toward research to combat the continual spread of WNS, as well as to find a cure for this mysterious fungus about which scientists still have many unanswered questions. This much needed money came after the June 4, 2009 testimonies of some of the top scientists before the

House Subcommittee on National Parks, Forests and Public Lands and the Subcommittee on Insular Affairs, Oceans and Wildlife (of the Committee on Natural Resources) at a joint oversight hearing: "White-Nose Syndrome: What's Killing Bats in the Northeast?"

It is estimated that \$45 million will be needed in the next 5 years to adequately respond to the crisis. This year, 60 groups and more than a dozen scientists from across the country are requesting \$5 million from Congress for white-nose syndrome response in 2011.

There are two not-for-profit sector resources that have also been providing rapid funds for responding to the crisis. Both Bat Conservation International and the National Speleological Society have set up donation portholes on their websites and have funneled their own organizational grants to scientists to study and understand a malady that threatens the extinction of bat species which appeared to be healthy and gaining in numbers before 2006.

Biologists speak of our time as the Sixth Great Extinction in Earth's long history. Some predict that half of all species will disappear by century's end. More than a third of the world's amphibians are facing extinction, with numerous possible culprits including climate change, pesticides, and an invading chytrid fungus. Bees have also mysteriously expired at phenomenal rates. There are 45 species of bats in North America and 7 are now afflicted with WNS with mortality rates around 90-95%.

Join us here at PEEC on October 30th at 8:00pm for a 'BATS IN THE BELFRY' fundraiser to benefit the National Speleological Society Rapid Response Fund. The National Speleological Society (NSS) is a non-profit membership organization dedicated to the scientific study of caves and karst; protecting caves and their natural contents through conservation, ownership, stewardship, and public education; and promoting responsible cave exploration and fellowship among those interested in caves. This is a party for adults, so come to PEEC, dress up, and learn about our batty friends. There will be food, music, and more. Prices will be \$25 per person (party only) or \$99 for 2 people (includes 2 fundraiser tickets, an overnight stay in a PEEC cabin, and continental breakfast). Our family-friendly PEEC-A-BOO event will also be held October 30th from 4:00-7:00pm.

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CEO Message


Jeff Rosalsky




As I write this, the summer is coming to a close and we are finally getting our much needed rain. The First Bloom canoe garden has been a huge success, with our Growing Green special needs campers maintaining it during the summer. The organic produce has been delicious and we have been able to use it with smaller groups in the dining hall. The goal for next year is to increase our herb production to supply large quantities to the kitchen.

Occasionally, although not often enough, I get to leave my office and teach. One of the highlights this summer was spending the day in my kayak with the Women on the Water group from WINS (Women in Natural Sciences) out of Philadelphia. Courtesy of the National Park Foundation, these high school-aged women from Philadelphia had an unforgettable experience on the Delaware River and at PEEC. Even more amazing was that several of them spent a month at PEEC as paid summer interns teaching environmental education groups.

One of PEEC's greatest assets is that we have the flexibility to be an incubator for new environmental education projects and teaching methods. We teach, we learn, we evolve, and, hopefully, we improve.



BATS IN THE BELFRY!



PARTY FOR ADULTS

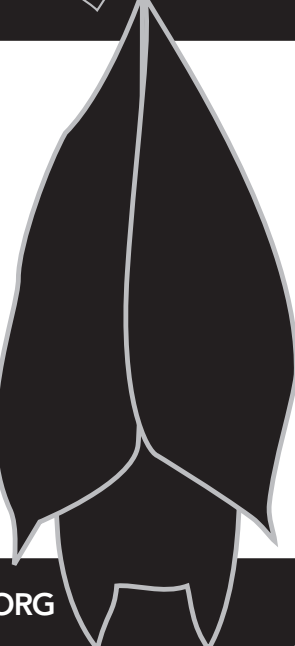
OCTOBER 30, 2010, 8PM

Food, music and more. Dress up and learn about our batty friends.

A portion of the proceeds will be donated to the White Nose Syndrome Rapid Response Fund.

Cost: \$25 per person
\$99 for two people, an overnight stay in a PEEC cabin, & continental breakfast.

570-828-2319 • PEEC@PEEC.ORG • WWW.PEEC.ORG



The Solution

By Mike Liese



I have a running joke called “The Solution”. This solution will solve any problem that you may have. The Solution is a wooden Maul (think 3 foot hammer) and its head is

a tree trunk. The Solution has been used for many tasks around PEEC. It removed the hay bales that were isolating the education office during the winter and removed the seats from the canoes that now inhabit the First Bloom / Growing Green / Canoe Garden.

The Solution has its place in camp as well. Each Bio-Battle began with The Solution smashing a few trash can lids which were suspended between 2 pillars to make lots of noise. In fact, for our first Bio-Battle, the campers at PEEC were competing to win The Solution.

The camp kids participated in events such as Defend Your Giant, Muckraking Macro-Invertebrate Mayhem, Orienteering, photo scavenger hunts, and CAMOFLAGUE! Planks



were painted and every camper received points for locating species in a PEEC CAMP “Field vs. Forest” Bio-Blitz. We found well over 60 species around campus and took many pictures of these critters. In the end, Field came out victorious and a lot of fun was had by all! Many campers came away learning something new, whether it was a new species learned or scientific name researched. (Bonus points were given for scientific names).

However, the campers did not receive the solution they expected. In the end, my giant hammer often creates more problems than it solves. So each camper got a small paper pot full of potting soil and some seeds to plant at home, because, in reality, the real solutions are not giant hammers, but the seeds we plant, nurture, and help grow. Watching that growth yields rewards that are truly worthwhile.

As someone who works with kids, these are the rewards that keep me working day in and day out to make PEEC Camp the best experience possible. Hopefully some of the campers here can find the same thing.

Growing Green

By Mike Liese

Most Sundays I would come into the dining hall for dinner and see the Easter Seals Growing Green kids for the first time that week. (They arrive Sunday afternoon.) They would yell “NATURE MIKE!”... all of them were very excited to be here. Some were in wheelchairs, others needed help eating, and some needed very little help with anything. Many couldn’t talk, but most managed to be able to communicate.

While they were here, they took over the care of the canoe garden that was started by First Bloom. Each day they watered, weeded, and harvested many plants. They started the summer enjoying the blueberries and by the end of the summer were eating tomatoes,

cucumbers, and all sorts of other greens from that garden.

These kids and young adults really made an impact on the PEEC staff this summer, so much so that we started the “PEEC / Growing Green Wiffle Ball Game”. On our free Thursday nights, PEEC staff and the Growing Green campers and staff would play a giant game of wiffle ball. No one kept score, everyone got a turn to bat, and the rules were more like guidelines. But we had an amazing time in the outdoors and many laughs were had, usually at the expense of staff.

But the thing about Growing Green this summer was that the kids really had an amazing experience & a chance to do their own kind of growing. The kind of growth that can’t be trained or bought, but the kind that is realized

when the campers are put into a situation where they need to be at least somewhat self-reliant. Where they can get their own food, make their own bed, and communicate their needs in their own way. The experience that they get here at PEEC is enlightening as they work, canoe, & enjoy the outdoors. Everyone from the kitchen staff to the instructors enjoys their presence and everyone leaves having grown at least just a little.



Recycled Donations

In our Summer Seasons Newsletter, we noted that PEEC had received many donations from a farmhouse, built in 1855, which was due to be demolished. Czashka Ross & Gary Roth, owners of the farmhouse, were very glad to know that so many of the items from the house could be given a new life at PEEC. Check below to see what we have been able to recycle for use around PEEC!

Donation	Recycled at PEEC
Refrigerator	Staff Use in the VAC
Microwave	Staff Cabin
Toaster Oven	Staff Cabin
Waffle Maker	Staff Cabin
2 Standing Lamps	Guest Cabins
10 Assorted Fans	Guest Cabins
6 Assorted Wood Cabinets	Staff & Stock
Metal Shelf Unit	Maintenance
Mattresses	Staff Cabins
Box Springs	Staff Cabins
Exterior Door	Cabin #28
Dehumidifier	Staff Cabin
2 Fire Extinguishers	Guest Cabins
Security Light	Guest Cabins
Forced-Air Boiler	Cabins #26 & 27
Coffee Kitchen Table	Cabin #29
3 Cartons of 4x4 Tile	Maintenance
Screw Gun	Shop
Sander	Shop
Foot Pump	Staff Use
Floor Pump	Shop
Water Filter	Staff Cabin
Plug-in RV Pump	Maintenance
Kitchen Vent	Maintenance
Fireplace Screen	Maintenance
6 Formica Shelves	Maintenance
Stackable Washer/Dryer	Schoolhouse
Washing Machine & Dryer	Main Building
2 Bed Frames	Schoolhouse
450 Gallons of Oil	Guest Cabins
5 Assorted Rugs	Guest Cabins
2 Sofa Chairs & Ottoman	Schoolhouse
Propane BBQ & Tank	Staff Cabin

In addition to the items listed above, many items were also reserved for future use (claw foot tub, gas cooking stove) or added to our AV Inventory (printer, fax machines). As a non-profit, environmental facility, we are always interested in donations. And between camp, cabins, public programs, hiking trails, & maintenance, the list of items for which we can find a use is very nearly endless!



ROAD SCHOLAR

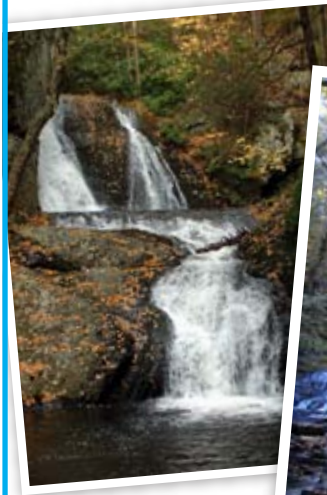
EDUCATIONAL TRAVEL & LEARNING
OPPORTUNITIES FOR ADULTS

Road Scholar participants, mostly over the age of 50, come from all kinds of backgrounds and from all over the United States and Canada. All participants have one thing in common: a love of learning. Program participants grow and learn through new experiences and the active exploration of subjects and interests around the world.

FALL FOLIAGE & WATERFALL PHOTOGRAPHY!

LED BY JOHN BARCLAY

SUNDAY, OCTOBER 17 – FRIDAY, OCTOBER 22, 2010



Learn through a mixture of field excursions, lectures, and slide presentations. This course will focus on digital photography and highlight the awe-inspiring beauty of the Delaware Water Gap National Recreation Area, along with classes on the natural history of the area. There will be discussions on composition, exposure, lighting, and equipment led by a professional photographer. Early morning and afternoon waterfall shoots will be included.

Photographers are asked to bring five images (prints, slides, or digital files) for review.

Please contact Road Scholar to make your reservation. <http://www.roadscholar.org/>

ECOZONE: BEAR UPDATE

Jeff Rosalsky



Avid followers of PEEC Seasons may remember the article this past summer about the dead 400lb black bear we salvaged for its skeleton. The plan was to create a "build a bear" skeleton

for the EcoZone, where children could assemble the magnetized bones of a black bear.

After a strenuous and olfactorily offensive effort, we brought the bear to PEEC and placed the bear head in a fish tank with a colony of dermestid beetles to clean off the flesh. After a slow start, where nothing seemed to be happening for almost 6 weeks, the colony reached critical mass and new patches of exposed bone began appearing daily. Within a few weeks, the skull was clean and Ryan, one of PEEC's most fearless instructors, removed the skull from the tank with a bribe of left-over chicken tenders for the beetles.

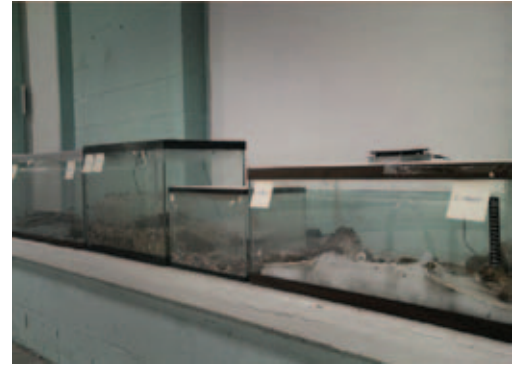


Unfortunately, that was only the beginning; we still had the body of the bear to contend with. We had placed in on the hill above maintenance, much to Ted's dismay, to see what damage Mother Nature's creatures would wreak. As we now had a tank of hungry beetles, only momentarily distracted by chicken, Ryan and I uncovered the woodchips, straw, and wire to see what other morsels we could get them to clean. Amazingly (don't read this part if you are squeamish), the beetles, worms, maggots, and their friends had eaten away most of the flesh, exposing the bones of the bear's legs, paws, spine, and ribs. The remains were mainly fur, bear fat, and bones. Mother Nature, however, had done nothing to improve the bear's fragrant bouquet.

Ryan and I freed bone from congealed white fat, a process neither of us relished, and gave them to the beetles for a little final clean up in a series of tanks.

The torso still needed some work, so we left it outside in a 75 gallon tank covered with a screen and added, of course, some beetles. We presume the colony will again grow to consume the newly available food source.

In the meantime, we have cleaned the skull in an ammonia and water solution and



will be preserving and hardening the bones with PaleoBond stabilizer and Vinac Beads dissolved in acetone. PEEC does Jurassic Park.

Through the donation of a 5x4 foot light table, which used to be a display billboard for a Charlie's Angels Movie poster (Cameron Diaz and a bear skeleton in the same article --- we reuse everything at PEEC), we will be organizing the bones before another volunteer builds the steel display spine. Who thought science education could be so much fun!



SCRAPBOOK WEEKEND

Friday, November 12 - 14

Join us for a

Fun & Creative

weekend!

Bring your supplies and ideas. We'll help you put it together to create spectacular books, cards, boxes, party favors, and more. Special weekend project: Help design a scrapbook of PEEC's history as "Honeymoon Haven."

\$200

TWO NIGHTS & 6 MEALS

\$150

COMMUTER RATE




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Oh! Henry...

By Flo Mauro



The AM Skier Insurance Company in Hawley, PA is and has been family-owned and operated for over 90 years. Their specialty is working with children's camps and programs and

it is our pleasure to have them as our insurance partner. They basically insure our best interest and the health and safety of every staff member, guest, and visitor to PEEC. Their phone lines are always open and they personally welcome every call and inquiry, no matter how slight or timely.

Henry Skier and his son Jeffery are avid golfers and have both sponsored and played in PEEC's Golf Outing for the past several years. They have done quite well and are usually in the



From left to right: Henry, Jeffery, and Aimee Skier

winner's circle somewhere, we might add. AM Skier was PEEC's Gold Sponsor for our most recent outing in July. Henry, along with Jeff and daughter Aimee, also donated a new AED system to PEEC.

Thank you, Henry, and the rest of the family at AM Skier for your donation and most of all, for being a great partner!

Thank You RMH!!

By Flo Mauro

The Ronald McDonald House of Charities of Eastern Pennsylvania (RMH) recently awarded PEEC a \$5000 grant to help renovate the entrance to PEEC's new EcoZone! The Lord's Valley McDonald's initially awarded a \$2500 local grant for the project which was, in turn, matched with an additional \$2500 from the regional Ronald McDonald House of Eastern PA. Dean Colley, new owner of the Lord's Valley franchise, commented that our grant application really piqued his interest and promised to stop in and visit soon to find out more about what we do. He is especially interested in our programs for families and children of all ages and abilities.

As you all may or may not know, EcoZone! is being built in PEEC's old indoor swimming pool room. The renovations will meet all ADA standards and guidelines, making EcoZone! entirely accessible for all visitors, campers, students, and families. The grant from RMH brings us that much closer to opening the EcoZone! doors...literally.



Jeff Rosalsky & Flo Mauro from PEEC (center) accept a \$5000 grant from Dean Colley, owner of the Lord's Valley McDonald's and Alicia Cox, a McDonald's employee.

Great Day at Great Bear!

By Flo Mauro

PEEC's 9th Annual Golf Outing was just another terrific event! The folks at Great Bear Golf & Country Club did another outstanding job for us. All were thoughtful, courteous, and did whatever they could to help make our event fun for all involved. The weather even cooperated, and for this summer, we consider that alone as totally successful! We are very thankful for the wonderful response from our sponsors this year. In this time of economic struggles for some, they all still chose to help and support PEEC's annual event.

And to those hearty 80 golfers who braved the heat and humidity for the chance to play Great Bear and help PEEC...BRAVO!!

Brian O'Hare, Chris James, Sterling Reiss, and Brian Reilly won the men's flight.

Gretta Moran, Pat McGarrick, Pat Moore, and Jane Kuhfus won the women's flight.



SALAMANDER BUMPERS



One of the projects for the Junior Naturalists at PEEC Day Camp this past summer was painting the parking lot bumpers in front of the main building. Due to a grant from the PA Council on the Arts through the PA Partners in the Arts program, the Junior Nats, along with counselors Matt, Skye, & Jess, were able to paint salamanders on the parking lot bumpers. Professional artist Kathe Walz instructed the campers in the concepts of painting and assisted them with the activity. As you can see from the photos, all of the participants had a great time with this project and the parking lot bumpers have never looked better!

Women Living Fully

Article Compiled by Heidi C. Normand

Presented By:

Matters the Matter LLC & Pocono Environmental Education Center

October 24th – 27th, 2010



"I could not, at any age, be content to take my place by the fireside and simply look on. Life was meant to be lived. Curiosity must be kept alive. One must never, for whatever reason, turn his back on life."

-- Eleanor Roosevelt

We all know that our lives and daily choices are best governed by our most deeply held values, beliefs, and priorities. Yet there is much to distract and dilute even our best of intentions. This April, PEEC will host a three-day women's conference that offers women the opportunity to reconnect with that which is most important to them and find new ways to live that are reflective of who they are and what they value. This is an experience dedicated to women's complete well being, both individually and collectively.

Women from all around the country will be gathering for this inspiring conference at PEEC where they can reflect, renew, and restore. We have gathered nationally known authors, speakers and other experts together to provide an insightful and inspiring program about the things that are vital to women in midlife. Topics will include living authentic and meaningful lives, financial well being, and the need for women to move beyond competition and towards mutual support, completion, and collaboration.

Believing that learning can be a collaborative and supportive experience, offerings will be participatory and introspective, inspiring and challenging. There will be time to connect with those around you, and, you will have the opportunity to connect more deeply with yourself and those things that matter the very most to you.

Below is a list of presenters. Many have websites that will give you more information about their area of expertise. As well, more information about the conference is available at PEEC's website (www.peec.org) and at www.womenlivingfully.com.

~Amy Ferris, author of *Marrying George Clooney*; *Confessions from a Midlife Crisis*.

Amy Ferris is an author, screenwriter and editor. She co-wrote the screenplays "Mr. Wonderful," and "Funny Valentines." She is the author of a YA novel, "a greater goode" (Houghton Mifflin Publishers), contributed to the anthology, "The Buddha Next Door," and is a contributing author for the anthology, "He Said What" (Editor, Victoria Zackheim, Seal Press, Spring 2011). *Marrying George Clooney, Confessions From A Midlife Crisis* is being produced (in partnership with CAP 21 Theater Company) as an Off-Broadway play in the Spring, 2011.

~Liz Geitz, author of *Soul Satisfaction and Gender & The Nicene Creed*. An Episcopal priest and spirituality faculty member of the CREDO Institute, Liz is the award-winning author of seven books and an editor of *Women's Uncommon Prayers* and *Lifting Women's Voices*. Her upcoming book, *Pregnant Pigs and Politics*, is an engaging, eye-opening travel memoir of her journey to a West African Cameroonian orphanage. Poignant, insightful and humorous, Liz's books have been hailed by Publisher's Weekly, newspapers across the country, and people as diverse as Annie Flanders, Desmond Tutu and Helen Prejean. "It is to be hoped that Liz (Elizabeth Rankin Geitz) will be heard." (*Lead review in Publisher's Weekly*)

~Gregory Ann Cox was one of the early female graduates of the Culinary Institute of America in Hyde Park, NY. She spent 20+ years in the hospitality industry, and recently, cooking privately for some of the country's rich and famous on the eastern end of Long Island in the Hamptons, NY where she currently lives with her husband Mark Offley and a crowd of cats. Six years ago Gregory felt the desire to explore her early longing to work as a psychologist. Logistics and a few loud messages from the universe directed her to the Coach Training Alliance instead and a love and passion for coaching was born. Currently Gregory offers workshops, live seminars and tele-seminars on Midlife health, fitness, and sanity, as well as one on one and group coaching. She is an author and speaker on the topic of midlife women's mind and body tune-ups and living the second

half fully expressed. Her newsletter, Food For Thought, and blog, Midlife With A Vengeance, keep subscribers and clients up to date on what's new in feeling and looking better than ever in the second half of life.

~Amy Litzenberger graduated from Vassar College and received her MBA from NYU. She worked as an investment banker, raising money for emerging growth companies, while her older son was growing up and her first husband stayed home to care for him. When she married her current husband she left the financial industry to raise her second child and manage the family investments.

~Molly Davis and Kristine Van Raden: Molly & Kristine are co-authors of the internationally published book, *Letters to Our Daughters*. Their beautiful book, featured on the Oprah Show, is a collection of letters from women to their daughters. It illustrates the common threads that connect us as human beings in the midst of our differences. They are also founders of Matters That Matter LLC. Their programs seek to inspire people to consider the matters that matter to them, and in so doing, find new ways to live that are reflective of who they are and what they value. Kristine & Molly have moved audiences across the country with their challenging, insightful and relevant message.

~Robyn Hatcher is an actress, writer and communication skills expert. Robyn was so shy as a child, "Shy" was her actual nickname. Having grown up afraid to speak taught Robyn a lot about the subtle art of communication. Now she is passionate about helping people express themselves with clarity, confidence and power.

~Hollye Dexter is author of a soon-to-be-released memoir and a singer/songwriter with four albums out. She founded two nonprofit organizations, administering arts programs for teenagers in the Foster Care and Juvenile Justice Systems. In 2007 she received the Agape Spirit award from Dr. Michael Beckwith ("The Secret") for her work with at-risk youth. She lives in Los Angeles with her husband and three children.

~Monica Holloway is the critically acclaimed author of *Driving With Dead People*, described by Newsweek as "unforgettable." She contributed to the anthology *Mommy Wars*, from which her essay "Red Boots and Cole Haans" was described by Newsday as "brilliant, grimly hilarious." Her recent best selling memoir, *Cowboy & Wills*, was hailed by PEOPLE as a "sweet and heartbreaking tale."

Continued on p. 9

Women Living Fully - Continued from p. 8

Monica works with and for the benefit of both autistic and abused children and their families. She is a force to be reckoned with. www.monica-holloway.com

~**Heidi C. Normand** is one of the two Associate Directors of Education at the Pocono Environmental Education Center. Prior to her career in Environmental Education she worked in the world of Makeup and Fashion, all the while feeling that she was not doing what she was meant to do in this life. So, at age 29 she packed it all up and moved to Prescott Arizona to get her Bachelors in Environmental Education and Creative Nonfiction at Prescott College. Six years into this new career she has found success in incorporating the creative side of career number one into the many realms Environmental Education Management (career number 2) takes her. During her off time food, photography and writing are her passions. Revamping her food blog www.foodiesarefun.blogspot.com is her current project-love.

Girls in Gowns, Gents in Jeans

By Molly Check

Yes, the title is confusing and a bit of a mouthful. For weeks leading up to the event, no one in the office could quite agree on what to call it. All we knew was that the full title was too tricky to refer to in quick conversation. So we improvised. The fundraiser. The guys and girls thing. The big event. The gala.

We'll have to change the title for next year, but the concept will remain the same. The idea behind PEEC's most recent fundraiser was to dress comfortably. For some, that meant blue jeans and a favorite shirt. For others, it was a suit coat or an elaborate gown and footwear ran the gauntlet from dress shoes to flip flops. Regardless of their clothing choices, people came out to the "Girls in Gowns, Gents in Jeans" fundraiser to show their support for PEEC and enjoy a delightful evening of good food and music.

The food was prepared by Wendy Gannon and her hard working staff in the dining hall. An amazing array of appetizers was enjoyed as visitors arrived and mingled beneath a canoe and a larger-than-life-size dragonfly which were hanging from the ceiling. There were jalapeno margarita shooters served in shot glasses made of ice, in addition to Shawnee Craft Beer and local wines. The 7-course meal consisted entirely of finger foods, adding another fun twist to the evening. There was fresh chilled gazpacho that guests could drink with a straw or dip with their bread. Wooden skewers were used for the spinach artichoke hearts, striped fried ravioli, and asparagus wraps with smoked salmon, goat cheese, and dill. The meal was rounded out with Caribbean-style jerk chicken lollipops and corn tacos with pork, grilled pineapple, and mango. For dessert, guests were treated to chocolate cupcakes topped with pop rocks and raspberry coulis.

Master drummer, Maxwell Kofi Donkor, and Rick Nichols of Syncopia provided fun, upbeat music throughout the night that encouraged some of the bravest to get up and dance. Their rhythms and beats provided the perfect soundtrack for our "informally formal" gala. The highlight of the evening was the on-going silent auction of PEEC staff-led adventures. Each staff member chose his or her favorite activity to share with the public, and the highest bidders won a personal excursion for themselves and five others. The bird walk was very popular amongst the bidders, as was the low ropes course. One of the packages included night canoeing on Pickerel Pond with a campfire and s'mores afterwards. Other winners will receive personal instruction in wood burning, orienteering with a map and compass, or a night hike on the Tumbling Waters trail.

The positive response to the auction was wonderful. It's a great way for the staff to share their passion and enthusiasm with PEEC supporters. All of the proceeds from the evening will benefit PEEC's educational programs. Thank you to everyone who came out and made it such a wonderful evening. We'll see you all next year, at the 2nd annual "guys and girls thing."

Friends OF PEEC

PEEC is the perfect place for
learning, exploring, connecting,
and relaxing.

Where learning comes naturally!



Consider joining &
supporting PEEC...

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Photos by Paul Berge

Hydraulic Fracturing

By Kristin Heckrote

Depending on where you are located, you may have a lot, a little, or no information on the topic of hydraulic fracturing for natural gas. In locations where there is actual drilling, the debates about the process and the impact on local communities are very heated. The main goal of this article is to provide a general background on what hydraulic fracturing is and an overview of how it works.

One of the most common types of rock in the area around PEEC is shale. Made mostly from clay particles, shale is distinguished from other clay-formed rocks by its ability to break into fine and distinct layers. Shales vary in appearance and make-up depending upon location and rock layer. Running deep underground and stretching from New York through northern and western Pennsylvania, eastern Ohio, and parts of Virginia and West Virginia is a type of “black” shale called the Marcellus Formation. This formation contains a lot of natural gas.

Natural gas forms when extreme heat and pressure break apart the carbon bonds of organic material. Temperatures that are slightly cooler form oil, while higher temperatures form natural gas. Marcellus shale is a marine formation with a lot of organic material that has been formed into fossilized gas. Methane, followed by ethane, propane, and butane are the main components of natural gas. The main way to harvest this natural gas reserve is to use a process called hydraulic fracturing.

The Marcellus shale layer is located in most areas about a mile underground, which, until the 1990’s, made it economically unsuitable for gas drilling. In the 1990’s, an oil company in Texas, using new technology, developed a different method for hydraulic fracturing. In 2002, this new type of hydraulic fracturing was combined with horizontal drilling, making it easier to drill into the Marcellus formation. In order to reach the natural gas, the process first involves drilling a vertical well shaft into the shale layer. After the vertical shaft has a casing put in place to protect groundwater, a connecting horizontal well is then drilled into the shale layer. This layer also has cement casing put into it. A tool called a perforating gun is lowered into the well and put into the

desired section of pipe. Charges are set off opening up the cement casing and causing fractures to form in the shale.

A mixture of water, sand, and chemicals called a fracturing fluid is put into the well under high pressure. The liquid mixture is forced into the cracks of the well. The sand and chemicals are pushed into the fractured shale. The chemicals help to keep the sand from clogging up while the sand particles push into the rock to keep the fractures opened in order to allow gas to escape. A plug is then put into place and another section is done until the entire length of the vertical well has been fractured and plugged. The plugs are then removed in order to allow the gas to flow up the shaft and into waiting storage units.

The internet has a lot of information about hydraulic fracturing. In reading through the information, there were two areas of concern that did not seem to be addressed. Accidents notwithstanding, there is a lot done to directly protect aquifers and ground water while the drilling occurs and from pollutants used in the drilling process. However, there is a lack of information about what is being done to monitor the water used in the hydraulic fracture fluid. Some of the chemicals in the hydraulic fracture fluid cause both animal and human health issues. Also, Marcellus shale itself has different minerals that are hazardous to health.

There seem to be two ways water is officially discarded once it has been used. Water can be trucked to treatment plants or put into lined pits for evaporation with the remaining chemical sludge being removed later. It was not easy to find information about how much regulation is taking place in order to remove pollutants from this water. If the water is not being treated properly, what are the possible effects from bioaccumulation (direct affect on an organism from contact with chemicals that are harmful to health) and biomagnifications (indirect effect of some chemicals, like arsenic, becoming more concentrated as they are passed up the food chain) due to exposure to the chemicals in the water?

The second concern that was addressed indirectly in a few places was the possibility of gas leaks. While natural gas burns more cleanly than other fossil fuels, methane is a green house gas that has much more of an effect on the atmosphere than CO₂. Global climate change is one of today’s biggest environmental concerns. What plans are in place to stop methane leaks should one occur?

Within the next few years, we here in Pennsylvania will probably see a considerable increase in hydraulic fracturing for natural gas. There is still a lot of research to be done in this field and it seems important to stay informed on this topic. Any time something as large and potentially impacting like hydraulic fracturing is introduced to an area, it is necessary to weigh all of the possible results and remember that the effects are not just going to impact the local community, but also the state, nation, and even the globe.



PEEC - A - BOO!

OCTOBER 30, 4-7 PM • \$5 PER CHILD

Halloween Trail

Follow your guide around our family-friendly trail.

Learn about nocturnal creatures and other amazing animals and then listen to a story around the campfire!

Enjoy crafts and other activities before and after your journey on the trail.

Tasty treats will be available for a nominal fee.

PRE-REGISTRATION IS HIGHLY RECOMMENDED.



Peec²energy efficiency corner

New Challenge:

The Visitor Activity Center/ Dining Hall oil-fired, hot water heater has a 175 gallon tank to supply hot water to the kitchen and the bathrooms. Although it is just over five years old, it has developed an occasional small leak in the tank. The cost to replace the tank was in excess of \$4000, which gave us the opportunity to evaluate whether this was the ideal system for our needs.

It turned out that hot water in the dining hall is only required for the two bathrooms (which are 80 feet away from the heater), one kitchen sink, and the dishwasher (which has its own hot water pre-heater). The existing system was maintaining 175 gallons at 145 degrees 24/7 and used 4.3 gallons of oil an hour when running full out. Given the tremendous variability of our dining hall use throughout the year, a more efficient replacement solution was required.

The Solution:

We are installing two Paloma PH2-28RDVS tankless, propane, on-demand hot water heaters. Each can increase the incoming water temperature 80 degrees, while maintaining a constant 4.1 gallon per minute flow. We will install the two units in sequence, so the second heater is boosting the first if called upon by high demand. Otherwise just one heater kicks in. The two heaters together cost under \$2,500 and have an energy efficiency factor of 0.82%. Moreover, there is zero standby loss, as no water is heated unless required. As the public bathrooms are at the other end of the VAC, we will install two Bosch Powerstream Pro under the sink, point of service, hot water heaters, which we have used successfully in the Main Building. They are 99% efficient with no standby loss. This will also eliminate the need for the electric recirculating pump that is currently in constant use.

AWARD - WINNING VAC



The **National Park Service** hosted a "The Designing the Parks" competition and has announced honor & merit award winners. In the "Building Design Award" category, PEEC's Visitor Activity Center (VAC) received an Honor Award, along with the Liberty Bell Center in Philadelphia.



Building design by Peter Bohlin of Bohlin Cywinski Jackson.

FALL PHOTO WITH RAYMOND KLASS

FRIDAY, OCTOBER 22 – SUNDAY, OCTOBER 24, 2010

Capture the Colors of
Autumn

This workshop includes hands-on practice and personal instruction for the whole process of photography –taking the picture, transferring the image, and storing it on your computer. Participants are encouraged, but not required, to bring a laptop with Photoshop installed.

4PM REGISTRATION

For more info and reservations:

Call Molly Check: 570-828-2319

Email: mcheck@peec.org

www.peec.org



\$250 TWO NIGHTS
\$200 SIX MEALS
COMMUTER
RATE

Call now to make your
RESERVATIONS

THE PERFECT PEEC PRESENT (or Great Gift)

A Mariann Oswald Special Announcement

I had a really hard time coming up with the “perfect” article for the fall newsletter. I wanted to let everyone know about the PEEC store/gift/souvenir shop, but it is so diverse I wasn’t sure how to go about it. I mean, there are Silly Bandz (the newest FAD for anyone not in the know), books on birds, t-shirts and sweatshirts, mugs, toys, journals, things to hang up, things to listen to, things to read, things to just enjoy. See what I mean? How do you put that all into one little article?

Hmmm. I guess what I really, REALLY, want to tell you all about isn’t so much what we have in the store/gift/souvenir shop as what we are doing to make it all available to you – anywhere, anytime! It’s not too hard to figure out that I mean... the internet. At times life seems to revolve around the internet, except for us at PEEC. Here life revolves around, well, life. But, still, I know and you know that you cannot always get to PEEC when you want to buy one of our great sweatshirts or tees, hats, mugs, etc. So, COMING SOON TO A PEEC NEAR YOU, an online store/gift/souvenir shop. We will have all kinds of PEEC logo merchandise, like hats, totes, journals, jackets and sweatshirts (hoodies, of course). You will be able to pick the color, size, and graphic you want on apparel, from 18 months to XXXL; from lime green to grey to fuchsia. We even have hoodies and t-shirts for your favorite teddy bear (and a teddy bear or moose to go along with it if you like). Anyone who has used the www.PEEC.org website to register for camp, workshops, or Friends of PEEC memberships has already used the handy dandy, user-friendly credit card payment system which will be set up for the store/gift/souvenir shop as well.

Oh, but don’t think you can skip coming to the on-site (as in “at the Delaware Water Gap National Recreation Park”) store/gift/souvenir shop. It is filled to the treetops with plenty of great puppets, books, stuffed toys, maps, mugs, bags, lanyards, patches, pins, magnets, pens, smencils, postcards, flippy flyers, t-shirts, visors, hats of many varieties, pamphlets, ponchos, sticker and coloring books, key chains, DVDs, lunch bags, water bottles, cameras, backpacks, and bandannas. Oh, and did I tell you we have really great sweatshirts?

PS: Do you have any ideas for a good store/gift/souvenir shop NAME? Something a little catchier and shorter? Any thoughts of things you would like PEEC to have in the store/gift/souvenir shop? (No food) I would love to know your ideas. Really, I would: moswald@peec.org



Save the Dates for Spring 2011

Pocono Environmental Education Center presents...

WOMEN LIVING FULLY: ...INVESTING IN OURSELVES

APRIL 1ST – 4TH, 2011

Come to the Poconos to Re:Treat Yourself!

Revive, renew and rekindle your relationship with yourself!

Join women from all over the country as we participate in workshops and presentations by nationally acclaimed authors, presenters and professionals aimed at helping women of middle-age reconnect to the things in their lives that are most important. If you are in need of replenishing your soul... this is the place to do it!

VISIT **WWW.WOMENLIVINGFULLY.COM**
IN NOVEMBER FOR UPDATED
INFORMATION & REGISTRATION.

peec@peec.org • www.peec.org • www.womenlivingfully.com



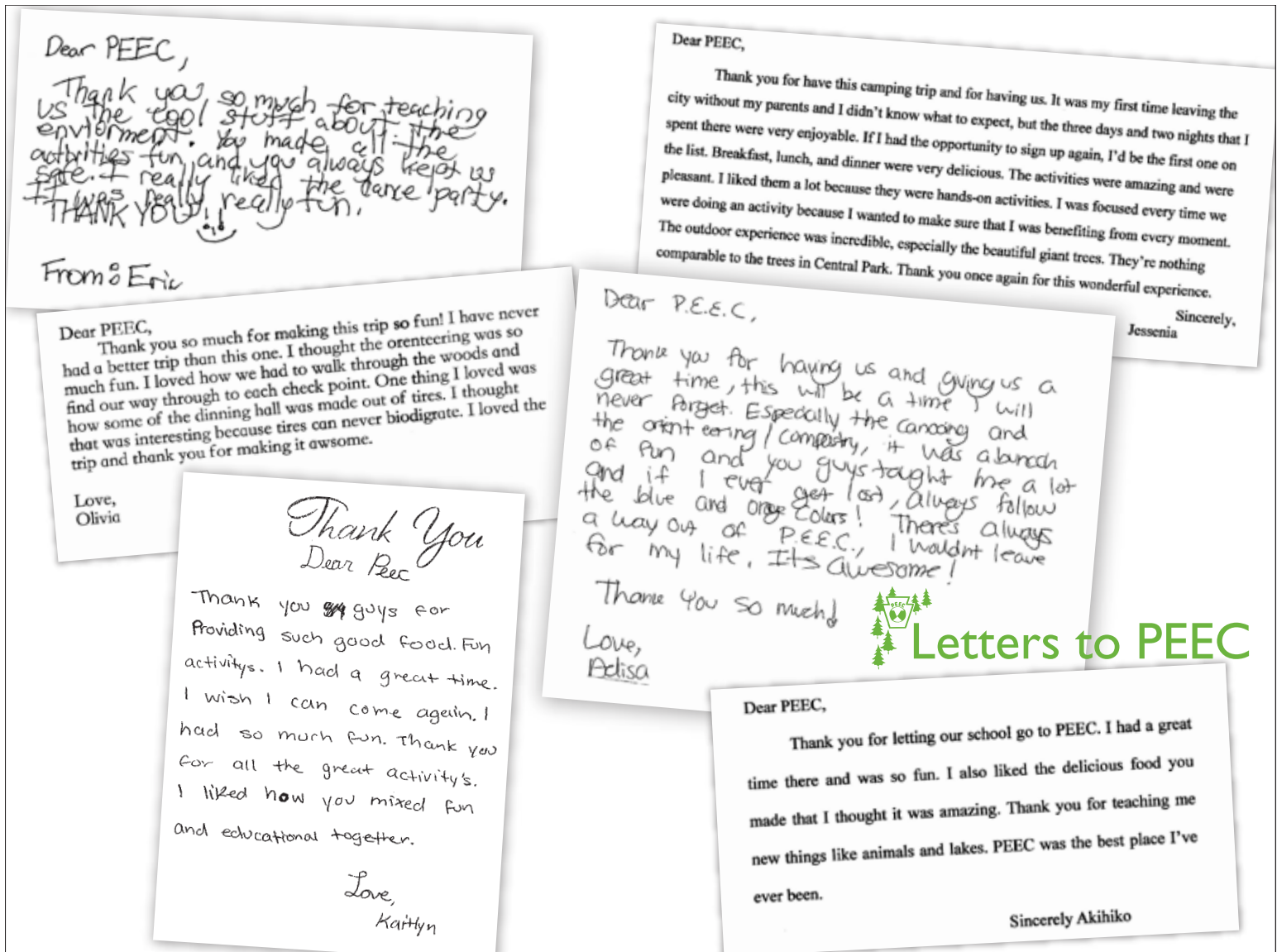
Wishful Thinking!

Did you ever think of what you would do if you won the lottery? Maybe you have found yourself day-dreaming about all the good works you would do. Did you ever wish you could give just a little bit more? You can, if your employer has a matching gifts program!

Thousands of companies, large and small, offer these incentives for their employees. Here is an easy, STEP-BY-STEP process to secure a matching gift for your donation.

1. Ask the Human Resource Director where you work if there is a Charitable Matching Gift Program.
2. If 'yes', simply ask for the Form and complete your portion of it. If 'no', talk with your HR Director and suggest that your employer consider it. A Matching Gifts Program is a win-win for all involved. Both parties benefit, not to mention the charity of choice (PEEC, of course). It also helps the company see the good works in which their employees are involved.
3. Include your Matching Gift form with your next gift to PEEC. We will take care of all appropriate paperwork and follow-up procedures.

That may be all it takes to double the good work that you do! We look forward to helping you all we can in the process. Call Jeff or Flo if you have questions at 570-828-2319.



 Letters to PEEC



UPCOMING EVENTS



OCTOBER

NATURE AT NIGHT

Oct 2 • 6-8pm • Cost: FREE

RAPTORS & HARVESTS

Oct 2 • 9am-6pm • Cost: \$60

FALLING LEAVES: Family Nature Getaway

Oct 8-11 • Cost: \$190,
Children 7-10 years: 25% discount,
4-6 years: 50% discount, 3 & under: free

MONUMENTS OF NATURE:

Falling Leaves Tree ID

Oct 9 • 1-4pm • Cost: \$10, \$5 children 10 and under

SUNDAY FOR SINGLES

Oct 10 • 10am-Noon • Cost: FREE

FALL PHOTO WITH JOHN BARCLAY

Oct 15-17 • Cost: \$250

FALL PHOTO WITH RAY KLASS

Oct 22-24 • Cost: \$250

HARVEST MOON POTLUCK

Oct 24 • 6-9pm • Cost: Bring a Dish to Share

PEEC A BOO

Oct 30 • 4-7pm • Cost: \$5 per child

BATS IN THE BELFRY! Party for Adults

Oct 30 • 8pm • Cost: \$25 per person,
\$99 two people, an overnight stay in a PEEC cabin,
and continental breakfast.

NOVEMBER

GIRL SCOUT BADGE FESTIVAL

Nov 6 • 9am-4pm • Cost: \$12 half day, \$20 full day

FLYING NEEDLES

Nov 12-14 • Cost: \$200, \$150 no lodging

SCRAPBOOK WEEKEND

Nov 12-14 • Cost: \$200, \$150 no lodging

BOY SCOUT BADGE FESTIVAL

Nov 13 • 9am-4pm
Cost: \$12 half day, \$20 full day

GAME DINNER

Nov 13 • 7pm • Cost: TBA

HOLIDAY BOWS AND BOUGHS

Nov 14 • 2-4pm • Cost: \$10

FULL MOON HIKE

Nov 27 • 5-7pm • Cost: FREE

DECEMBER

TUMBLING WATERS HIKE

Dec 11 • 1-4pm • Cost: FREE

CHRISTMAS BIRD COUNT

Dec 26 • 8am start • Cost: FREE

