

Cooks Current

"To protect, preserve and improve the quality of water, land and life in the Cooks Creek Watershed"

Volume 10, Issue 2

Newsletter of the Cooks Creek Watershed

Spring 2013

2013 Events

Regular Board Meetings:

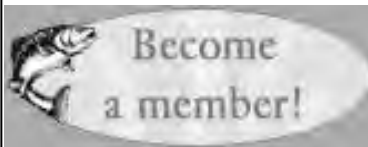
Springtown Fire House- 7:30PM

*May 23, June 27, July 25, Aug. 22,
Sept. 26, Oct. 24, Nov. 21, Dec. 19.*

All are welcome! We appreciate your involvement!

Special Events:

*June 15, Mini Monster Mayhem
July 13, Invasive Plant Workshop
Oct. 5, Fall Dinner
Nov. 9, Fall Clean-Up*



See back for details!

We're on the web!
www.cooks creekpa.org

Cooks Current is a publication of the Cooks Creek Watershed Association.

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From Across the Board...

It always makes me happy to be a part of this community that cares enough to come out and spend a few hours cleaning up our public space. Our 10th annual roadside green up day was again, a rousing success. With the storms and lack of snow, it seems that there was a lot more trash out there than usual, and it's always good to go into the warm seasons with a clean slate. For all who helped, thanks a bunch! All the other species we share our watershed with are appreciative too, since most of the trash would have ended up in our waterways, causing untold damage. Roads cleaned up include 611, 212, 412, Lehnenburg Rd, Gallows Hill Rd, Bursonville Rd, Drifting Drive, Durham Rd, California Rd, Keystone Rd, Gruyversville Rd, State Rd, Richlandtown Pike and Slifer Valley Rd.

As we move into warm weather, we need to be vigilant about water conservation, and think of ways to help Mother Nature out with water infiltration. While most of us already are careful about water use, you probably don't think as much about "virtual water",



A sure sign of spring, Blood Root

Photo by: Siobhan Royack

or the water that it takes to bring you the products you use every day. Products like coffee and beef are much more water intensive than, say, tea or vegetables. Not to mention that they're not as good for you. As for infiltration, please refrain from mowing to the edge of water features (both perennial and intermittent) and if you have wetlands on your property, allow them to revert to a natural state (weeding out the invasives of course). Not only will this improve water quality

and quantity, but it will increase wildlife utilization on your property. If you're already doing these things, thank you...now go convince your neighbors to do the same!

A final thought for you regarding damage from Hurricane Sandy. While most of you have already cleaned up your yards from downed branches and trees, you might think that this summer would be a good time to clean up the woods and streams of fallen debris as

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Creature Feature: Mourning Cloak Butterfly

Number 25 in a series on the fauna of the Watershed By: *W. Scott Douglas* (pictures from Wikipedia)



Mourning Cloak

One of the surest signs of spring for me is the first Mourning Cloak butterfly. Having it, or one of its bright orange relatives, the Comma or Question Mark, flutter by in the midst of the otherwise grey woods is a welcome sight. I often wondered though, how these butterflies could be out this early, given that there is no greenery anywhere for native caterpillars to eat. So, I did a little research. As it turns out, these brush-foot butterflies, of the family Nymphalidae, actually over-winter as adults. When the first warm days of spring come, they crawl out from their winter shelters in trees, inside fallen logs and under leaves to let the sun get their blood warm enough to fly. Since there are precious few flowers out at this point, these spring beauties lap up tree sap and salt from puddles or dung. They then find their mates, lay eggs and are gone by the time the warblers migrate through in May. Their caterpillars are barely out of the egg by then, successfully avoiding what would otherwise be significant predators.

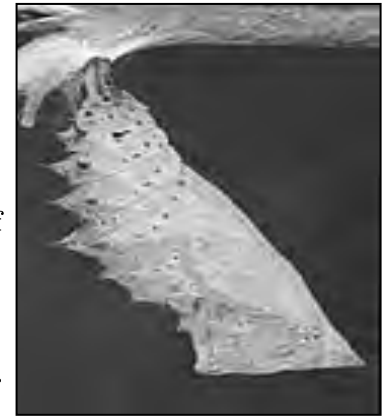
Within 2 weeks after the adults lay their eggs, and then die, the caterpillars emerge, just in time for spring leaf emergence. The caterpillars of all three of our over-wintering



Mourning Cloak caterpillar

butterflies feed on willow, elm and even nettles. They are all protected with clumps of spikes, which are not poisonous per se, but certainly are irritating if they become lodged in the skin. When the caterpillars are about 3 inches long, they find a quiet place to build their spiky brown chrysalis.

It is well camouflaged, so you might not see it hanging under a twig or branch, or right off the trunk of a tree. The adults emerge in late August.



Mourning Cloak chrysalis



Eastern Comma

When I was young, I spent hours chasing butterflies to try to capture them for my collection. This required a complicated procedure involving a killing jar filled with poisonous fumes, pins, mounting boards and special cases for storage. With today's modern photography equipment, it's much easier to take a high quality digital photograph. I imagine the butterflies like it better that way too. If you try, make sure that you use the "macro" or close-up setting on your camera. If you would, share your successful butterfly hunting with us by posting photos on our Facebook page. We will help you identify your "catches" if we can.

More Information and sightings Map: <http://www.butterfliesandmoths.org/species/Nymphalis-antiopa>

Green Tip #22: Saving on Your Food Bill ...

Many people believe that humankind's next major food source will be insects. In many cultures, insects already provide a source of protein that is both easy to acquire and inexpensive. This thought brings us to a discussion concerning the periodical cicadas. Starting in April and lasting through June of 2013, the 17 year Brood II emergence will occur. Once the emergence starts in our area, it will last 4 to 6 weeks. The cicadas are known for the tremendous noise that they make.



Many people are concerned that the cicadas will damage their plants. Actually very little damage occurs because cicadas don't have any chewing mouth parts. When they feed (they actually drink more like aphids), the adults and nymphs feed on plant sap called xylem which they suck up through a feeding tube called a proboscis. Since the cicadas only take a small amount of the plant's sap, they don't seem to affect trees and other plants very much.

The only tree damage that seems to occur is due to the female cicada piercing small branches on woody plants in order to have a place to insert her eggs. This may cause the branch to weaken and break off but the tree is not damaged severely.

The cicada itself is a large impressive insect but it doesn't bite or sting and it is not poisonous or toxic. Many of the newly emerged cicadas are eaten by birds. The numbers involved in this emergence are astounding and this brings us back to our opening paragraph.

Quite a few people are experimenting with different ways to prepare cicadas as a nourishing meal. They've been used as a topping on pizza, they've been fried, dried and toasted. They've been made part of a jello mold. Aficionados claim they have a nutty like flavor although others say they taste a bit like raw potato. In any event, those of you brave enough to try can save some money on your food bill if you're willing to harvest some of this soon-to-be available food source. In the words of Julia Child "Bon Appetite"!

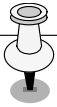
From Across the Board... *(Continued from page 1)*

well. Aesthetics aside, this is not a great thing to do. The forest will assimilate the fallen debris, while at the same time providing shelter for countless animals and rooting places for plants. If you need the firewood, or want to sell off the logs, that's fine, but leave the tops and trimmings in the woods. The streams also benefit from fallen trees, which slow down storm water and provide cool pools for trout and other desirable species. You might be pleasantly surprised by what the Creek may make for you. So, unless the removal is necessary for safety or to prevent flooding damage, just let it be. If you do need to use a chainsaw in the stream, please be careful and use a safety line and have a buddy belay you from shore – it's all too easy to slip and become entrapped in or under the water.

Lastly, please think about coming out to our Mini-monster Mayhem in June (Father's Day Saturday) or our Invasive Plant Workshop on July 13th. You can find details inside this newsletter.

Yours in conservation,

W. Scott Douglas, President



News from the WIP Program at Palms...

Currently our WIP students are working on the following:

- ◆ *Celebrated World Water Day in late March by tracking and reporting discarded water waste throughout the PALMS building*
- ◆ *Presently started collecting our spring data for fall comparisons*
- ◆ *Last week visited the AJ Meerwald - an oyster schooner commissioned through the Bayshore Discovery Project at the Philadelphia port*
- ◆ *HydroMania @ Cedar Crest College on May 9th - WIP students will present three watershed topics to approximately 500 Allentown elementary school students throughout the course of the day*
- ◆ *This month also holds our four day/three night Marine Science Consortium visit in Wallops Island, VA 5/29 - 6/1*
 - ◆ *More Information can be found at: <http://www.fws.gov/refuges/profiles/index.cfm?id=51571>*



<http://www.fws.gov/refuges/profiles/index.cfm?id=51571>



Invasive Plant Workshop

Cooks Creek Watershed Association Partnering with
Laughing Springs Forest Community

Presents: Invasive Plant Workshop

Location: 2915 Springtown Hill Rd.

Phone: 610-346-8229

Date: July 13, 2013 / 9:00am - 1:00pm

Includes:

- ◆ **Save a Native! Evict the Invasives! Learn the four I's of Invasive Plant Management:**
 - 1) identify the distress
 - 2) indicate the plants involved
 - 3) introduce a solution
 - 4) implement the cure
- ◆ **Common sense techniques shown on actual eviction sites highlighting the *Big Bad Six* of our Watershed.**
- ◆ **Native plant alternatives will be available for sale.**
- ◆ **Native garden tour.**
- ◆ **GUEST SPEAKER.**

Come join us! 610-346-8229 / Reservations appreciated, but not needed.

Thank you, Hans O. Reimann Jr.

More Information on invasive plants in PA: <http://www.dcnr.state.pa.us/forestry/plants/invasiveplants/>

List of invasive plants: http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_20026634.pdf



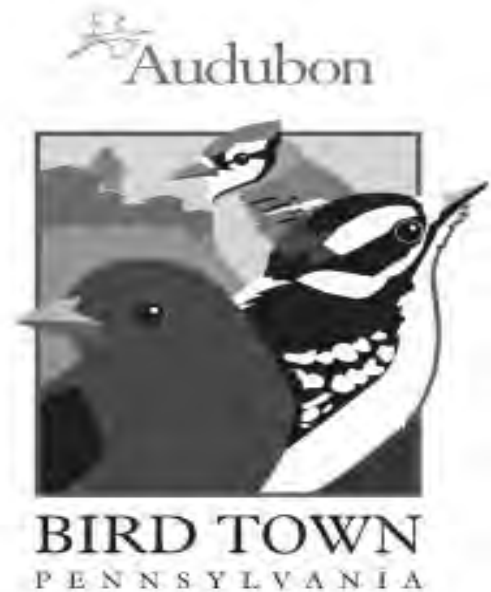
The View from Laughing Springs: Get Ready for "Birdtown"

By: Hans O. Reimann Jr.

The annual renewal of the spring season was tempered somewhat by the reluctant withdrawal of the winter season's chill. But, the stream corridors, wetland expanses, and spring headwater areas still had insect activity after the skunk cabbage flowered in February.

As I pen this April, 2013, article, our year round bird neighbors are very happy. Kohlberg Hill has six species of woodpeckers: from the coo-cooing nuthatch, to the downy, flicker, and squawking red headed. Hurricane Sandy's tree damage has not hurt the woodpeckers' habitats. Here at the Laughing Springs section of Kohlberg hill, the biggest centenarians fared well in the storm; ash, red oak, black oak, white oak, chestnut oak, black birch, and maple; these trees are well over one hundred years old and prime bird habitat. The pristine nature of Laughing Springs can serve as a template for other property owners to improve their home turf into better bird habitat. I continue to marvel at the resilience of our forest habitat after two major autumn storm events in successive years. The Laughing Springs forest now channels deer away from many small trees, shrubs, and wildflowers because of the maze of smaller downed trees and limbs. These trees and limbs will eventually decay and be assimilated by an incredible variety of insects, fungi, mushrooms, and other creatures. It's the amazing forest food chain and cycle. Birds seem to be the best ambassadors of this cycle.

Part of our Cooks Creek Watershed Association mission may be described as creating sustainable communities through the lives of birds. To help us help you in this grand endeavor, the Springfield Township Environmental Council has implemented the Audubon "Birdtown" program. And, the Springfield Township supervisors approved this voluntary participation with the National Audubon Society. It will enhance our sense of place by promoting native plants as a basis for our living landscape. These plantings are vital to the life of birds and also to our own lives. Benefits of "Birdtown" participation include: 1) improved quality of eco-systems, 2) community pride, 3) expanding resources available to native birds and insects, 4) safer, more happy places to live, work, and play, 5) reduced



<http://pa.audubon.org/bird-town>

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maintenance bills and times, 6) cleaner water and air and less landfill, 7) cooperation among community officials and residents, 8) encouragement of exercise and recreation, 9) renewed eco-system services such as stormwater management, and 10) better informed constituency. While implementing the best landscaping practices on an individual property, such practices can help support wildlife, protect natural resources, link adjacent properties through a broader community plan, and can yield even greater conservation outcomes by stabilizing common bird populations but also expand the resources to more specialized species. “Birdtown” provides the framework for implementing such a plan. {<http://pa.audubon.org/AAH-Birdtown>}. Here are some bird friendly tips that may sound familiar:

- a) Plant like nature, as a diversity of plants yields a diversity of insects and more birds.
- b) Eliminate the use of pesticides, and a mix of insects and others will create a natural balance.
- c) Tolerate leaf damage, as all native insects are beneficial and nibbled leaves means your yard is functioning.
- d) Provide fresh water for all birds to bathe and drink.
- e) Be vigilant, as birds will accidentally transport invasives to your yard; so learn to identify and remove exotic invasive plants; native "weeds", on the other hand, might be beneficial.
- f) Consider colors and texture; native flowers and other herbaceous plants come in a variety of shapes, colors, and textures to enhance your habitat garden.

P.S. We are hoping Durham Township will join the “Birdtown” program, so that this could become a Watershed "wide" program. CCWA members or anyone living in Durham Township should attend Environmental Council meetings and urge them to act on this.

To learn more of the “Birdtown” Initiative and hopefully participate, contact me, Hans Reimann, at 610-346-8229 or Email me at: Laughingsprings@earthling.net (that’s “ling” with an “L”).

More information on “Bird Town”: <http://pa.audubon.org/bird-town>

Fracking Impacts and Risks

By: Karl Schwartz and Scott Douglas

This is the second in a series on high volume, vertical, hydraulic fracturing (fracking)

The benefits and risks of shale gas extraction by fracking in our state is a very contentious issue. Who has it right? Many folks will decide that either the industry has it right or the environmentalists have it right. Others may give up trying, feeling that neither side can be trusted to provide unbiased information.

As with most debates the “truth” can lie in the middle somewhere. Our opinions and even who we will listen to are shaped by our priorities and what we value in life -- such as having a strong desire to make an income from our land, or the desire to live in a place that is quiet and clean. While there is no way to resolve such debates, I’m hopeful that we can find areas of agreement at least about the known impacts and potential risks of fracking by consulting science-based sources that adhere to standards for evidence and peer review. Armed with this information we can then ask informed questions of policy makers in our government.

The sources consulted here on the risk side of the equation include the Governor’s Marcellus Shale Advisory Commission Report, the Pennsylvania Energy Impacts Assessment Report, and the Environmental Protection Agency (EPA). For readers interesting in hearing opposing scientific perspectives, we provide here a link to a debate published in the respected scientific journal, Nature, by experts in the field: Should fracking stop? <http://bit.ly/Jxuswt>

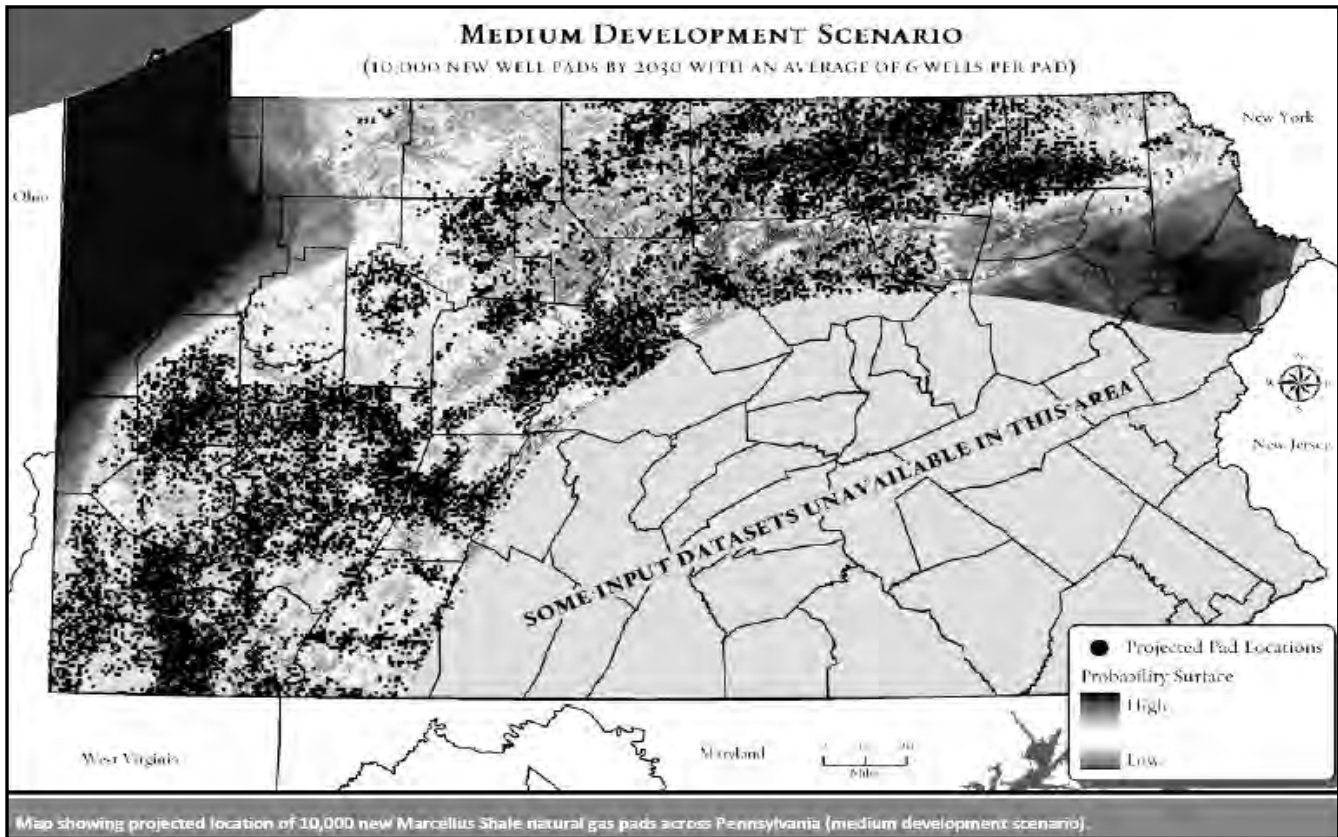
“Fracking is crucial to global economic stability; the economic benefits outweigh the environmental risks”, says Dr. Terry Engelder.

“Natural gas extracted from shale comes at too great a cost to the environment”, say Dr. Robert W. Howarth and Dr. Anthony Ingraffea.

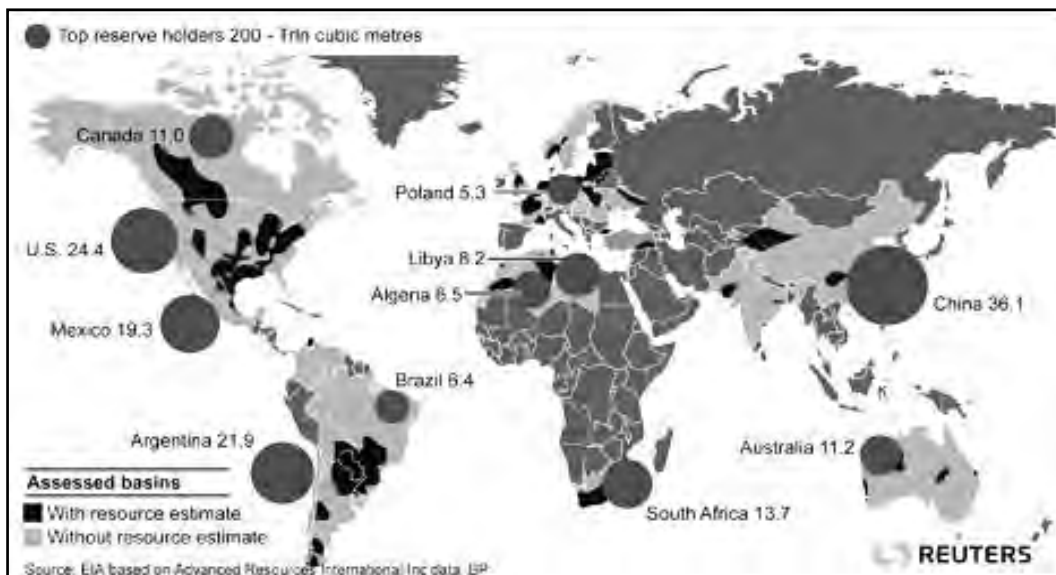
To begin to appreciate the impacts and risks of any human activity, the scale, density and duration of the goings on must be considered.

According to the Pennsylvania Energy Impacts Assessment Report: “About 60,000 new Marcellus wells are projected by 2030 in Pennsylvania with a range of 6,000 to 15,000 well pads, depending on the number of wells per pad.” The drilling operations are expected to continue and expand over the next 20 or 30 years. Presently, a very small percentage of the natural gas deposits in our state have been tapped.

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Shifting briefly to a global perspective, which is needed to estimate the impact of methane escape in the fracking process on climate change, we provide a map of shale gas reserves on our planet that are likely to be tapped rigorously as traditional sources of fossil fuels become more expensive and our economic demand for energy increases with population growth:



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There are many elements and phases of this technology to become aware of and consider as potential and known environmental risks. They are: Water acquisition, Chemical mixing, Well injection and extraction, Produced water, Wastewater treatment and disposal, and Air pollution. Each of these five phases has its own set of potential impacts and risks associated with them:

Water acquisition – is not a major challenge in our water-rich state. However, it can be a significant issue in states where the annual rainfall is low. It takes millions of gallons of water to frack each well – from 3 to 9 million gallons! Each well pad can have six or more wells – a tremendous amount of water that must be trucked to each drill pad site.

To put the water usage into perspective, the entire water usage of Springfield Township is about half a million gallons a day (5000 people @ 100 gallons/person/day).

The main environmental impacts are air emissions from the transport of the water by tanker trucks, and roadway noise, dust and erosion when new road construction is required.

Chemical mixing – the water used to “frack” a well is mixed with a complex brew of chemicals, many of which are “trade secrets” and undisclosed. These chemicals are mixed into the water at the drilling site along with sand and pumped down the well to break and hold open the fractures, allowing the gas to escape. The chemicals can be spilled during transport, mixing, or injection, or they can volatilize into the air. Although companies are pretty tightly regulated with regard to management of chemicals, accidents will happen and have already occurred.

A major controversy is over the need to disclose the trade secret recipes so that agencies charged with monitoring our streams, rivers and lakes know what chemicals to test for over time. Here the main environmental risks are to surface water: local ponds, streams and potentially to the larger rivers that are fed by these streams.

Well injection – shale gas wells may go thousands of feet into the rock before they even get to the gas-bearing formations. However, on the way there they often pass through one or more aquifers; geological formations that store fresh water that we tap for our use, or that feed springs that are the source of our rivers and streams. The wells are cased with steel and concrete to guard against loss of chemicals into, or water out, of aquifers.

Most experts agree that well water contamination emerging from frack water pumped into the bedrock is low and unlikely -- but not assured. This risk is low but can depend on the unique geology of the region, including its seismic stability.

So the key issue is how to effectively monitor the integrity of the well casings (where they intersect the aquifers) to ensure that they are doing their job, at the start of fracking and over time. According to Professor Ingraffea there is no way to avoid some contamination of an aquifer in the initial drilling process.

It takes very little pollutant to contaminate a drinking water aquifer to the point that it cannot be used, and once it is polluted it takes an enormous amount of time and money to clean it – which would require information about what is in the water.

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According to industry source, “The well’s susceptibility to functional failure relates to the experience level, standards, regulations and oversight used to design, build, operate and plug the well.” Here the density and number of operations can influence the risk to local ground water - such as when 6 or 8 wells are fracked under high pressure repeatedly over time – potentially weakening the casings of nearby wells.

In 2010, Professor Ingraffea said there was a 6 percent rate of well failures in the Pennsylvania Marcellus Play, which increased to 7.1 percent in 2011 and 8.9 percent in 2012. "The industry is doing as well as it can," Ingraffea said. "This is as good as they can do." (STARKEY debate: Ingraffea versus Engelder)

Doing the math, at a 6% functional failure rate more than 3,000 natural gas well casing are expected to fail in our state by the year 2030 – exposing the groundwater to chemically mixed and produced water.

Produced Water – The water that is injected into the well contains chemicals that can be hazardous on the way down, as we discussed above, but that is not the end of the story. Once the water gets to the gas bearing formation, often thousands of feet below even the lowest drinking water aquifers, the water comes into contact with all the same pollutants as would be expected in oil and gas deposits. These chemicals are often toxic, sometimes carcinogenic, sometimes even radioactive, and at the very least, smell bad. Some of the water returns to the surface as “blow back” or “produced water” during the drilling process. This waste is supposed to be collected and safely stored. Ideally it would be placed into a lined holding pond or tanks. While some of this water could be used again, it is often not reused. The chemicals can leak out of the container into the ground or they can volatilize into the air. Either way, lost chemicals from this water can get to us, our drinking water, our livestock, pets or wildlife, much quicker and easier at this point than at any other point in the process.

Wastewater – The wastewater held on site needs to be managed at some point. The options are many, and each has its own special concerns. The waste can be hauled to a treatment plant. Assuming that the plant is designed to handle the pollutants in the wastewater, then the treated water can be safely discharged. This is not always the case. Sometimes the waste is injected deep underground. How deep and where it ends up are the issues with this method. In some cases, the waste is simply discharged to surface water. Even more heinous than abandoning the waste on site (there are loopholes which make this a viable option for some companies); this option is the most frightening.

Given the billions of gallons of water that could be generated by fracking, surface water discharge would cause tons of toxic chemicals to be discharged over time with literally unknown and unknowable impacts to our precious water resources.

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Back to the Past

By: Lois and David Oleksa

A column highlighting items of interest concerning the historical features of the Watershed.

The flooding we've experienced along Cooks Creek during the past several years has been severe. However, it's interesting to note that in the 19th and early 20th centuries the people who made this area their home had similar problems. The following article pulled from archives describes one of the floods of yesteryear.

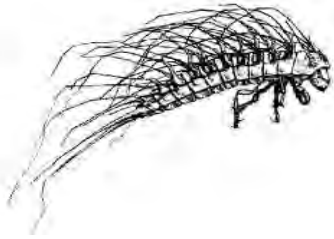
Flood In Durham Creek

From Bucks County Intelligencer—October 10, 1877

The disastrous effect of the late floods caused by the heavy rain of last Thursday (October 4, 1877) is probably greater in this section than any part of the county. The Durham Creek was higher than has been known in many years, and the destruction of roads, bridges, and the canal is very heavy, especially at the Durham Iron Works, where the company's bridge was swept away and the connecting pipes between the engine house and the shops were broken. From the furnace to the mouth of the creek, a distance of about 300 yards, the destruction is fearful. The banks and bed of the creek are strewn with pig iron and castings of all descriptions; also the wreck of the county bridge on the Easton road, lately a solid-looking old (covered) wooden structure, which has withstood the storms and floods of over fifty years, having been built in 1824.

About fifty feet below the County bridge, and right at the mouth of the creek stood the canal aqueduct; its apparent solid abutments are almost entirely washed away, and the wooden structure carried probably 300 feet from its foundation out into the river, where it rests high and dry upon a bar formed by material washed out of the creek. From the upper gates of the lock to a distance of 300 feet, the canal is washed in some places twenty feet below the bottom. Just above the aqueduct was the iron company's railroad bridge, which is also washed away, and a portion of their railroad is undermined. They will be unable to use their ferry until this bridge and track are rebuilt.

The canal company is about to put in a coffer-dam above where the aqueduct was, so as to put water in the levels from there to Easton, that portion of the canal being all right, and thus enable the Durham Iron works to get in their winter supply of coal.



13th Annual
Mini Monster Mayhem

Join us as we celebrate water, watersheds, and the amazing creatures which crawl in, on and under Cooks Creek. Our own Scott Douglas presents a fun-filled, kid-friendly program featuring dinosaurs, comets, a mountain of mud, gummy worms, a toilet...and monsters! Come and spend the morning romping with us in the pristine waters of the Creek. Fun for kids of all ages.

9:30am – 12:00 noon, Saturday June 15, 2013

Rain date Sunday the 16th.

At the Douglas', 3450 Rt. 212, Springtown

This event is free and open to the public

Bring your water shoes (or other suitable footgear), we will be walking in the creek.

Children under 12 must be accompanied by an adult throughout the event.

RSVP by June 13, (610) 346-1604



Children's Backyard: Dandelions

By: Lois Oleksa

Are you allowed to pick flowers from your mother's prized garden? I bet she'll let you pick ALL the yellow dandelion flowers! Gardeners and lawn lovers tend to curse the cheery yellow flowers. But, the cheery dandelion flower signals that spring is here.

Originating from Europe, the dandelion was brought here to provide food for the imported honeybees. The dandelion flower provides nectar and pollen early in the season and the bees love them. Dandelions

today grow over the whole world; they have become naturalized throughout the United States. They are well adapted to "disturbed habitats", such as lawns and sunny places. Historically, the dandelion was prized for its herbal properties. Its scientific name is *Taraxacum officinale*, meaning a plant with medicinal properties. Though it was appreciated in the past, today most consider it a weed and an extremely invasive alien species in North America.



Dandelion in all its glory!



Dandelion growing in the crack of the sidewalk.

Dandelions are hard to get rid of; their tap root just breaks off if you try to pull them out. Unless you remove the tap-root completely, the dandelion comes back. Roots of the dandelion have been roasted and ground into a caffeine-free coffee.

Leaves of the dandelion are tasty. Eat them in a salad before the flowers appear in the spring season or in late fall. While flowering, the leaves are bitter, but some people enjoy the bitter greens while others boil the greens in two changes of water. This gets rid of the bitterness, but also the vitamins. The leaves are what give the dandelion its name. The long, lance-shaped leaves are deeply toothed. "Dent-de-lion" means lion's tooth in Old French.

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Take a look at the leaves and see the lion's teeth.

Dandelion flowers are also edible. Take off the bitter green sepals at the base of the flower, add the flowers to salads, sauté them, dip them in batter and fry them into fritters or steam them with other vegetables. Some people make dandelion wine from the flowers; here's a recipe for dandelion syrup that you can put on pancakes. (See Activity: Dandelion Syrup).

Dandelion flowers are composite flowers. Composite flowers are really hundreds of individual flowers clustered together to look like just one flower. In the sunflower, also a composite flower, there are disk flowers and ray flowers (the petals). However, in the dandelion, only ray flowers exist. The dandelion flower has hundreds of tiny ray flowers. Other flower heads composed of only ray flowers are chicory, endive, and wild lettuce. A third type of composite flower head has only disk flowers; such as thistles and burdock.

Dandelion flowers are sensitive to the sun; they open in the morning and close in the evening. You can trick them into thinking it is night and see if the flowers close up. Take a flower pot and cover the flowers; see the flowers close. Take the pot off and watch them open again. Check out the flowers on a cloudy; are they closed or open?

Dandelion flowers grow on hollow stalks. Stalks can reach heights of two feet. The stalks are filled with a milky juice, latex. During World War II this latex was used for tires

when the latex from rubber plants was scarce. However, the latex from dandelions polymerizes (turns gummy) very quickly. Today the rubber plants are facing a fungus infection and so scientists at the Fraunhofer Institute have found the enzyme responsible for latex hardening and have turned it off. These altered dandelion plants now produce 400% more latex. Will this lead to the latex of the future?

The dandelion flower heads change into seed heads sometimes overnight. The seeds are tiny parachutes that can spread in the wind. Have you picked a dandelion seed head and blew away the seeds while making a wish? One seed head contains from 100-300 flower seeds. No wonder there's so many dandelions throughout the world!



Dandelion Puffballs-One seed head can contain

100 to 300 seeds

Children's Backyard Activity 1: Dandelion Syrup

1. Collect 250 dandelion flowers, 1 lemon, 4 cups water, and 2 pounds of organic cane sugar.
2. Put the flowers in 4 cups water, bring to a boil, cover, and simmer for 1 hour. Let cool and place in frig overnight letting the flowers steep in the water.
3. The following day: strain the tops out. Mix the water with 2 pounds sugar and 1 freshly squeezed lemon. Simmer for 2 hours. Take the syrup off the heat and allow to cool. It will thicken and be ready to pour over those pancakes or waffles.



Children's Backyard Activity 2: Dandelion Bouquet and Dandelion Octopus

1. Pick dandelion flowers with long thick stems.
2. Pop the flowers off leaving a section of the stem attached. Take a look through the hollow stem.
3. Gently start to pull down/rip the hollow stem making some sections thick and others thin. *(Fig. 1)*
4. Put the stems in a tub of water and watch them curl, coil, and spiral. *(Fig. 2)*

This is your dandelion flower stem bouquet. *(Fig. 3)*

5. Remember the popped off heads? Take them and curl the bottoms of the stems just as you did before, and there's your octopus with its head and legs *(Fig. 4)*.

Children's Backyard Activity 3: Dandelion Flower Crown

1. Collect a bunch of flowers with their stems attached.
2. Use your fingernail to split a hole in the stem of a dandelion. Make the hole just large enough to thread another stem through it. Add dandelions until your dandelion flower chain is long enough to connect the ends together for a crown, or maybe a necklace, or bracelet. *(Fig. 5, 6, 7)*

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Fig.1: Ripping the dandelion stem to make a curly bouquet.



Fig.2: Ripped stems in a tub of water. Watch them curl!



Fig.3: Bouquet of curly dandelion stems in a vase.



(Fig. 4: Dandelion octopus)



Fig. 5: Slit the stem with your fingernail and pull the next stem through the slit.

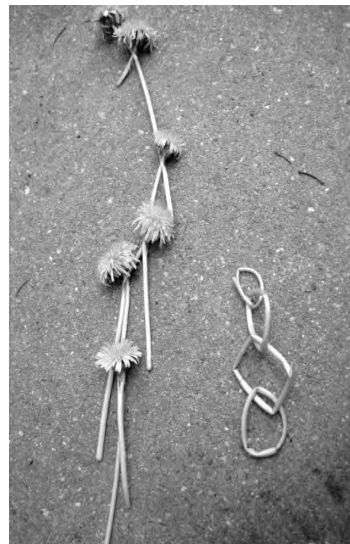
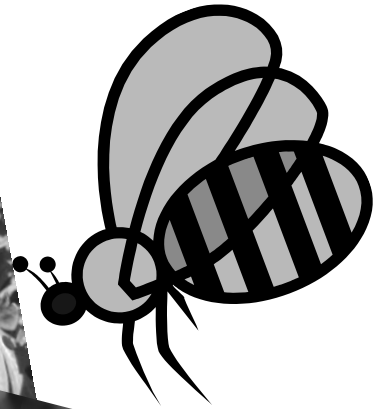


Fig 6: Two chains. Can you figure out how to make both designs?



Fig 7: Dandelion necklace on an animal friend! Goats love to eat dandelions!

Spring Flowers in All Their Glory!



Spring Flowers (From top to bottom)

Pg.1: Dutchman's Britches, Spring Beauty, Shad Bush Flower

Pg. 2: Trout Lily, Trout Lily, Wild Violet *Photos by: Siobhan Royack*

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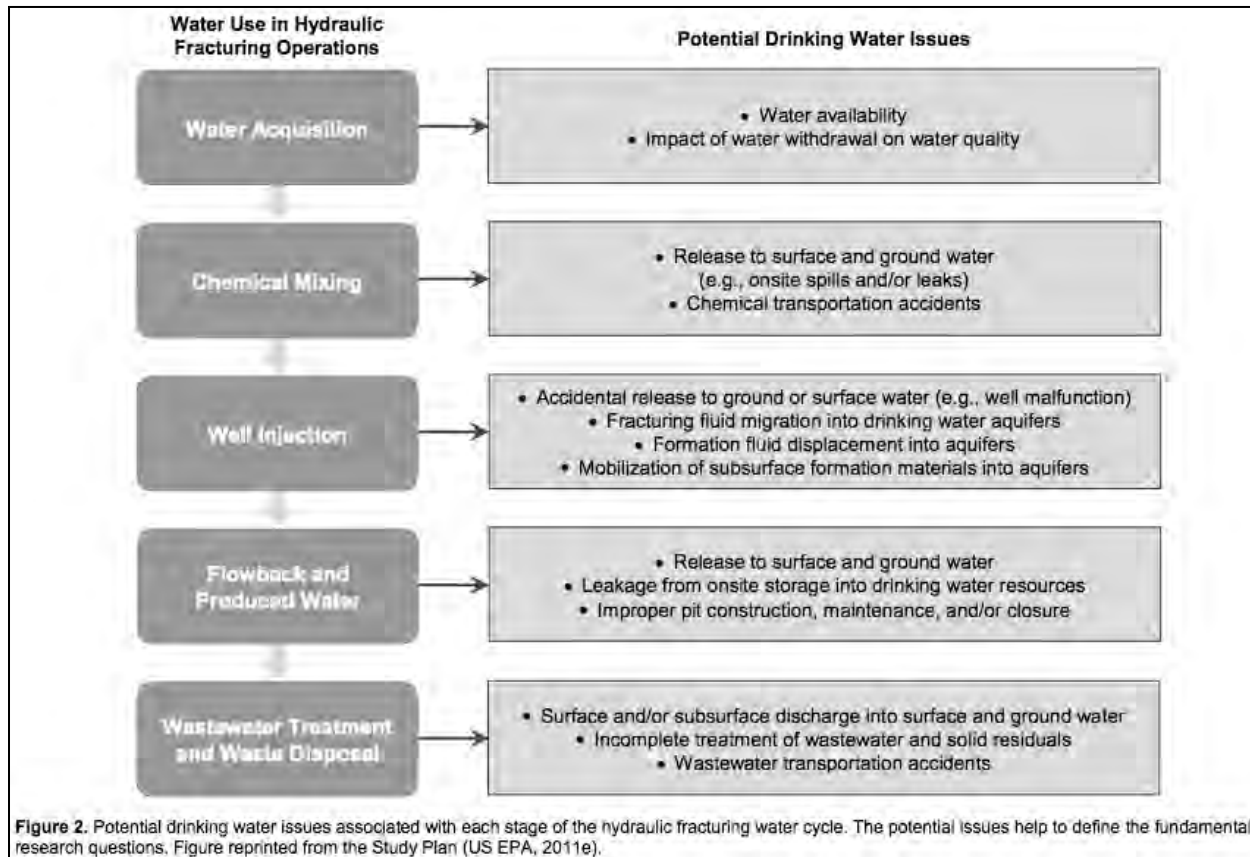
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Get out and enjoy the season!

(Continued from page 11, Fracking)

EPA illustration: Water Use in Hydraulic Fracturing – Potential Drinking Water Issues



Unfortunately, that is only one set of potential impacts; the one's to public health. There are considerable environmental impacts as well. And these are even less speculative, since we can actually see them happening all over Pennsylvania. I'm going to list just a few here.

Clearing of land for platforms and roads – Anytime that land is cleared, there are serious environmental impacts. And unfortunately the drillers don't just put down their equipment with skyhooks either – they need roads to get to the sites. These roads and clearings increase stormwater runoff. Because the roads are unimproved in most cases, the amount of sedimentation into surface water from erosion is significant. The clearing also fragments forest habitats and introduces invasive plants and animals. Pennsylvania allows drilling to occur in our parks and gamelands, in flagrant disregard to the associated impacts in lands supposedly held in public trust.

“According to recent estimates, by 2030, a range of between 38,000 to 90,000 acres of forest cover could be cleared by new Marcellus gas development in the state. Such clearings would create new forest edges where the risk of predation, changes in light and humidity levels, and expanded presence of invasive species could threaten forest interior species in an additional 91,000 to 220,000 forest acres adjacent to Marcellus development.” (Governor's Marcellus Shale Advisory Commission Report)

Loss of surface water baseflow – Both the use of large volumes of water as well as the increase in stormwater runoff contribute to serious impacts to streams and rivers. Not

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only do we reduce the baseflow, but this reduction results in a decrease in water quality and an increase in average temperature. Both of these result in loss of biodiversity and resilience of the aquatic community to stress.

Traffic and infrastructure wear and tear – Ask anyone who lives in the drilling regions and they will tell you that the number of trucks is astounding. Since much of the drilling occurs in lightly populated areas, the transportation infrastructure is woefully inadequate for the challenge. Even though some gas companies are paying to improve and repair roads, the long term impacts are unknown. Certainly the cost of maintenance of the roads will be higher after the trucks leave than before they came. And while they are around, the reduction in quality of life is shared by everyone, whether they share in the prosperity or not.

Noise and Light pollution – Drilling in PA has been a 24 hour/7day a week event. That means that the noise of the drills, trucks and workers continues unabated at all hours. Towns have been prevented from enacting the most reasonable of zoning controls on drilling, despite the fact that they have regulated all other types of business. The same goes for light at industrial levels and in all areas, regardless of how close they are to residences. Noise and light pollution are not only a quality of life issue; they severely impact wildlife as well, from game animals to songbirds.

Pipelines – One of the issues which has yet to be discussed much is the fact that the gas will need to get to market cheaply and quickly. The most efficient way to do this is by pipeline. For safety reasons, gas pipelines are always buried. So more miles of forest must be cleared, streams crossed and habitat ruined to make sure that the gas can get to market. To add insult to injury; much of the gas will be compressed or liquefied and sent overseas to power factories in China and Malaysia.

Finally, there is little controversy regarding the type and amount of pollutants released into the air during the drilling, fracking and transportation operations. These readily measurable effects are significant and are perhaps the most pressing immediate health concern for residents who live in the regions.

Air emissions and climate change – From the Governor’s commissioned report: “Marcellus Shale development, including drilling, gas collection and processing, pose challenges with respect to air emissions.” “Generally, pollutants of concern include nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter, hazardous air pollutants (HAP) such as benzene, and toluene, other volatile organic compounds (VOC) and particulate matter.”

“Methane, the major component of natural gas and a green-house gas pollutant, is released into the atmosphere as fugitive emissions through leaks from processing equipment and pneumatic devices.”

A recent report, based on NOAA surveillance, has confirmed Dr. Ingraffea’s alert on the amount of methane leakage during shale gas extraction. Losses of up to 9% show a need for broader data on US gas industry’s environmental impact.

Recycle!

Local Recycling Information

Durham Township Recycling Center

Location: Municipal Building, 218 Old Furnace Rd, Durham

1st Saturday of every month (2nd Saturday if 1st Saturday is on a holiday weekend)

Hours: 9:00AM – 12:00 noon

Accepting newspapers, magazines, junk mail, phone books, glass, tin, plastic, aluminum and cardboard.

Please note that this facility is available to all, not just Durham Township residents!

Contact Joe Kulick at the township building for more info. 610-346-8911

Springfield Township

Location: Township Building, 2320 Township Road

Paper Recycling Bin Available at Township Building.

A Recycling bin was recently placed here and is available to anyone. Cut down on trash and help the township earn extra money. You can drop off: Magazines, Shopping Catalogs, Phone Books, Newspapers, Office and School Papers, Mail.

Please do NOT include: Plastic, glass, metal, trash

Hours: Anytime; See website: www.springfieldbucks.org or call (610) 346-6700.

Blinderman & Son

Location: 1320 Whitaker St, Hellertown. 610-838-9221

Hours:
7:30AM – 4:00 PM, Monday – Friday

7:30 AM – 11:30AM, Saturday

Accepting cardboard and most metals

City of Bethlehem Theis/Cornfeld Recycling Center

Web site: www.bethlehem-pa.gov/recycle/services/theis_cornfeld.htm

Location: 635 Illick's Mill Rd, Bethlehem

Phone: 610-865-7082 Hours: Weekdays: 9 AM to 5 PM,
Saturday 9 AM to 4 PM, Sunday 11AM to 4 PM

Accepting glass, cans, plastics, newspapers, all books, magazines, catalogs, cardboard, mixed office paper, metals, textiles (clothing, shoes, etc.), large appliances (certified freon-free). Call or go to the web site for specifics.

Bonus!! They provide FREE on site shredding services for businesses and private individuals. If you have 4 or more boxes, call 610-865-7082 to schedule an appointment.

City of Bethlehem Compost Center

Location: 1480 Schoenersville Rd., Bethlehem

Non-Bethlehem residents are not allowed to drop off materials at the composting center but the mulch and compost is available for free to anyone if loading services are not needed. They actually produce much more than what they can distribute, so they encourage anyone to take as much as they would like! Loading services are provided for a fee of \$10/cubic yard in the spring and fall. Call 610-856-7082 for hours.



Schedules of Local Government Meetings

Springfield Township:
www.springfieldbucks.org
 610-346-6700
 2320 Township Road

Supervisors: 2nd Tuesday @ 7:30 PM
Planning Commission: 1st Wed. @ 7 PM
Supervisors/Planning Commission
 Work Session: 3rd Thurs. @ 7 PM

Environmental Advisory Council:
 2nd Thurs. @ 7:30 PM
Open Space Committee:
 1st Tuesday @ 7:30 PM
Historic Commission:
 3rd Tuesday @ 7:30 PM

Durham Township:
www.durhamtownship.org
 610-346-8911
 215 Old Furnace Road

Supervisors: 2nd Tuesday @ 7:30 PM
Planning Commission:
 1st Tues. @ 7:30 PM
EAC: 3rd Tues. @ 7:30 PM

Lower Saucon:
www.lowersaucontownship.org
 610-865-3291
 3700 Old Philadelphia Pike
Council: 1st and 3rd Wed. @ 7 PM
Planning Commission:
 3rd Thurs. @ 7 PM
EAC: 1st Tues. @ 7 PM

Williams Township:
www.williamstownship.org
 610-258-6060
 655 Cider Press Road

Supervisors: 2nd Wed. @ 7 PM
Planning Commission: 3rd Wed. @ 7 PM
Land Preservation Board:
 3rd Mon. @ 7 PM

Richland Township:
www.richlandtownship.org
 215-536-4066
 1328 California Road

Supervisors: 2nd and 4th Mon. @ 7 PM
Planning Commission: 3rd Tues. @ 7 PM
Preservation Board: 2nd Thurs. @ 7 PM

Springtown Volunteer Fire Company's : Used clothing drop-off shed

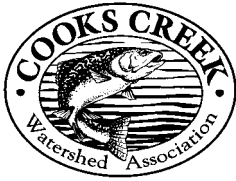
Location: 3010 Route 212, Springtown, Pa (Parking Lot)

Items Accepted: All clothing, shoes, sneakers, belts, purses, blankets, sheets, pillowcases, drapes, and stuffed toys. *Your donation will not be cut up or shredded. Please, no rags, fabric scraps, toys or household goods, these items are a hardship and expense for us to dispose of.*



Company: Turnkey Enterprises, LLC is a member of the Better Business Bureau. Our mission is to get USEABLE clothing to people who can use it, here in the U.S. and in 3rd World Countries. Secondly, it is our goal to help support local organizations.

WWW.Turnkey-Enterprises.com : For more information. *Help us keep your donation clean and dry, please put your donation in plastic bags. Thank You.*



Cooks Creek Watershed Association
 P.O. Box 45
 Springtown, PA 18081
 www.cooks creekpa.org

If you hold precious the beauty that surrounds us in the Cooks Creek Watershed area and would like to be actively involved in its preservation, then consider joining our association as a member. Reach out to your community! We would love to hear from you! Please drop us a line at **info@cooks creekpa.org**

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

Please Join Us... Cooks Creek Watershed Association-Membership Form

All of us who reside in the area enjoy the beauty of Cooks Creek.

Those of us who are fortunate enough to live here are dependent upon this watershed not only for the beauty of the creek but our wells, the wetlands, the wild-flowers and all of the beautiful landscapes in our townships.

It's up to all of us to protect this treasure. The Cooks Creek Watershed Association asks that you become a member and help in the task of protecting this special resource.

Name: _____

Other household members: _____

Address: _____

Phone: _____ E-mail: _____

Interests: (circle)

Newsletter	Website	Roadside Cleanup	Event Planning
Membership	Fundraising	Stream Studies	Wherever I'm Needed

Individual Membership Fee: \$ 15.00 per year _____

Family Membership Fee: \$ 25.00 per year _____

Student Membership Fee: \$ 10.00 per year _____

Donation: _____

Total: _____

Please detach and mail to Cooks Creek Watershed Association , (CCWA)

P.O. Box 45, Springtown, PA 18081. **THANK YOU!**

Checks can be made payable to Cooks Creek Watershed Association.

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