



Spring is just around the corner!

The Edward L. Rose Conservancy



Dear Friend,

As March arrives, I remind myself that Spring officially begins this month. The days are getting longer and I have even heard reports of Robin sightings. Little green things are starting to pop up out of the ground with the promise of beauty to come. Soon, we will all be out cleaning up yards and hiking trails from the ice, wind, and snow of the winter. I'm sure the avid birders among you will be out enjoying the spring migration.

As you get outside and enjoy your land, many of you may be thinking about what will happen to it in the future. If you have questions or concerns, give us a call. We can help. We have several tools we can employ to help you protect your land while retaining your ownership and enjoyment of it. You really can have it all!

Happy Spring!

Kris

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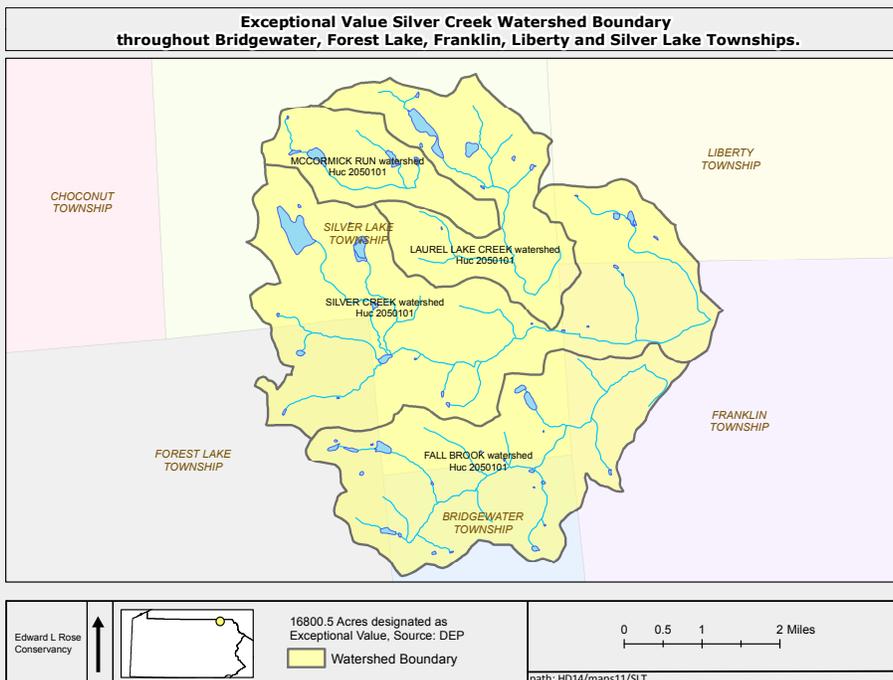
The Conservancy Submits Comments to DEP

As we reported last month, The Conservancy sent comments the Environmental Quality Bureau regarding Act 13. Here are our comments:

Dear Members of the EQB,

On behalf of the Edward L. Rose Conservancy of Susquehanna County I am submitting these remarks in response to your invitation for public comment on "Proposed Regulations for Oil and Gas Surface Activities (Amendments to 25 Pa. Code Chapter 78, Subchapter C)

The very nature of your stated purpose in requesting these comments and for amending these regulations recognizes that gas extraction is a practice with successes and failures and these failures can affect the health and safety of our citizens and detrimentally affect the environment.



From your bulletin requesting comments your goals are -

- "Ensure the protection of public health, safety, and the environment
- "Protect public resources to minimize impacts from oil and gas drilling.
- "Modernize the regulatory program to recognize advances in extraction technology.
- "Specify the acceptable containment practices to prevent spills and releases..

We, the Board of the E.L Rose Conservancy, believe that the proposed changes just scratch the surface of what needs to be added to Act 13 to address your goals as stated above. Further, because we have a special standing as owners and stewards of a conservation easement protected property in an Exceptional Value Watershed in Susquehanna County, we will use this Exceptional Value designation as background and as a reference point for our comments. Please see the attached maps showing the EV area as a whole and another showing the E. L. Rose High Point Preserve (HPP) that covers 168 acres with 2100 feet of frontage on Silver Lake, all within the Silver Creek Exceptional Value Area)

Our points will be-

1. Present a short summary of DEP and other source data that shows that even with best practices, gas extraction has predictable rate of surface and subsurface spills, contaminations and other environmental impacts.
2. Reference existing Chapter 93 requirements that protect High Quality and Exceptional Value watersheds and suggest that your proposed changes to Act 13 Chapter 78 should recognize these requirements within the law and ban and/or severely limit gas extraction activity in these special environmentally sensitive areas.
3. If we are to attain your stated goals we must have all the data available so laws and regulations are made based on science and not emotion or profit; therefore we believe Act 13 should include provisions that ban gag orders that keep contamination data out of the public domain.
4. As the science and data on spills and adverse events associated with gas extraction is collected we believe that the risk of contamination can be actuarially quantified and that all Pennsylvanians should be protected by 3rd party or state sponsored insurance so that if they are impacted by gas extraction environmental damage, they are not left to their own devices to take on multinational corporations.
5. Well head metering - with billions already produced and billions more to come out of the ground, all Pennsylvanian's deserve regulatory accountability on the quantity of our natural resources being extracted from under our feet. "Trust but Verify" as famous past President once said - it's a basic practice that must be implemented.

What do we know to be the contamination rate associated with gas extraction in Pa. from 2005 to present? (all data unless otherwise noted is from MarcellusGas.Org which is a web site that compiles DEP published information into a searchable database. Both industry and environmental groups use this site for unbiased data)

1. As of January 2014 there are there are 7982 permitted wells in PA with listed start dates and 7751 show at least one inspection.
2. 231 show no inspections.
3. 1613 wells or 20.2% show cited violations
4. Not searching for all violations but instead selecting for violation codes that reference spills or contamination or violations of clean water regulations (see attached file "violations state") there are 5894 violations cited by PADEP. Careful reading of the inspector's notes associated with some of these violations show they are anything from a few gallons spilled off a truck to thousands of gallons of contaminants lost into streams, even explosions and bubbling annuli.
5. Some of these notes specify fracking fluid spill and contamination which is especially deadly to mayfly species.
6. The Associated Press in a story written by Kevin Begos on January 5, 2014 states that Pennsylvania has confirmed at least 106 water-well contamination cases since 2005 out of more than 5000 new wells. He also states statistics showing similar water-well contaminations in at least 4 other states. In Pa. this represents a 2.12% rate of water well contamination per 5000 wells using the number stated in the story as the baseline. It represents a 1.3% rate of water well contamination if we use 7982 as the number of started wells as of January 2014.
7. What makes this percentage murky is that it is unknown how many gag orders are in place between land owners and gas companies as requirements for the land owner to receive compensation for environmental damage to their well or land. This practice makes the finding data on the true level of water well or private surface water contamination incomplete.
8. There is no single place where long and short term surface water and aquifer contamination data is being placed and made into easy access for the public to access. In Begos' article he points out that Texas has a much better system of identifying and cataloging complaints, inspections and results so a usable data base is generated. Nothing like it exists in Pa.
9. From a story from Tom Wilbur Friday, November 22, 2013:

Cabot buys second polluted residential property in Dimock 12-acre parcel on Carter Road flanked by faulty gas wells

Cabot Oil & Gas has closed a deal for a second residential property affected by chronic methane pollution in the heart of its prolific gas operations in Susquehanna County, Pennsylvania. The Texas-based company paid Michael Ely \$140,000 for the 12-acre property that includes a doublewide modular home, according to records filed in Susquehanna County Courthouse Wednesday. The property - now vacant -- borders the intersection of the south end of Carter Road with State Route 3023 in Dimock Township. The state Department of Environmental Protection has identified at least two malfunctioning gas wells operated by Cabot bordering the property, including the Gesford 3 well, several hundred yards to the north off Carter Road, and the Costello 1 well, just to the south off Route 3023. **The agency has forbidden Cabot to drill more wells in a nine-square mile area around the intersection until the company resolves problems with these and other shale gas wells that - according to the DEP inspectors - are causing methane pollution.** (it should be noted these deals were accompanied by gag orders so the results of tests done by the individuals or the gas companies are not available to be added to the public data base)

10. *Even the gas industry seems to agree that not everything is under their control and sometimes the nature of the process and geologic formations will contribute to violations. We agree that gas extraction is not a perfect process without complications and unintended consequences and that is our point. Things will happen as part of the process no matter how well done. See the attachment "Williams response to 4-18-11..." for the complete letter*

Williams' Response: Prior to the inspection on March 11, 2011, a large amount of snow (approximately 16.5 inches) and additional rainfall (approximately 3.82 inches) had fallen in the area since March 1, 2011. Approximately 3.79 inches of rain had fallen from March 6 to March 11, 2011 (1.73 inches on March 6, 0.42 inches on March 7, 1.23 inches on March 10 and 0.41 inches on March 11-data reviewed from Avoca weather station near Scranton, PA). Warmer weather caused the snow to melt rapidly, and with the addition of the rainfall, large amounts of precipitation runoff were noted not only in the area of the access road and Depue pad, but throughout Susquehanna County. While existing controls and BMPs were in place, these extreme weather conditions, "Acts of God" created unexpected and atypical conditions. Since that time, William's contractors have conducted maintenance on all ditches, roadways and disturbed areas at and adjacent to the site. It is also noted that numerous roads are located in the area that the owner of the property utilizes as "tractor trails" and roads to conduct his farming operations. These "tractor trails" and roads appear to have also contributed to the sediment runoff from this snow melt and rain event and are not within Williams' control. It should also be noted that Silver Creek was not designated as an Exceptional Value watershed at the time the APD for this pad was approved, and we were unaware of this new designation. APD's received from the Department for the Depue pad, as recently as April 1, 2011, did not indicate the area was designated an EV Watershed. We will continue to take measures to protect the environment and this EV watershed. Routine inspections and maintenance have been and will continue to be conducted at the Depue well pad and access road.

... but in this paragraph, we found it especially interesting that the gas company invoked "acts of god" and "unexpected and atypical conditions" as the reason of for the run off violation and we are sure they acted in good faith and as quickly as possible to correct the problem... but the point is over the 30 year life of a well there will be more atypical weather and unanticipated geologic, weather and man-made issues.

Exceptional Value Areas - Can evaluation of the present data and law allow DEP to issue permits for gas extraction activities in Exception Value Areas when we know there will be problems?



WATER QUALITY
ANTIDEGRADATION
IMPLEMENTATION
GUIDANCE

This is the cover of the "Water Quality Antidegradation Implementation Guidance" manual DEP is to use when reviewing permits that may impact water quality and the environment. It is specifically aimed at HQ and EV waters.

The manual says - *The basic concept of antidegradation is to promote the maintenance and protection of existing water quality for High Quality (HQ) and Exceptional Value (EV) waters, and protection of existing uses for all surface waters because it recognizes that existing water quality and uses have inherent value worthy of protection and preservation. As a required element of a state's water quality standards, the Antidegradation Program introduces levels of protection for deserving waterbodies above the basic standards.*

The law says - in **Exceptional Value Waters (EV)**

DEP is supposed to be conducting an antidegradation analysis as part of its review of well permit applications in HQ and EV watersheds. See, e.g. the settlement in *Damascus Citizens for Sustainability, Inc. et al. v. Commonwealth of Pennsylvania, Department of Environmental Protection and Newfield Appalachia, LLC*, EHB Doc. No. 2010-102-M, notice available at <http://www.pabulletin.com/secure/data/vol42/42-19/838.html>

The law and the manual also say - (Bold, red, and underline are my emphasis)

Exceptional Value Waters - This highest level of protection requires that "water quality ... be maintained and protected." To be compatible with the federal regulation, Pennsylvania's EV waters classification includes "Outstanding National Resource Waters." In addition, outstanding state, regional, and local waters are also protected at this level. Thus, the Pennsylvania antidegradation regulation provides multiple routes for these waters to qualify for EV protection. **At this highest level, no lowering of water quality is allowed. For point sources, only discharges that produce a nondegrading effluent can be allowed in EV waters.**

In other areas of the manual it says:

For EV waters and HQ waters where SEJ has not been demonstrated, protection of existing use is accomplished through maintenance of existing water quality.

"Existing use protection." This section of the regulation contains important elements regarding how DEP will act when, upon evaluation of data, it determines that a waterbody is attaining or has attained an existing use.

For all surface waters, the existing uses of the water must be protected when an activity, which may affect a surface water and which requires a DEP permit or approval, is proposed. Existing use protection also includes the protection of threatened and endangered species.

It is our position therefore that the points made in the "What do we know.." section of our comments show, without a doubt, that even with best practices and intentions, gas extraction has an inherent and quantifiable history of surface spills, surface and aquifer contamination and wells that become inviable. Also it doesn't take much to contaminate the highly sensitive environment of Exceptional Value waters as recent studies show the discharge of even the smallest amount of fracking fluid can be deadly to a population of mayflies which, in the Silver Creek Exceptional Value watershed, are a foundation food source for the biosphere present there. (below is a summary statement from a study on the effects of fracking water on mayflies that supports the statement above - the study is 42 pages long and available upon request).....results of two acute toxicity test reports prepared in 2012 by the American Aquatic Testing, Inc. for the Delaware River Basin Commission. These reports show that exposure to produced water in concentrations near 1% will significantly affect mayflies in the short term. In the long term (over the course of a 20-30 day mayfly life cycle), it's even lower: less than 0.25%.

- Half the mayflies across all three species died after 20-30 day exposures to concentrations of less than 0.5% produced water.
- Among the mayflies that survived to reach the adult stage, development time slowed, indicating they were stressed.
- Reproduction rate was significantly reduced in two of three species and somewhat reduced in the third, mostly because mortality increased and development time slowed.
- The water flea was less sensitive than mayflies to produced water, but the fathead minnow was more sensitive than mayflies.
- The produced water was more toxic to mayflies in soft waters (Dyberry Creek) than in moderately hard waters (White Clay Creek).

Taking this point one step further, the laws regarding Exceptional Value waters clearly state that **"At this highest level, no lowering of water quality is allowed."**

Therefore it seems impossible to us that DEP should be allowed to permit an activity to proceed in an EV area when that activity has a documented rate of contamination, however small, when all regulations, as well as the spirit of the law say it must ... "promote the maintenance and protection of existing water quality for High Quality (HQ) and Exceptional Value (EV) waters, and protection of existing uses for all surface waters because it recognizes that existing water quality and uses have inherent value worthy of protection and preservation"

We do recognize the SEJ Chapter in the antidegradation manual and its original purpose to be used in consideration of the placement of sewage treatment plants. (Social and Economic Justification for allowing an activity that lowers the existing standards in a HQ waters)

EV waters represent less than 4% of the waters in Pa. and they do not represent a large area of exclusion or economic loss to gas industry interests. While a sewage treatment plant has to be sited to serve an in place population, there is no urgent or economic need to extract gas from under every square inch of Pa. since as stated by the gas industry itself, we are sitting on a lifetime of natural gas. Your new proposed regulations are important to protect all of Pennsylvania and recognize the need to continue to work the rules to reduce the known risks associated with gas extraction. Exceptional Value Waters are a special part of our heritage and deserve the highest protection. The law does not allow for risk or percentages of contamination when it comes to Exceptional Value waters and therefore they should not be exposed to any industrial practices that have documented rates of spills and contamination. These waters are irreplaceable, and there is no social or economic reason to expose them to gas extraction, which could change them for generations to come.

Ban gag orders that remove the data on environmental contaminations of any kind from the public domain.

To evaluate the real impact of gas extraction in Pennsylvania we must have accurate and complete data. We understand that it is common practice for participants in legal actions to sign gag orders in order to get compensation paid and avoid legal action in the courts, but in the case of environmental cases that affect all of us, the data/science surrounding the case must stay in the public domain. If this practice is not changed we can't really evaluate the impact an action has on our environment or the benefit a change in best practices or laws as you propose is really having on our communities. Look at the data we presented earlier on water-well contaminations...consider that complete knowledge on the frequency of that devastating occurrence is not really known due to gag orders.

Cradle-to-Grave Financial Responsibility and Third Party Insurance:

As the data presented shows, and even industry will admit, gas extraction comes with risks. Accidents will happen. Just as drivers are required to have insurance because driving is a risky endeavor where you could injure yourself or your neighbor, so too should every well developer. If natural gas extraction using hydraulic fracturing is as safe as the industry claims, then the premiums should be as insignificant as the risk potential it represents. Yet while the public as individuals and as communities are now being forced to absorb these risks; not all share in the profits where they would be made whole in the case of a contamination.

Requiring accurate and complete data, with no gag orders hiding incidents will illuminate the real risks as will complete, frequent and thorough DEP inspections. Having the complete picture will allow actuaries to calculate what the premiums should be to insure individual landowners and communities against those risks.

As an example and just using the lowest risk data we started with at the beginning, if the real water-well contamination rate is 1.3% that may seem very manageable unless of course you are in the 1.3% and your water supply is lost along with the value of your home. Also consider that 1.3% of the 100,000 - 300,000 wells proposed for Pennsylvania would mean 1300 to 3900 wells would cause water-well contamination as gas extraction expands over the years.

With the amount of resources below our feet we shouldn't be playing Russian roulette with our residents' financial and physical well-being, forcing them to fend for themselves against multinational corporations. We all share at different levels in the economic benefits of gas extraction and we should all be insured against the known risks as well.

Therefore, every application for a well should be accompanied by a third party insurance policy or premium paid into a state insurance fund in an amount sufficient to restore the environment and compensate both the State and every citizen directly harmed by any event associated with the drilling and fracking of the well and the disposal of its byproducts. We require bonding and insurance for all types of industrial activities, gas extraction should be no different.

Metered Wellheads; Consider that there has been over 6.6 billion Mcf of natural gas **self-reported** to have been produced at the well head to date in Pennsylvania using the DEP data compiled by MarcellusGas.Org. At a well head price of \$3.35 per Mcf that is over 22 billion dollars and at residential prices of \$16.15 per Mcf over 107 billion dollars at the retail endpoint.

How can this be an unconfirmed self-reported number when it is a State resource?

There can be no reliable regulation, royalty compensation, or taxation without state controlled meters on every wellhead. Just as we have meters for natural gas that we use in our homes we deserve the same information from the gas industry. This finite domestic resource should be measured by government calibrated metering as a way to assure clarity and accuracy for those citizens receiving royalties, those communities receiving impact dollars and the state who should start charging an extraction tax.

Thank you for your service on the EQB.

Respectfully submitted,

*Anthony Palombaro
Co-chair of the Conservation Committee of the E.L. Rose Conservancy*

Wild Things In Your Woodland



The spotted salamander (Ambystoma maculatum) is large and stout, with a broad, blunt head. It is easy to recognize by the round yellow spots on its back, arranged in two irregular rows running down the length of its black body. There can be as many as 50 spots, and these usually extend from the head to the tip of the tail. The belly tends to be a slate-gray color with gray flecks along the sides. Adults generally measure from 4 - 7 inches and can be as long as 10 inches. Males typically reach maturity when they are 2 to 3 years old, whereas females usually take 1 to 2 years longer until they breed. A spotted salamander can live for more than 20 years!

The aquatic larvae of spotted salamanders are dull green with white or light bellies, and generally lack any particular markings.

The spotted salamander is relatively common and widespread in New York State. Spotted salamanders are most noticeable in the early spring for a short period of time when they congregate in large numbers to breed. During this explosive breeding period, which usually occurs in March or early April, spotted salamanders may be seen at night making mass migrations toward nearby pools and ponds. The breeding migration generally is triggered by the first warm, steady spring rains, even if there is snow remaining on the ground. The males, who often arrive first, begin swimming about in a highly active state that becomes nearly a frenzy when females arrive in the pond to mate.

During courtship and mating, adult male spotted salamanders deposit gelatinous white sperm packets on sticks or on the bottom of the pond. These packets are very easy to spot and serve as the first clue that spotted salamanders are present in a pool or pond. A female will swim over the packet and take up the sperm into her cloaca. Within one to a few days, the female lays eggs in gelatinous masses of usually 100 to 200 eggs, attaching the egg clusters to aquatic vegetation or sticks. Eggs usually take from 30 to 50 days to hatch, depending on the temperature of the water. The new hatchling starts out as an elongate tadpole, with external gills near the neck region, and short buds in place of front limbs. As the tadpole develops, toes form on the front feet, rear legs sprout near the base of the tail, and it ultimately loses its gills and tail fin, all in preparation for life on land.

Temperature, water level, and food availability combine to influence the length of the tadpole stage. The minimum time it takes for a spotted salamander to metamorphose into its terrestrial form is two months; usually newly transformed animals begin leaving the water in late summer and early fall. In the water, the larvae eat small crustaceans, mollusks, and insect larvae. On land, spotted salamanders eat beetles, earthworms, snails, slugs, insects, and spiders. Once transformed, they will remain on land for the rest of their lives, except briefly during spring breeding periods.

While congregated together in their breeding pools, spotted salamanders can be seen readily, even by a casual observer. During the rest of the year, however, the spotted salamander is largely fossorial, retreating to underground burrows. In moist environments or damp weather, individuals occasionally can be encountered under logs, stones, or boards during the day, or out foraging at night. In winter, they hibernate underground in burrows sometimes more than three feet deep.

The spotted salamander is an important component in both aquatic and terrestrial communities. Eggs and larvae provide food for a wide variety of aquatic animals, and predatory fish, birds, snakes, and turtles eat adults. Because of their complex habitat requirements, spotted salamanders are sensitive to the loss of both wooded and aquatic habitats. Furthermore, their tendency to migrate between these habitats during the breeding season makes them highly vulnerable to mass mortality. Cars crush a substantial numbers of adults each spring, on roads that separate upland sites from breeding ponds.

Spotted salamanders may move more than 1/2 mile from bodies of water where they breed, but will return to the same pond to breed year after year, often using the same path each year to travel from upland to aquatic sites. To provide habitat for spotted salamanders, woodland owners can enhance and protect both their aquatic breeding sites and the surrounding woods. Shallow woodland pools that dry up during late summer or fall (and do not support predatory fish) provide particularly valuable breeding habitat. Protecting these and other breeding sites from pollution (chemicals, sediments from erosion) and disturbance is essential for these animals. By marking the boundaries of breeding pools during the wet season, landowners can help prevent disturbances within the boundaries of the pools during drier times.

In surrounding woodlands, maintaining a mostly closed forest canopy (> 75 percent within 100 feet, and > 50 percent within 400 feet of the pool or pond) will provide optimum habitat for the spotted salamander and many other amphibians. A closed canopy shades the forest floor, keeping soils moist and leaf litter abundant. Coarse woody debris (logs, tree tops, etc.) can also be left on, or added to, the forest floor to provide safe havens for the spotted salamander throughout much of the year.

Maintaining minimal disturbance between breeding pools and adjacent woodlands allows spotted salamanders to move freely between the two. Disturbances such as road construction, skid trails, or large ruts can create barriers to travel if they occur close to breeding pools and ponds. Locating skid trails away from (400 feet) breeding pools, and harvesting timber when the ground is either frozen or completely dry, provides extra consideration for the spotted salamander.

Kristi Sullivan, Cornell Dept. of Natural Resources

Portions of this article were adapted from Stephen J. Morreale's Spotted Salamander Species Account in "Hands-On Herpetology: Exploring Ecology and Conservation" by R. L. Schneider, M. E. Krasny, and S. J. Morreale.

For more information on timber harvesting guidelines for vernal pool animals, ordering information for *Forestry Habitat Management Guidelines for Vernal Pool Wildlife* can be found at:

<http://www.umaine.edu/vernalpools/PDFs/Forestry%20Habitat%20Management%20Guidelines%20for%20Vernal%20Pool%20Wildl.pdf>

Basket Weaving Class Offered

Join us on May 3rd to weave your own Adirondack basket!

Charlie Ahearn, an expert basket weaver, has kindly offered to teach us how to weave a beautiful Adirondack style basket. These baskets are so useful and versatile as they can be worn like a backpack. You will learn all the techniques you need AS you weave your own basket. The only cost for this class is the cost of materials. Space is limited so that every participant can receive individual assistance. Please call the office soon to reserve your spot. We have already had great interest so the class is likely to fill up quickly!

Don't forget about our other classes this spring!

We are offering classes on conservation easements, amphibians, and invasive species management through the Montrose Area Adult School. You can contact them directly to register or call us for more information.

Our office phone number is 570-278-9500

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