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## EXTRA, EXTRA, READ ALL ABOUT IT

The Friends of The Shenandoah River is very excited to announce a new partnership with Shenandoah University. Under the leadership of President Davis the University has re-formed the Blue Ridge Institute for Environmental Studies and will be renovating a classroom into a new laboratory for shared use by the Institute and the Friends.

We thank the University, the Virginia Environmental Endowment and several anonymous funders for their foresight in recognizing the need for an expanded laboratory facility for the Friends water quality monitoring activity in the Shenandoah Valley and at the same time the opportunity for further integration of this program with the educational program of the Blue Ridge Institute for Environmental Studies.

We have been working diligently with Dr. Davis to formalize the related Memorandum of Understanding. There are numerous details to work out, but we believe that Dr. Woodward Bousquet, the Environmental Studies Department Chief, and George L. Ohrstrom II, the President of the Friends, will be able to form the basis for a lasting and fruitful working relationship. Discussions are really going well, and we think the new partnership will work nicely for both organizations. Construction will begin shortly on the new space.

So, if any of you see Dr. Davis in your travels please give him a big grin and huge Thank You.

Ed. Note: FOSR has closed its Front Royal office to save \$ and anticipates new office space at Shenandoah University in conjunction with the new lab arrangement. Monthly Board meetings will continue at 824 John Marshall Highway in Front Royal thanks to our friends at Weichert Realty.

## FISHKILL TASK FORCE REPORT

**By Don Kain**, Water Monitoring & Assessment Mgr., DEQ Valley Regional Office,  
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**H**ere's a very short summary of the fish kill activities for spring 2008. First, we've been getting observations from a large and very active network of observers. Thank you all! This input has been extremely helpful and has resulted in the bulk of the reports on the attached spreadsheet (Ed. Note: Sorry, not enough space for the spreadsheet.) The spreadsheet has a tab for each of the last 5 years. Records were not as complete in 2004, since this was the first year we encountered problems and the problems were limited to the North Fork that year. It is interesting to note that the fish kills began early (mid-March) in 2006, but about a month later in 2007. Temperature data aren't included, but the pattern we've seen is that fish kills began in earnest once water temperatures remained above 15° C (59° F) for an extended period. Local rivers are now in that temperature range, so we are on high alert.

You will note that 2008 reports have been pretty spotty so far. Keep your fingers crossed. We have a few reports with significant numbers, but mostly we're hearing of a dead fish here and there. You'll note

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that early this week we received a report on the South Fork near Bentonville of about 30 dead sunfish and 30 dead smallmouth. Due to high water and low visibility, we've not been able to get more observations in this area.

Spring 2008 field work has been going well. Water sampling is on target, both for conventional sampling and the 10 passive samplers. Storm event sampling has also gone well, with very good coverage during the storms we've had. We've not yet had an "ideal" storm with heavy runoff and rapid increases in river flow; mostly we've had soaking rains that have continued for a couple of days.

Fish sampling has been conducted to support several projects. Pre-kill fish samples have been collected at target fish kill sites and several reference sites by DGIF. Samples have been processed for fish health studies by USGS Leetown Fish Health Lab and by researchers from Virginia Tech. Round 2 of that sampling is scheduled next week and should provide specimens that will represent conditions when kills are likely to occur.

Thanks for your help and support and keep those observations and reports coming.

*Ed. Note: the ideal heavy rains and rapid runoff arrived last week to help the studies.*

## MEETING WITH SECRETARY OF NATURAL RESOURCES

BY George Ohrstrom

**A** little over a month ago the Shenandoah Riverkeeper, Jeff Kelble, John Holmes of the Friends of the North Fork, Leon Szeptycki, a University of Virginia Law School professor, and I went to Richmond to talk over issues with the Virginia Secretary of Natural Resources, The Honorable Preston Bryant, his Deputy, Jeff Corbin, and the Director of the Virginia Department of Environmental Quality, David Paylor. We went specifically to talk about permitting issues Jeff and Leon had with DEQ. John and I were also concerned with being included on some of the Fish-Kill Task Force information.

The meeting was very productive and also quite cordial. I want to make sure that everyone knows that Mr. Paylor worked very hard to restore funding to citizen volunteer water quality monitoring groups for the next fiscal year. He was unable to get as much funding restored as he wanted, but we all owe him a large debt of gratitude for the behind the scenes work he did. He was very complimentary and knowledgeable about the work of citizen volunteer water quality monitors. He is aware of how difficult the job is without citizen monitors having to go out and replace lost State funding.

It was also very gratifying to see John Holmes and Leon Szeptycki interact with Mr. Paylor. By the end of the meeting there was a consensus that the DEQ manual needed some modernization and both Leon and John offered their expertise in helping Mr. Paylor and his staff re-write some of the more arcane aspects of the manual.

Jeff Kelble, the Riverkeeper, was also very engaged in the meeting talking about other aspects of permitting issues. There was a frank discussion regarding the Fish-Kill Task Force and the fact that both Jeff and John were not getting as much information as they were at the beginning of those meetings. They felt that they were being left out of some of the more scientific group discussions and Mr. Paylor offered to make sure that they would be included in future meetings.

All-in-all it was a very satisfactory meeting and I really want to let everyone know how responsive these government officials were to our concerns. The Secretary was very involved in these discussions and both he and his Deputy complimented both the Friends of the Shenandoah River and the Friends of the North Fork for their on-going commitment to the citizens' volunteer water quality monitoring effort. Please feel free to write a note of thanks and appreciation to Mr. Paylor (Director, Department of Environmental Quality, P. O. Box 1105, Richmond, VA 23218 or e-mail at [David.Paylor@deq.virginia.gov](mailto:David.Paylor@deq.virginia.gov)).

## WHO WE ARE

This column is an introduction to our readers of the backgrounds of FOSR monitors, staff and Officers/Directors. This issue honors and thanks Friends of the North Fork monitors led by Roger Bolland.

**Lee Dieter.** I've monitored four sites on Stony Creek for the last five years including the Georges Chicken S.T.P. I graduated from Penn State with an associates degree in Fine Turf Management (Agronomy). After 37 years at Washington Golf and Country Club, an Audubon cooperative sanctuary, a program that I started at the Club before my retirement, my wife Rita and I have lived on our land at Liberty Furnace where we monitor 4,500 feet of Stony Creek running through our property.

**Bill and Ginny King.** We moved to Quail by the Creek Farm in 2005. and have 3/4's of a mile of Smith Creek. Since our farm is devoted to wildlife habitat we seek to do whatever we can to help this wonderful stream which empties into the North Fork. Even though degraded, it is still beautiful, being a spring-fed stream with smallmouth and largemouth bass. It is a habitat for all manner of wading birds, waterfowl, and a wide range of other wildlife. I write an outdoor/hunting and fishing column for our local newspaper and sometimes look to Smith Creek to give me inspiration for a column. Hopefully, one day, our efforts and those of the other monitors will pay off.

**Roger A. Bolland.** I am a retired high school chemistry teacher. My wife Deb and I moved to our retirement home on the North Fork in 2005. We enjoy the wildlife and the wonderful valley scenery. I love to spend hours fishing behind my house. I want my grandkids and their kids to be able to swim, fish and canoe in the North Fork. Growing up in western Pennsylvania, I saw the effects of industrial pollution on the health of the Ohio River. When I came to the DC area in the '60s, the Potomac River was a cesspool. I read about the Avtex effects on the Shenandoah River. Today, the Potomac and the Ohio are recovering and the Shenandoah is in better health in some ways, but new dangers threaten her waters. Monitoring is one way I can help provide the data necessary to educate the public and government officials about the precarious health of our waterways and the need to take action to improve their condition.

**Skylar Wolf (Age 13.)** I have lived in Shenandoah County for 13 years and have always been interested in the Shenandoah River. Our property is just above the North Fork where for many years I have fished and boated. Last summer I got a kayak and have been on the river a lot more. I've noticed over the years a dramatic increase in dead fish. It's very hard to catch a large fish now and I've wondered why. I decided that I should try to do something to help the river so last year I volunteered to become a monitor with Friends of the North Fork.

**Margaret Nelson.** When my husband and I bought land on the North Fork of the river for an eventual retirement home, it was with the idea that our sons would always be glad to come visit and fish. Now my grandchildren are learning to love the river with its fish and eagles and bluebells. I never tire of watching the river and the visiting wildlife during the changing seasons. My monitoring activities are a small way to help the river in hopes that we can continue to enjoy it for years to come.

**Ellen Nash & Jonathan Jay.** My wife and I got tangled up in the health of the Shenandoah through kayaking. Several years ago we joined a kayaking group for seniors offered by the Rockingham County Recreation Department. We had never kayaked before and we were hooked instantly. Just being out on the river is wonderful, and we truly believe that if more people would paddle on the river that the FSNF would have many converts to the cause. We joined the monitoring brigade because this beautiful river should stay beautiful and clean.

**Leslie Mitchell-Watson.** I've been a volunteer water monitor for Friends of the North Fork for 10 years. I began working part-time as a program and office manager for Friends in 2003 and now serve as executive director. Much of my time is spent inside. Monitoring allows me to get out on the river on a regular basis to remind myself of the river's beauty and serenity and of the thriving place the river can continue to be if we all take responsibility for its health. After 10 years, gathering my samples twice a month has become a significant part of my life, I hope a part of a larger effort that can help Friends of the North Fork and Friends of the Shenandoah River make an impact on improving river health in the future.

**Darnice Pettigrew.** I moved to Timberville in 1997 from Portsmouth, VA when I purchased the North Fork Veterinary Hospital. I was active in Portsmouth with VA Clean Waterways as site captain along the James River. When Sheaffer built the waste water treatment facility in Timberville, I grew very concerned about our local river and wells. The facility irrigates directly next to my clinic. When Leslie Mitchell-Watson talked to our local Ruritan group, I immediately signed up to monitor the river downstream from the facility. By joining with the Friends of the North Fork, I have more people who share my concerns about this facility. I am active in wildlife conservation, working with sea turtles, dolphins, whales, etc., in both the US, Belize, Trinidad and Baja Mexico. I have been called one of those "tree-huggers" but I am proud to be able to do something to help our environment.

**Mary Gessner.** My husband and I bought a weekend place on the North Fork in 1991. We were immediately hooked on the river and knew we wanted to live here full-time after retirement. After settling here in 2002, I became more active in the Friends of the North Fork and became a water monitor. Having grown up in northern Ohio, I knew too well what can happen to a river that is taken for granted. One of my favorite things is kayaking our stretch of the river outside of Woodstock, sometimes fishing, but more often than not, just enjoying the beauty and serenity of the river, the surrounding landscape and the fish, birds and mammals that also call the river "home". I hope that my monitoring efforts will somehow contribute toward ensuring that future generations will be able to enjoy the river as much as I have.

**Kenneth Owens.** My wife and I came to the Woodstock area from Richmond in 1987. We ran a Podiatry practice here and had a house built overlooking the North Fork. Garland Hudgins was a patient of mine. He introduced me to the Friends of the North Fork which he helped to found years previously. I soon got involved with chemical analysis of river and well samples being at onetime a research biochemist. It made me feel useful! Becoming a regular monitor was a natural extension to all this. I never stopped.

# A National Reconnaissance for Pharmaceuticals and Other Organic Wastewater Contaminants in the United States — II) Untreated Drinking Water Sources—May 2008—USGS

Michael J. Focazio, Dana W. Kolpin<sup>b</sup>, Kimberlee K. Barnes<sup>b</sup>, Edward T. Furlong<sup>c</sup>, Michael T. Meyer<sup>d</sup>, Steven D. Zaugg<sup>e</sup>, Larry B. Barber<sup>e</sup> and Michael E. Thurman<sup>d</sup>

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## Abstract

**N**umerous studies have shown that a variety of manufactured organic compounds such as pharmaceuticals, steroids, surfactants, flame retardants, fragrances, plasticizers and other chemicals often associated with wastewaters have been detected in the vicinity of municipal wastewater discharges and livestock agricultural facilities. To provide new data and insights about the environmental presence of some of these chemicals in untreated sources of drinking water in the United States targeted sites were sampled and analyzed for 100 analytes with sub-parts per billion detection capabilities. The sites included 25 ground and 49 surface-water sources of drinking water serving populations ranging from one family to over 8 million people.

Sixty-three of the 100 targeted chemicals were detected in at least one water sample. Interestingly, in spite of the low detection levels 60% of the 36 pharmaceuticals (including prescription drugs and antibiotics) analyzed were not detected in any water sample. The five most frequently detected chemicals targeted in surface water were: cholesterol (59%, natural sterol), metolachlor (53%, herbicide), cotinine (51%, nicotine metabolite),  $\beta$ -sitosterol (37%, natural plant sterol), and 1,7-dimethylxanthine (27%, caffeine metabolite); and in ground water: tetrachloroethylene (24%, solvent), carbamazepine (20%, pharmaceutical), bisphenol-A (20%, plasticizer), 1,7-dimethylxanthine (16%, caffeine metabolite), and tri (2-chloroethyl) phosphate (12%, fire retardant). A median of 4 compounds were detected per site indicating that the targeted chemicals generally occur in mixtures (commonly near detection levels) in the environment and likely originate from a variety of animal and human uses and waste sources. These data will help prioritize and determine the need, if any, for future occurrence, fate and transport, and health-effects research for subsets of these chemicals and their degradates most likely to be found in water resources used for drinking water in the United States.

Ed.Note: This abstract and an article outline can be viewed at <http://dx.doi.org/10.1016/j.scitotenv.2008.02.021>

## The Latest on the FOSR Website

Over the past several months, we have added important capabilities to the Friends of the Shenandoah River website, [www.fosr.org](http://www.fosr.org):

- You can see an updated map of all sampling sites ([www.fosr.org/maps/](http://www.fosr.org/maps/)).
- You can now graph several water quality parameters for all sites for any period of time ([www.fosr.org/water/](http://www.fosr.org/water/)).
- You can view the just-released comprehensive report on water quality for the entire Shenandoah watershed ([www.fosr.org/reports/](http://www.fosr.org/reports/)).

The Affiliations & Links page has also been updated and we plan further updates and improvements in the coming months that include highlighting of impaired streams on the map, and indications of impaired levels on the water quality graphs. We wish to thank the Pure Water Forum for providing funding for these enhancements!

## Not To Be Outdone by USGS - “A Poison Pill”

Feb 21st 2008 - BOSTON

From [The Economist](#) print edition

### **Human contraceptives are bad for fish.**

ONE thing Canada is not short of is lakes. It has so many that it can afford to set some aside to experiment on. And that is what Karen Kidd, an ecotoxicologist at the University of New Brunswick, has just done to a small lake in north-west Ontario. She has poisoned it in the name of science.

Her chosen poison was oestrogen, one of the hormones that help to control the menstrual cycle. People flush a lot of oestrogen down the toilet. Some is natural. Some is the synthetic stuff used in oral contraceptives. There is a strong suspicion that if this oestrogen is not removed during sewage treatment (some works do, some do not), it causes serious

damage to rivers and lakes. Until now, however, proof has been lacking. Dr Kidd wanted to find out if the suspicion was correct. As she told a session of the American Association for the Advancement of Science meeting in Boston, it is.

The lake's algae, bacteria and invertebrates appeared unfazed by the extra hormone which she dumped in the lake at regular intervals. Presumably, its chemistry was not similar enough to their own biochemicals for them to notice. But the population plunged in the smallest fish species, the fathead minnow. Male minnows became feminised: their sperm production was delayed and they started producing eggs. After two years of treatment, the fathead minnow population collapsed.

Other changes took longer. Pearl dace mature more slowly than minnows and can outlive them by several years. The dace therefore managed to hold out for three years before the lack of male potency brought about a population crash.

There was damage even to the lake's largest fish, its trout. Here the cause was less that boys were turning into girls than that the trout were on short rations-since the minnows had disappeared. But the upshot was the same: fewer trout, and confirmation that oestrogens are very bad news for fish, even at low concentrations.

The better news was that things quickly returned to normal once the hormone treatment stopped. Fixing sewage works to prevent them from spewing out oestrogen should therefore help fairly rapidly. Controlling the sale of contraceptive pills will not be necessary, and fishermen will once again be able to use their rods and tackle with impunity.

Ed. Note: The original work by Karen Kidd and others was published in the Proceedings of the National Academy of Science in 2007. Vol. 104, No. 21, pp 8897-8901- URL = <http://www.pnas.org/cgi/content/full/104/21/8897>. Any help in identifying sewage works that remove such chemicals will be greatly appreciated!

## Concerns over Unregulated Application and Storage of Poultry Litter

The Agricultural Stewardship Act Guidelines (Revised June 7, 2004)

**B**ob Peer, Agricultural Program Coordinator for DEQ in the Valley Regional Office, provided a paper to FOSR dated May, 14, 2008, describing concerns at DEQ over unregulated application and storage of poultry litter in the Valley. Currently the only applications of litter that are regulated are those covered under DEQ's Virginia Pollution Abatement General Permit for Poultry Waste Management. Poultry farms covered under this permit must have at least 20,000 chickens or 11,000 turkeys. Litter transported off permitted farms is not regulated.

Concern has grown since the permit regulation was enacted in 2001 with close to 80% of poultry litter currently being transferred off the regulated farms. The perception, especially in recent years with the fish kills, is that this unregulated storage and application of litter is causing water quality problems. Both DEQ and the Virginia Department of Agriculture and Consumer Services (VDACS) - through their Agricultural Stewardship Act Program - feel the current regulations are not clear in granting authority to deal with complaints on the unpermitted applications and storage of litter. Most of the situations have involved improperly stored litter, particularly large amounts of uncovered litter stored too near streams and/or in flood plains.

A first meeting on April 28, 2008, of a Technical Advisory Committee for the Transfer and Off-site Management of Poultry Litter established by the two State agencies considered two options regarding the end user of litter:

- 1) Requiring the end user of litter to be legally bound to follow an updated version of the DEQ-approved Poultry Litter Storage and Utilization Fact Sheet which is currently only a guideline. (Ed. Note: apparently requiring the end user to have a Nutrient Management Plan, now required of permitted poultry farms, is not being considered.)
- 2) Using the VDACS Agricultural Stewardship Program to enforce an updated Fact Sheet. This would require increased staffing and a modification of how VDACS determines if a complaint is "founded." Most of the complaints regarding the end use of poultry litter will probably focus on the "potential" impact of improper storage and application of poultry waste.

FOSR in its stream monitoring program does not attempt to identify immediate causes of high levels of pollutants reaching surface waters, but does provide strong evidence of the general areas of such occurrences. Those who witness the direct impact of such sources have recourse to VDACS Agricultural Stewardship Program described in the sidebar to pursue a plan of correction for such problems.

(See [www.vdacs.virginia.gov/stewardship/index.shtml](http://www.vdacs.virginia.gov/stewardship/index.shtml))

In response to increased public concerns for a clean environment, Virginia's agricultural leadership sought a way of dealing with agricultural water pollution different from the approaches used with other industries. Most manufacturing plants must obtain permits and follow strict rules of operation. The agricultural community wanted a different approach that did not rely on permits and strict operating rules, but took into account the wide variety of farming practices used in Virginia.

The ASA offers a positive approach to addressing pollution involving agricultural operations. It provides procedures by which individual agricultural producers can be alerted to areas of their operations that may be causing water pollution. Rather than regulations with strict rules governing every type of farming practice, the ASA looks at each farm individually.

The procedures created by the ASA begin with a complaint made to the Commissioner of the Virginia Department of Agriculture and Consumer Services. The Commissioner must accept complaints alleging that a specific agricultural activity is causing or will cause water pollution from sedimentation, nutrients or toxins. After the Commissioner receives a complaint and determines that it is one that must be investigated, he will ask the local soil and water conservation district if it wishes to investigate the complaint. If not, the Commissioner may conduct his own investigation.

The purpose of the investigation is to determine if the agricultural activity is causing or will cause water pollution. If not, the Commissioner will dismiss the complaint. If yes, the ASA gives the owner or operator an opportunity to correct the problem by developing a plan (best management practice) to correct or prevent the water pollution. Once the plan is developed the district reviews it and makes recommendations to the Commissioner. If the Commissioner approves the plan he will then ask the owner or operator to implement the plan within specified periods of time. If the owner or operator fails to implement the plan enforcement action will be taken under the ASA.

## Conservation Camp Invitation

**T**he TU councils in Virginia, West Virginia, and Maryland/DC sponsor a great Conservation & Fishing Camp at Graves' Mountain Lodge in Syria, VA each summer, and we'd very much appreciate FOSR's help in getting the word out to FOSR members who might know of teenagers interested in attending.

The residential camp, which will be held this summer on June 22-27, is for high school students, boys or girls, who will be in the 9th - 12th grades in September 2008. It's a great opportunity for someone who likes the outdoors, is interested in learning to fish for trout and tie flies, and would like to study entomology, stream mechanics and hydrology, and issues affecting water and air quality.

Tuition is \$550 for the week, and generous donors have created a pool of financial assistance for campers who are motivated to become conservationists but who might not be able to afford the camp. Our Winchester TU chapter has made a contribution to cover one camper's tuition, and we'd love to have a deserving student from our area attend this year.

All of the camp details, and the application form, are on our website ([www.tucamp.org/](http://www.tucamp.org/)). We've also got a short press release and photos from previous camps that I'd be happy to send to interested persons, as well as paper copies of all of the promotional materials.

Thanks in advance for your help; the camp is a great educational opportunity, and the students have a great time.

Mark Zimmerman  
 VP Education/Outreach, Virginia Council of Trout Unlimited  
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Thank You for giving generously to the 2007 Membership Appeal and for donations to FOSR through the Long Branch Walk and Picnic Event. And a huge thanks to Long Branch for hosting this fundraising event for FOSR.

Steve & Deb Bauserman  
 Charles Burwell  
 Julia and Allen Lear  
 William H. McCormick  
 Trace Noel  
 Nancy Olin  
 Boyd W. Post  
 James R. Schlesinger  
 John V. Sippers  
 Royal Oak Animal Clinic  
 Eugene and Peggy Swartz  
 Arlene & Theodore Tagashi

John Tuggle

**Early returns from Long Branch**

Lawrence Duncan  
 Richard & Eileen Marzolf  
 Bunny Benham  
 Bo Carlyle

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