



# STORMWATER steward

A Stormwater SMART publication

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at a  
glance

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## A WATER CRISIS IN FLINT

In early January, President Obama declared a state of emergency in response to the water crisis that has struck Flint, Michigan, where thousands of people have been exposed to toxic levels of lead. As a result the Federal Emergency Management Agency, more commonly known as FEMA, will be handling the disaster relief efforts to aide residents.

### Man-Made Disaster

The city of Flint switched the source of their drinking water from Lake Huron to the Flint River. The move was made in an effort to save money. The city has high rates of violence and poor infrastructure and forty percent of the city's residents live below the poverty line. That move, however, ended up harm-



Picture courtesy of the NY Times

ing the residents.

There were many problems with the new water. It was found to have levels of fecal coliform bacteria, so officials told residents to boil their water. Extra chlorine in the water caused contaminations of total trihalomethanes, which can cause liver and/or kidney problems. Following that, the water was found to contain lead.

homes had elevated levels of lead. In addition, a pediatrician announced that blood tests showed increased lead levels in some children since. Recently, over 200 children have been found with increased lead levels in their blood, which can stunt their growth.

Health experts believe the water from the Flint River is corrosive and may have been leaching lead from some of the city's old pipes. Across the city there have been many water drives where residents can get bottled water and water filters for their homes.

In September, researchers from Virginia Tech found that water from nearly 300 Flint



Picture courtesy of the NY Times

## Did you Know?

Nutrients from farms can lead to algal blooms.



Organizations like The Nature Conservancy partner with farmers to help lessen the pollution entering our water from farms.



The Clean Water Act does not allow the federal government to regulate agriculture, but the government can set water quality standards.



Leaking waste lagoons can cause contaminated groundwater.



## RUNOFF RUNDOWN: FARMERS WORK TO REDUCE NUTRIENTS

Agriculture is a major industry in the United States and it has also become one of the biggest threats to water quality in the United States. Nutrients, such as phosphorus and nitrogen, from manure and fertilizers can runoff into local creeks and rivers, which can lead to algal blooms. Erosion is also a big issue. Farmers across the country are becoming more aware of the threat that agriculture poses on our water quality. As a result, more farmers are taking the initiative to do something about it by using best management practices, such as building artificial wetlands and underground “bioreactors” to capture nutrients in a drainage system, therefore preventing them from getting into water resources. Some farmers remain skeptical and are reluctant to stray from current practices out of fear of increased costs and decreased yields. Government subsidies can help with curbing the cost for farmers to implement some of the newer, better practices.

In August of 2015, a study

conducted by the U.S. Geological Survey found higher levels of ammonia and nitrates in streams near concentrated animal feeding operations. In North Carolina, those operations are typically hog farms. While the study found elevated levels of pollution near those operations, they were still lower than what the U.S. Environmental Protection Agency, or EPA, and the state consider to be dangerous for humans.

Hog waste is typically stored in open lagoons and is then sprayed on cropland as a fertilizer. As previously mentioned this fertilizer then runs off and can lead to algal

blooms and fish kills. In addition, in the 1990s, leaking unlined waste lagoons were shown to have contaminated groundwater. In 2007, the state legislature banned construction of new lagoons and has implemented stricter rules for the way those operations store and process their waste. Experts say that it is too early to say what the state will do with the findings from the study. However, it is clear that research shows the impacts of agriculture on water quality and that there are plenty of ways for farmers to lessen the impact of pollution from their farms.



Courtesy of the News & Observer

## SEABIN

The Seabin Project is a startup that is aimed at reducing pollution in marinas, ports and yacht clubs. After raising over \$267,000 through the crowdfunding website Indiegogo, the project hopes to start manufacturing the Seabins by the end of 2016. The Seabin is still a prototype, but it uses a shore-based water pump located on a dock to draw in water. The Seabin sits on top of the water and floating debris is collected in a natural fiber bag. The project’s director said that the catch bag would need to be changed once every one to two days depending on factors such

as rainfall. Major supporters of the initiative include American surfer Laird Hamilton. The Echo newspaper and the Clean Ocean Project. For more information, visit [www.seabinproject.com](http://www.seabinproject.com).



seabinproject.com



## REFLECTING ON MY YEAR OF SERVICE



Over the last ten months, I served as an AmeriCorps member at Piedmont Triad Regional Council, where I was the Stormwater SMART Outreach Coordinator. Through this position, I provided education and outreach to people of all ages in our member communities about water

quality, pollution and stormwater. During my service term, I educated over 5,300 students at 23 schools, 7 libraries, 6 summer camps and 2 learning celebrations. I wrote 12 newsletter articles and 2 blog posts. I provided outreach at 5 community festivals and fairs. While these numbers are important data to have, I believe that my service in our member communities will have a lasting impact. In September of 2015, I planned an Environmental Field Day for 8th graders at E. Lawson Brown Middle School in partnership with the Davidson County Soil and Water Conservation District and the US Forest Service. The two day event allowed students to delve into their water unit and learn through hands-on activities. When I returned to Brown Middle in January of this year, I was surprised to find how much the students remembered from our activities, despite the fact that the event was held before the start of their water unit.

On my very first day as an AmeriCorps member, we worked with Earth Science students to conduct a local stream assessment and to



determine water quality by sampling for macroinvertebrates. I remember a group of girls who were not happy about having to get in the water and instead chose to watch from the bank. When I told them we had waders and that they could easily get in the creek without getting wet, they went out of their comfort zone. Once they were in the water and began catching the invertebrates, they didn't want to get out. It's memories and moments like this that I kept with me through my service term.



The AmeriCorps program I served through, Project GEOS (Growing Environmental Opportunities through Service), is all about reconnecting people with the outdoors and removing barriers to environmental education across the state.

I have thoroughly enjoyed getting to spend the last ten months serving my community and working alongside teachers and other professionals to educate members of the community and get them outdoors and involved in environmental education.

-Kaly Clark, Stormwater SMART Outreach Coordinator, AmeriCorps Member, 2015

## GET INVOLVED: EARTH DAY

Earth Day, April 22nd, marks the anniversary of the start of the modern environmental movement in 1970. There are several Earth Day events happening in our member communities and lots of opportunities for you to get involved!

### **Earth Day Weekend at the NC Zoo, Asheboro, 4/16-4/17**

Come to a party for the planet! Dance to African drums and learn of new ways to help care for the earth!

Davidson County  
Randolph County  
Rockingham County  
Archdale  
Asheboro  
Burlington  
Elon  
Gibsonville  
Graham  
Green Level  
Haw River  
Lexington  
Mebane  
Oak Ridge  
Summerfield  
Randleman  
Reidsville  
Thomasville  
Trinity



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## LOOK FOR STORMWATER SMART AT A EVENT NEAR YOU.

**5/6/16 — First Friday Concert Series, City of Graham**

**5/7/16 — Lexington Multicultural Festival**

**5/13/16 & 5/14/16 — Summerfield Founder's Day**

**6/3/16 & 6/4/16 — Oak Ridge Annual Ridge Fest**

**6/17/16 & 6/18/16 — North Carolina Food Truck Championship at Commerce Square in Randleman**



Stormwater SMART was created by the Piedmont Triad Regional Council (formerly Piedmont Triad Council of Governments) to help Phase II communities comply with National Pollution Discharge Elimination System (NPDES) and Jordan Lake Public Education and Outreach requirements. Stormwater SMART is supported through dues paid by member governments.



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REGIONAL COUNCIL