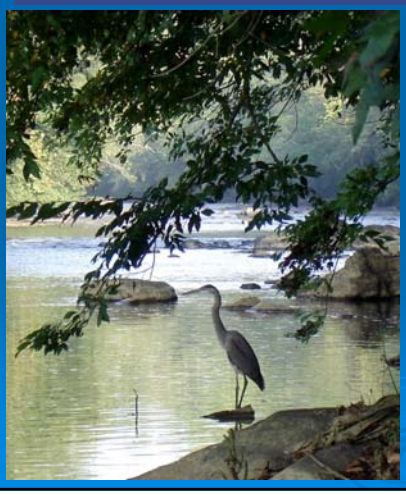
Haw River Assembly

Defending the river since 1982.

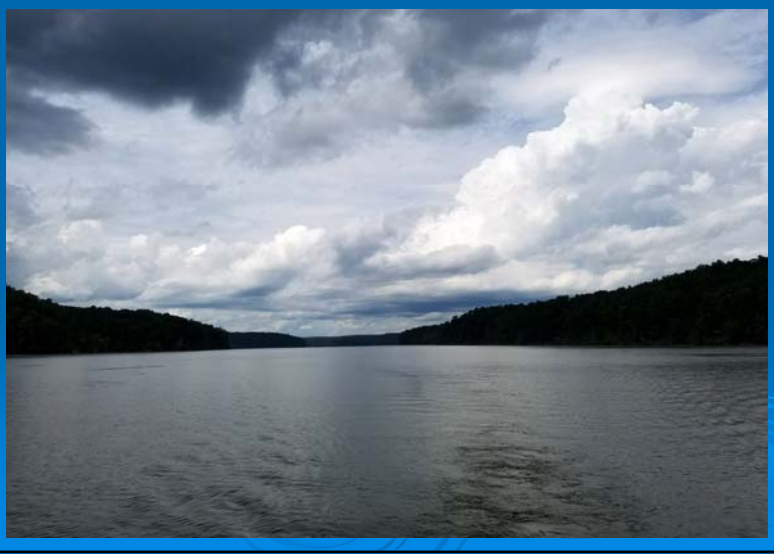


Elaine Chiosso
Haw Riverkeeper

info@hawriver.org

WATERKEEPER® ALLIANCE MEMBER

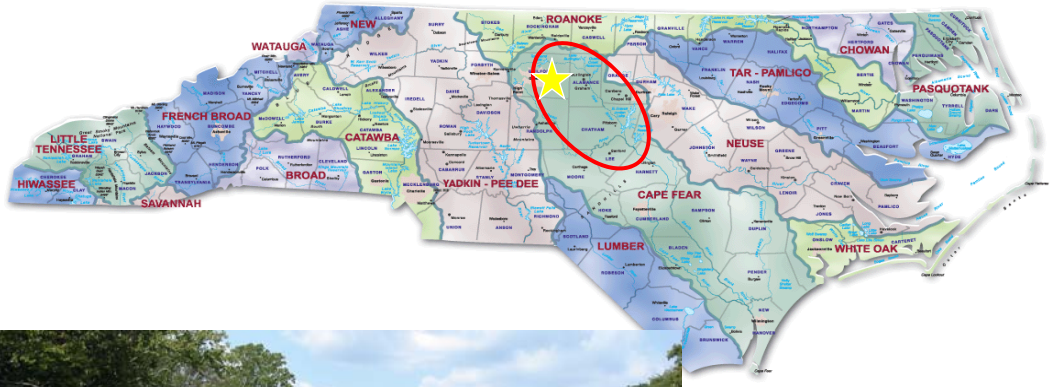
The Haw River Assembly began in 1982 -- the year that Jordan Lake was officially opened. Citizens came together to restore and protect the Haw River and Jordan Lake



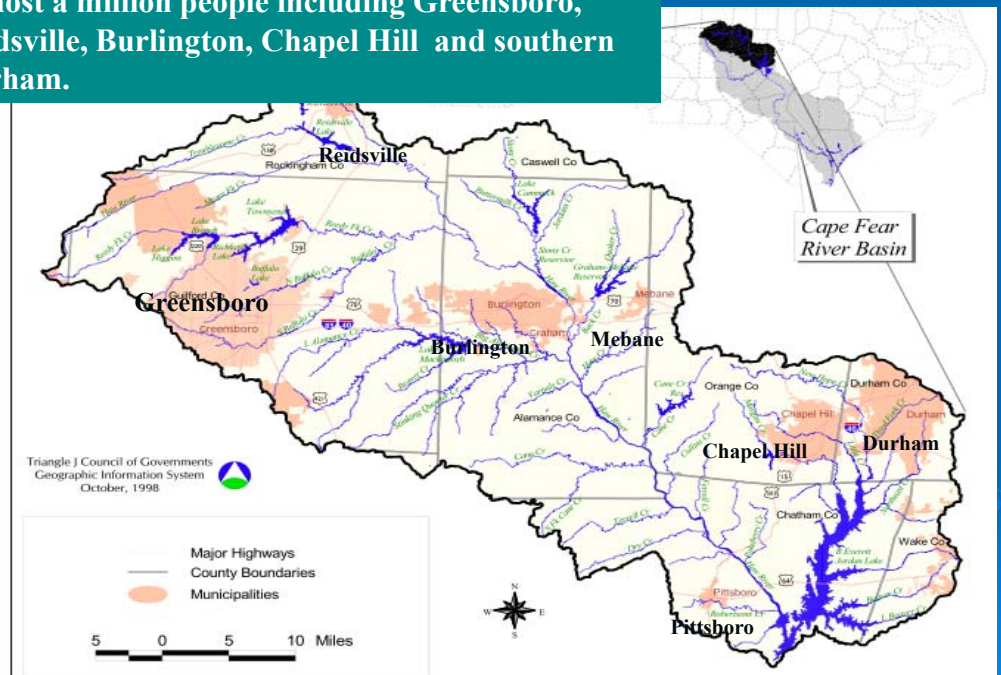
WATERKEEPER® ALLIANCE MEMBER

We were licensed by theWaterkeeper Alliance in 2008 as the Haw Riverkeeper program, joining hundreds of other water protectors across the world .

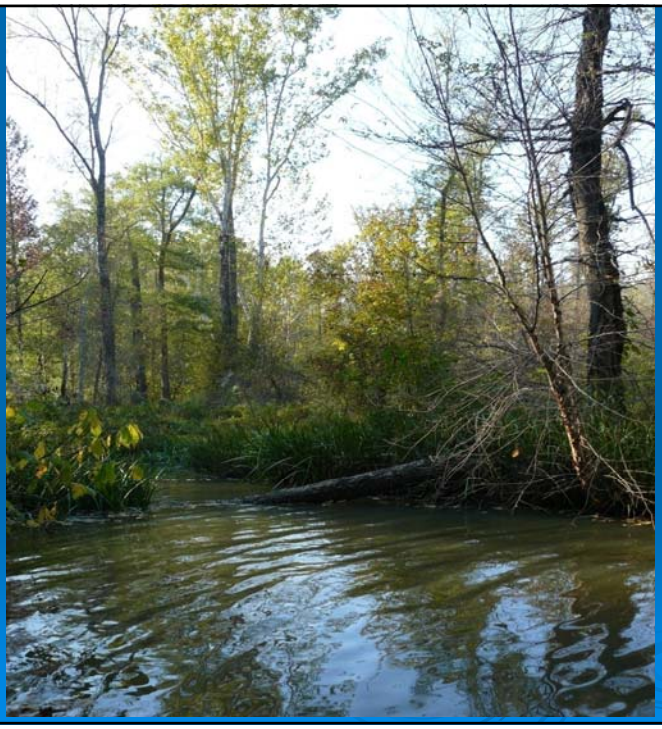
The Haw River is 110 miles long and drains land in 8 counties - over 1700 square miles in the Upper Cape Fear River Basin



Almost a million people including Greensboro, Reidsville, Burlington, Chapel Hill and southern Durham.



The Haw River begins in eastern Forsyth County at the headwater springs…

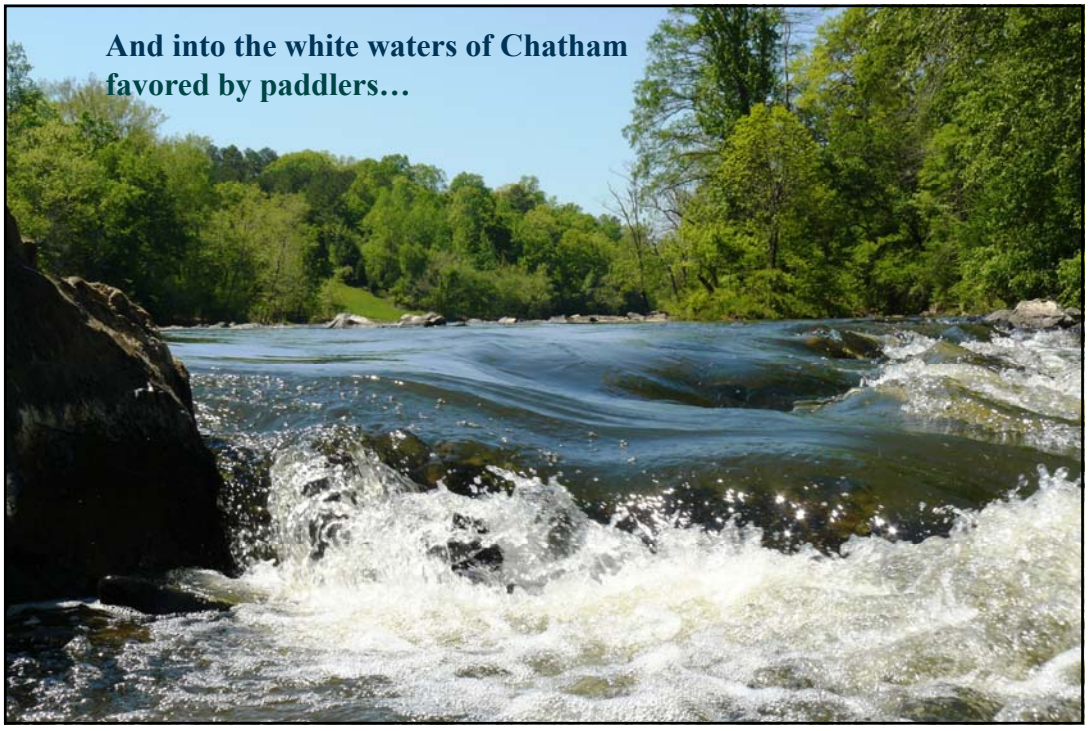


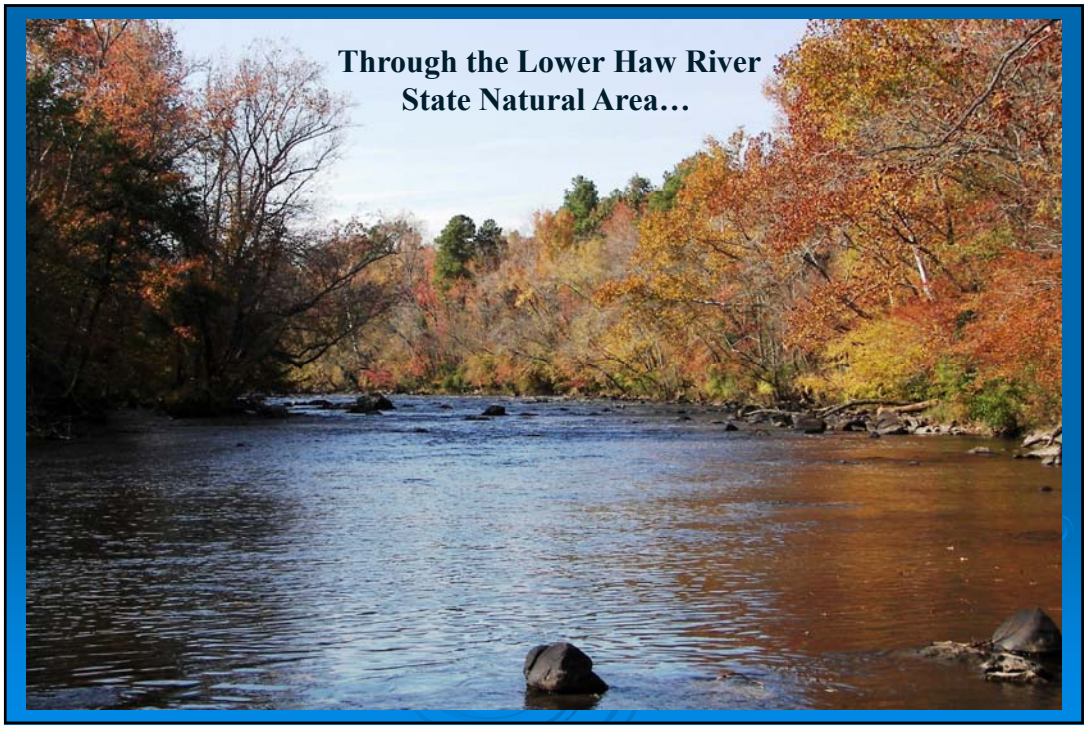
Flowing down through the upland swamps of Guilford and Rockingham counties and the Haw River State Park..

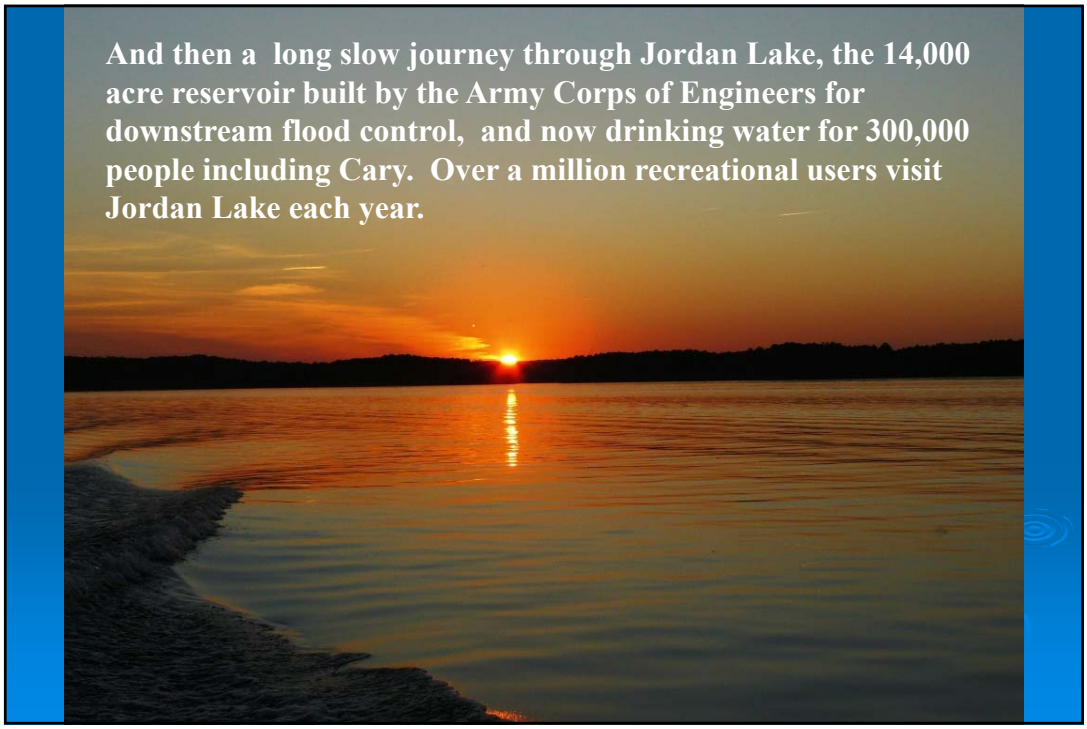
Over the Altamahaw dam – used for one of the old cotton mills, built in the 1800's to spin cotton, using the river for power. The mills are closed now

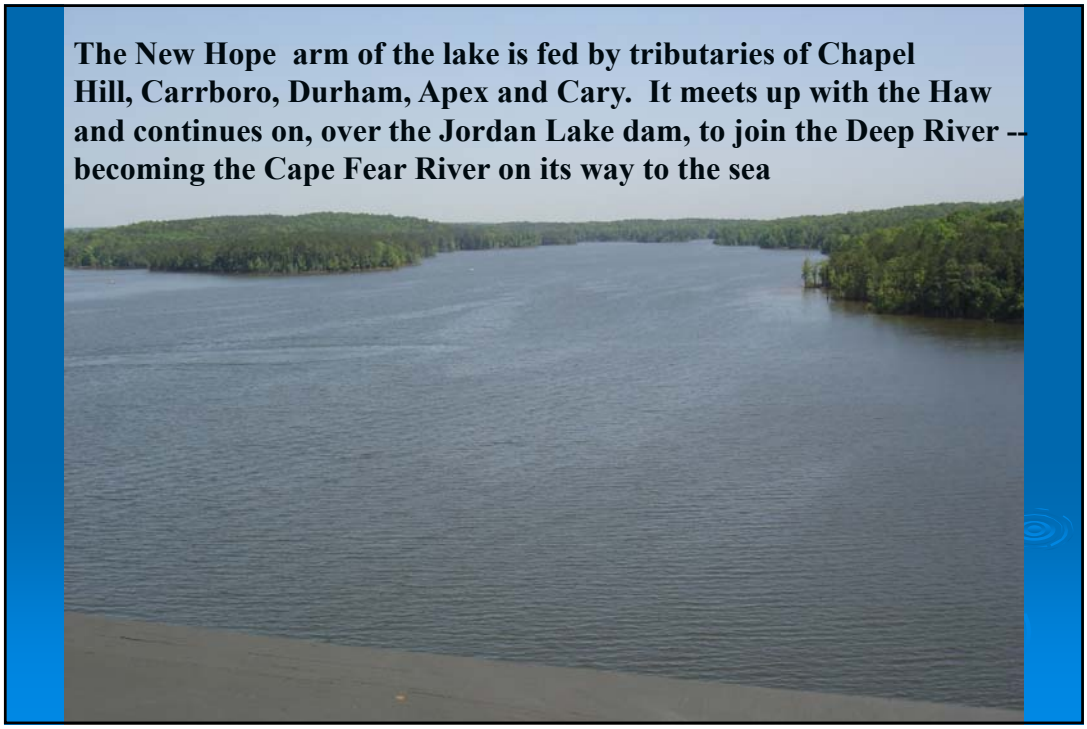
And through the once busy textile mill Town of Haw River

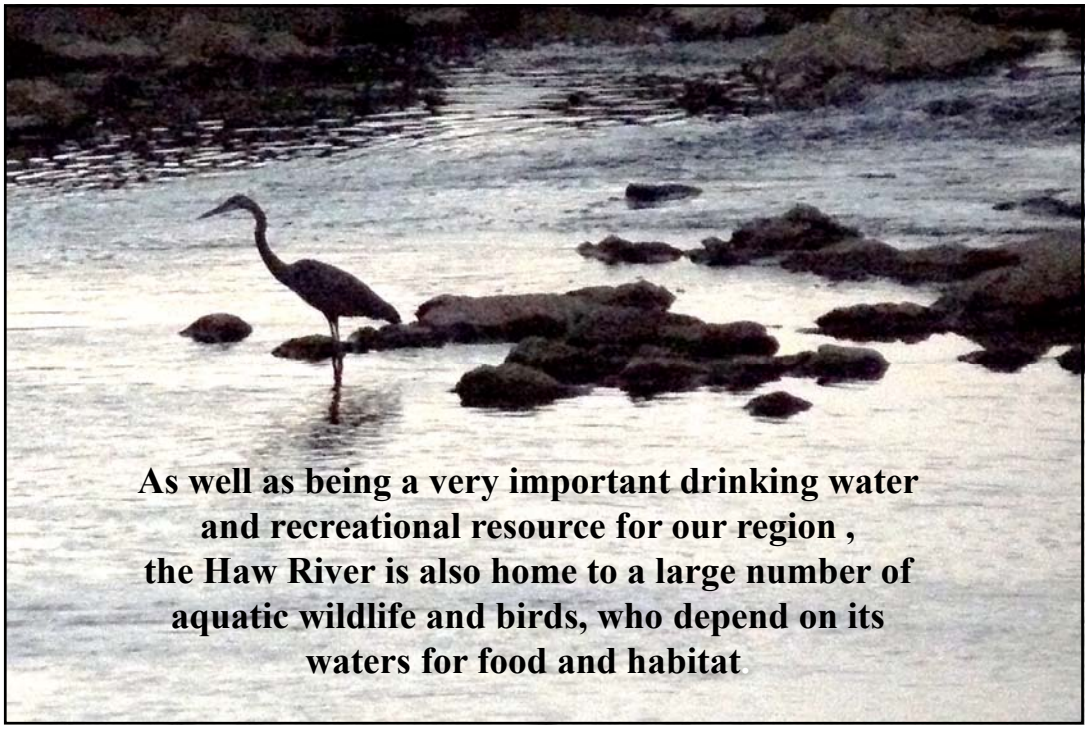
Flowing past the restored mill village of Saxapahaw


And into the white waters of Chatham
favored by paddlers…


Through the Lower Haw River
State Natural Area…


And then a long slow journey through Jordan Lake, the 14,000 acre reservoir built by the Army Corps of Engineers for downstream flood control, and now drinking water for 300,000 people including Cary. Over a million recreational users visit Jordan Lake each year.


The New Hope arm of the lake is fed by tributaries of Chapel Hill, Carrboro, Durham, Apex and Cary. It meets up with the Haw and continues on, over the Jordan Lake dam, to join the Deep River -- becoming the Cape Fear River on its way to the sea

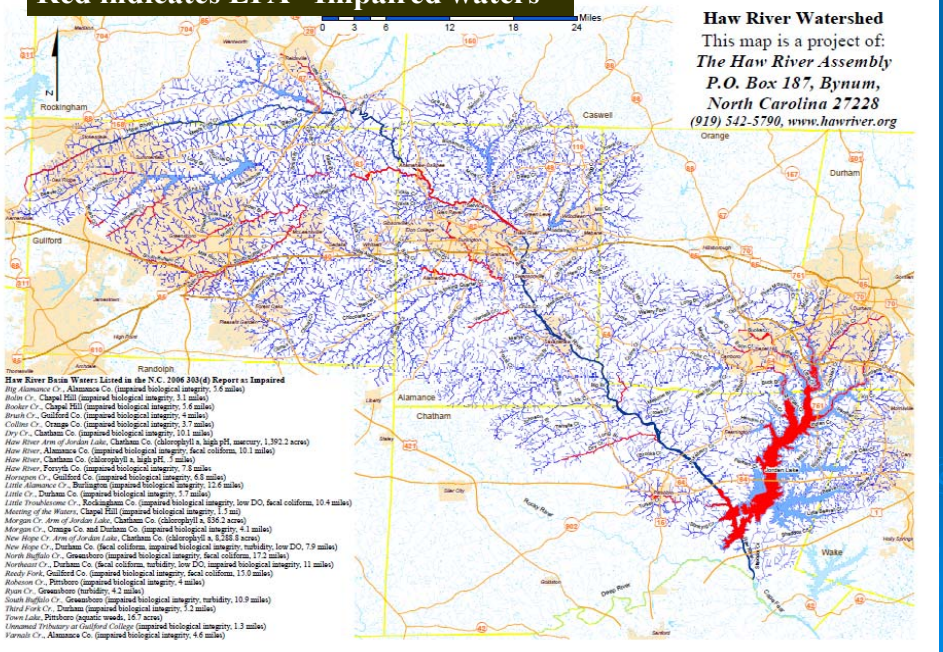


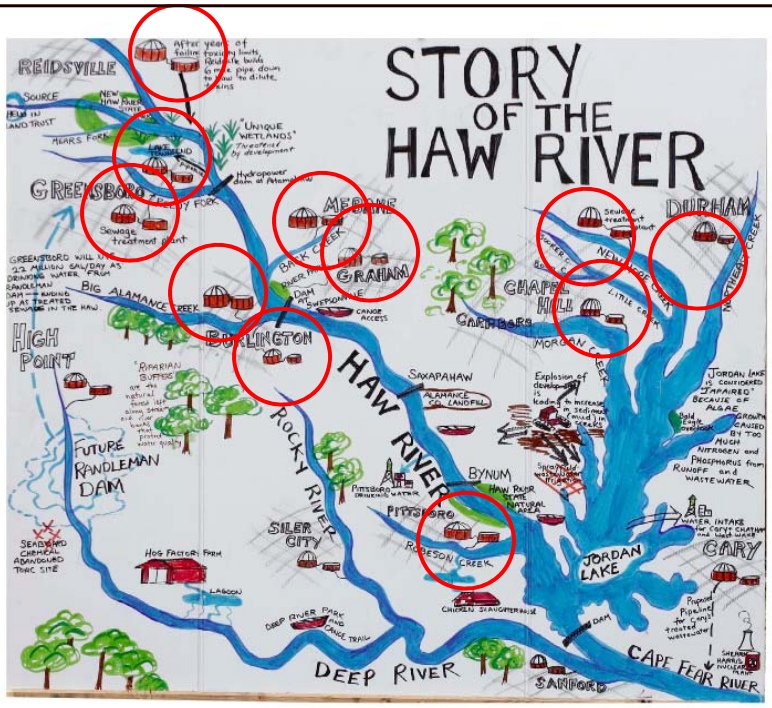
As well as being a very important drinking water and recreational resource for our region , the Haw River is also home to a large number of aquatic wildlife and birds, who depend on its waters for food and habitat


The federally listed Endangered Species of fish,
the Cape Fear Shiner

But the river and all who depend on it are impacted by runoff pollution that comes from cities, roads, construction, yards and farms --as well as treated wastewater.

Red indicates EPA "Impaired waters"





Eleven Major Municipal Wastewate Treatment Plants in the Haw River Watershed

Sewer Spills

In January 27, 2014 3.5 million gallons of raw sewage spilled from a main collector pipe in Burlington into the Haw. Much of the city's collection system needed repairs and replacing. We were able to reach a successful settlement to get the pipes are fixed! Old pipes are a problem in many cities in the Haw River basin.

Muddy Waters -- Sediment flowing from creeks into the Haw River during construction of new development

With new construction on the rise, we plan to launch a new version of our Muddy Water Watch program this spring – teaching volunteers how to see and report sedimentation and erosion control problems in their communities.

Algae Blooms:

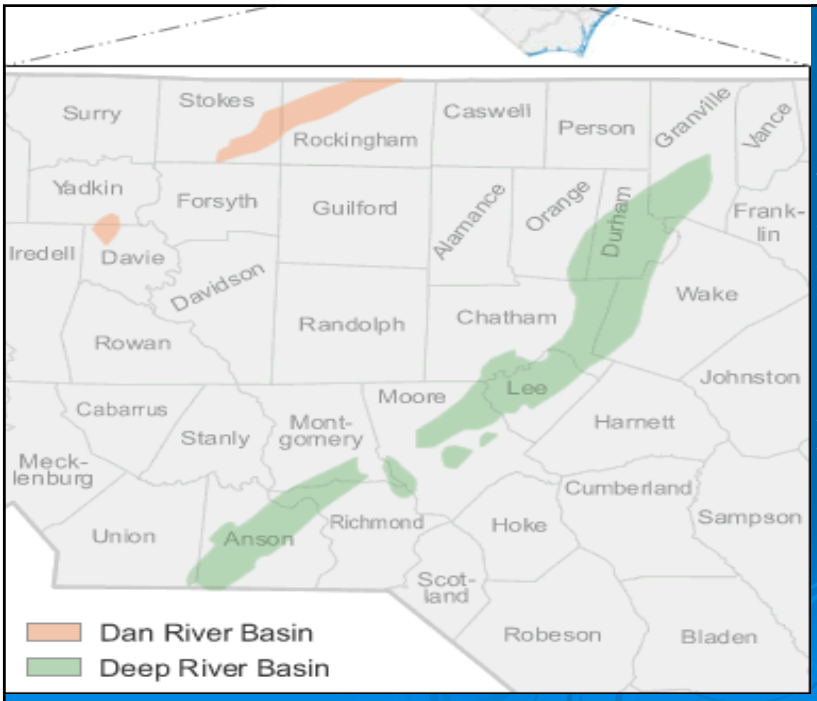
A frequent occurance from stormwater pollution and wastewater from upstream cities

Jordan Lake was listed in 2002 as a EPA 303(D)"Impaired Water" due to excessive algae from nutrient s. Rule making to reduce pollution from all upstream sources resulted in rules passed into law in 2009

The NC legislature put the pollution clean-up rules on hold starting in 2011. In 2014 they appropriated $1.5 million for a costly and futile experiment to try to suppress algae with "Solarbees". After a year, they were found to have no impact, and were removed, but many parts of the Jordan Lake rules are still delayed.

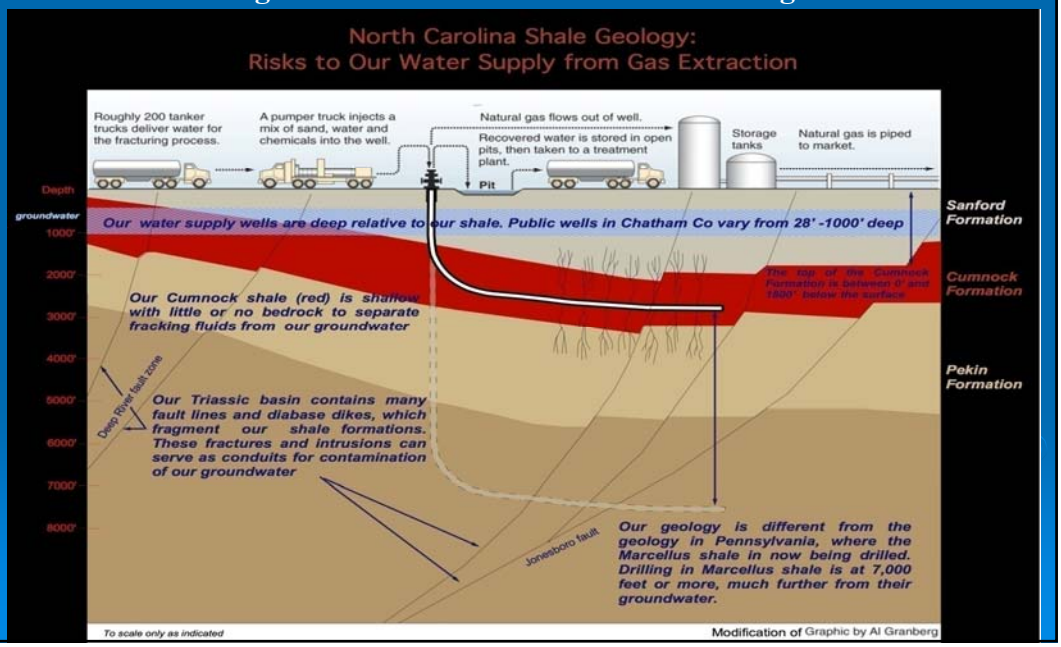
Fracking for shale gas could threaten the Haw River

(Photo from Marcellus shale fracking site, PA)

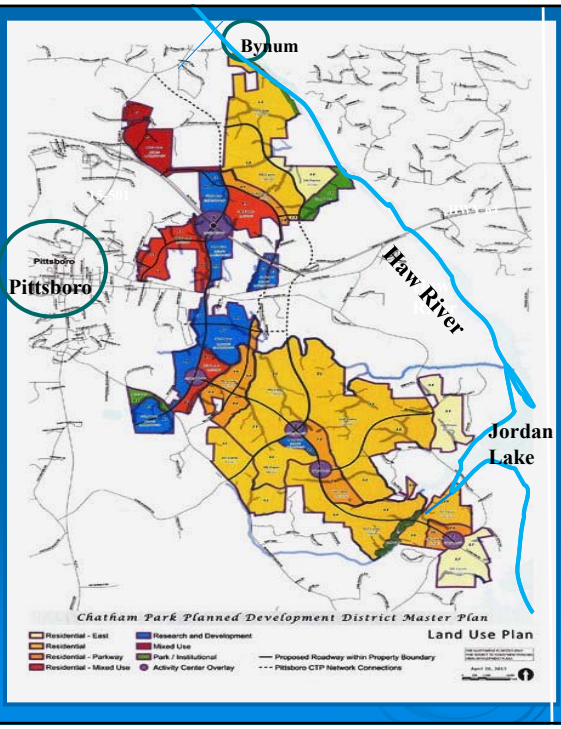


Includes the eastern Haw watershed in the Triassic Basin –parts of Chatham, Orange and Durham counties.

North Carolina's shale deposits are shallow, and this raises grave concerns for ground water contamination if fracking occurs here



HRA (represented by SELC) brought a lawsuit challenging the constitutionality of the Mining and Energy Commission and their weak fracking rules. We won a temporary injunction in May, 2015 against fracking permits being issued in the state.



Chatham Parks

What will be the impact on our waters?

The Master Plan approved by the Town of Pittsboro (who has control over the project) would allow 55,000 people and 22 million sq. feet of commercial area on 7,120 acres bordering the Haw River and Jordan Lake

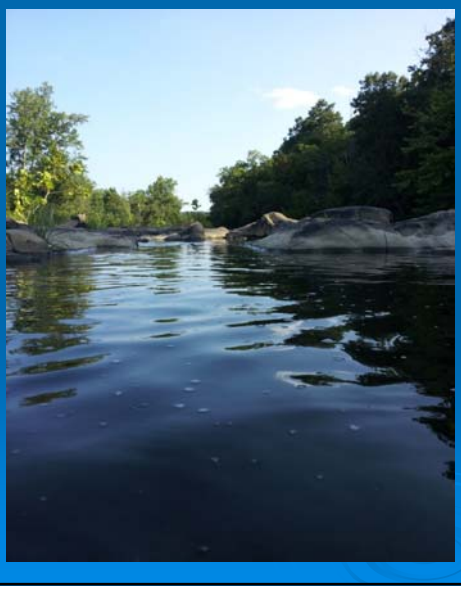
This land is *"one of the largest remaining unfragmented areas in the six county Triangle region"*

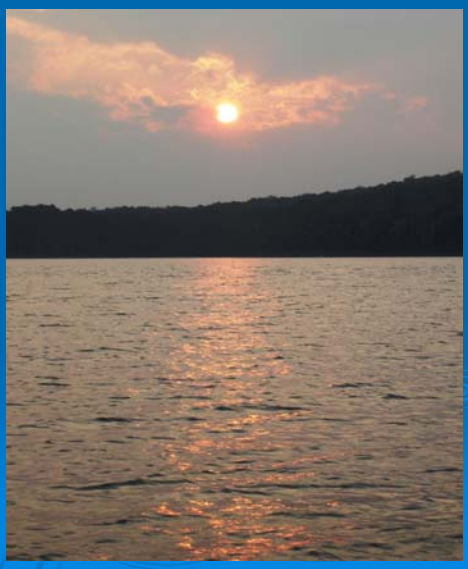
Southwest Shore Conservation Assessment
Chatham County, NC

Prepared by
Triangle Land Conservancy
Raleigh, NC
and
The Center for Sustainable Community Design, Institute for the Environment, University of North Carolina-Chapel Hill

October 2008

What will be the drinking water , wastewater and stormwater impacts of this new city for the Haw River and Jordan Lake?





Sludge In Our Waters

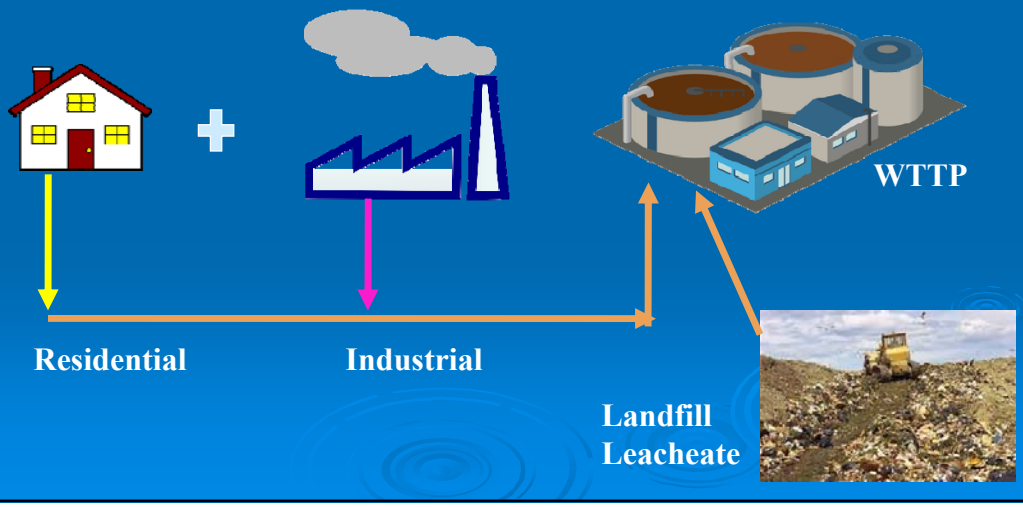
A new investigation into industrial contaminants in sewage sludge and the impacts on surface waters in North Carolina by the Haw Riverkeeper and Catawba Riverkeeper.

WATERKEEPERS CAROLINA

What is Sewage Sludge?

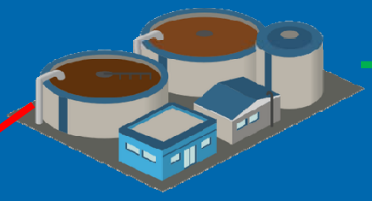
They are the "biosolids" left after pollutants are removed from the liquids at the waste water treatment plant (WWTP).

In the USA we mostly do "single stream" wastewater treatment – mixing residential, commercial and industrial and waste together



The treated wastewater – effluent- is returned to surface waters, the remaining solids become sludge

Sewage Sludge



Effluent

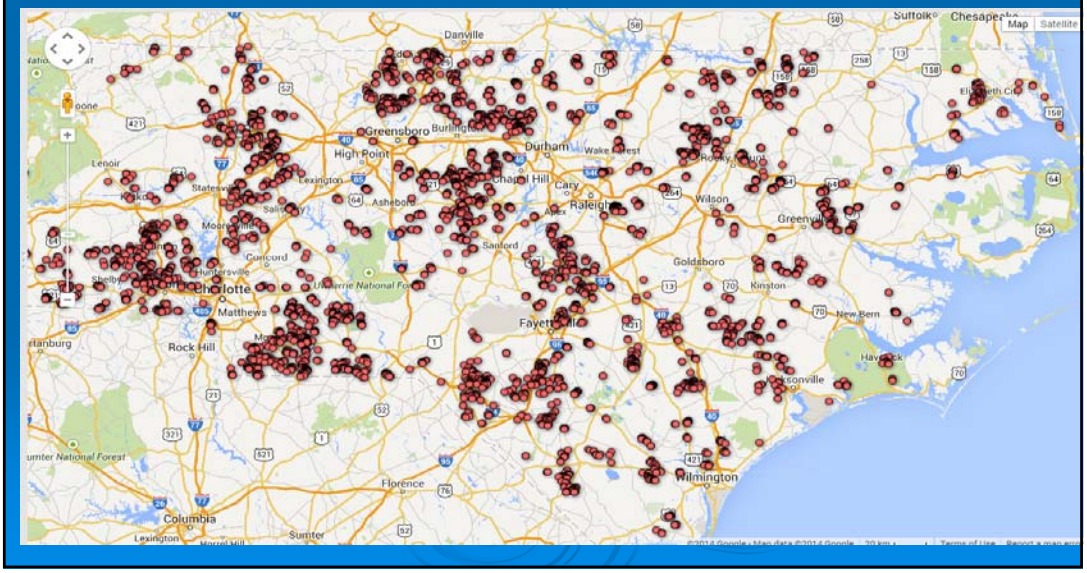
Regulations require effluent and sewage sludge to be tested for levels of pathogens, heavy metals and nutrients, but not the large number of chemicals – including industrial and pharmaceutical - that are in wastewater.

Over 50% of the sewage sludge generated in the US are land applied as fertilizer in rural areas. Farmers are not told this sludge may contain industrial chemical residue.

Industry is required to do "pre-treatment" to remove industrial chemicals before their waste is sent to a wastewater treatment. Lax regulations and enforcement means this does not always happen.

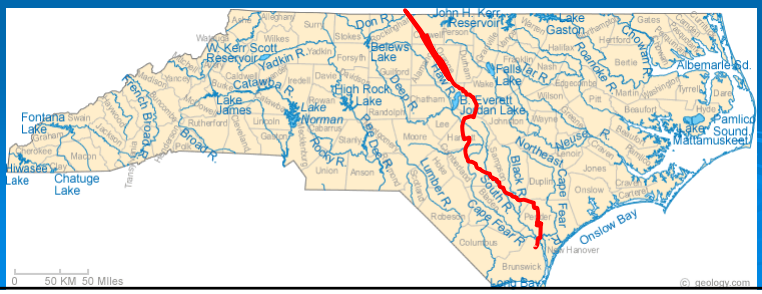
There are over 50,000 chemicals used in manufacturing in the USA . Only about 300 have been required to have human health testing and even fewer chemicals are tested for in our drinking water.

There are currently 4146 permitted sludge application sites in NC



What's in the Sewage Sludge?

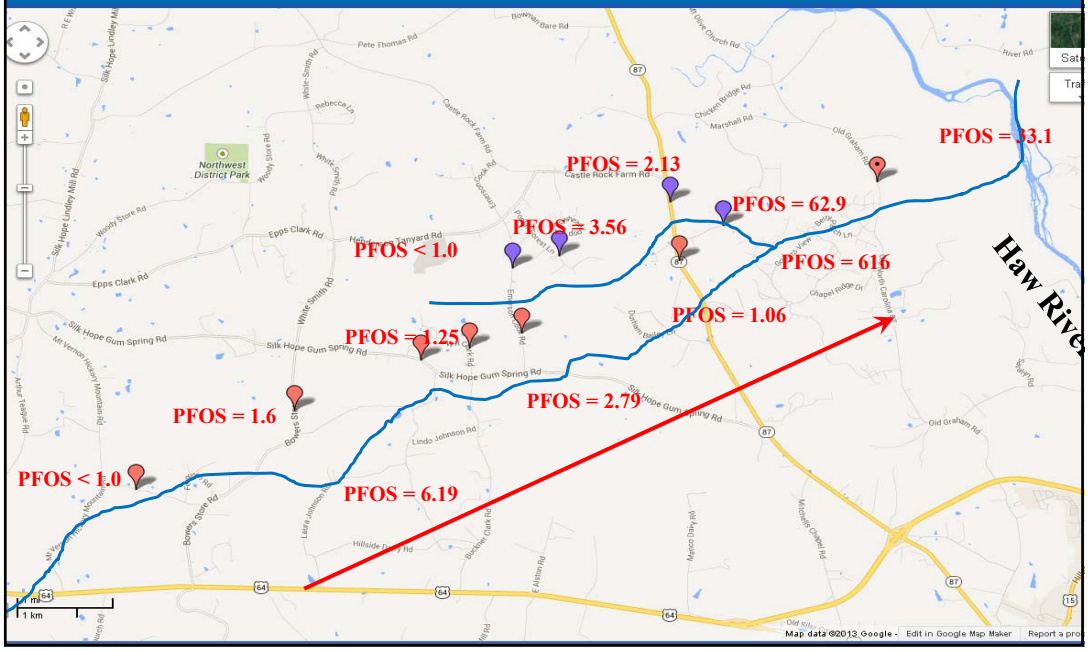
In 2007 a study was published that showed very high levels of the industrial chemicals called perfluorinated compounds were present in the Cape Fear River basin, with the highest amounts in the Haw River. PFC's are used widely in textiles coatings, adhesives and flame retardants.



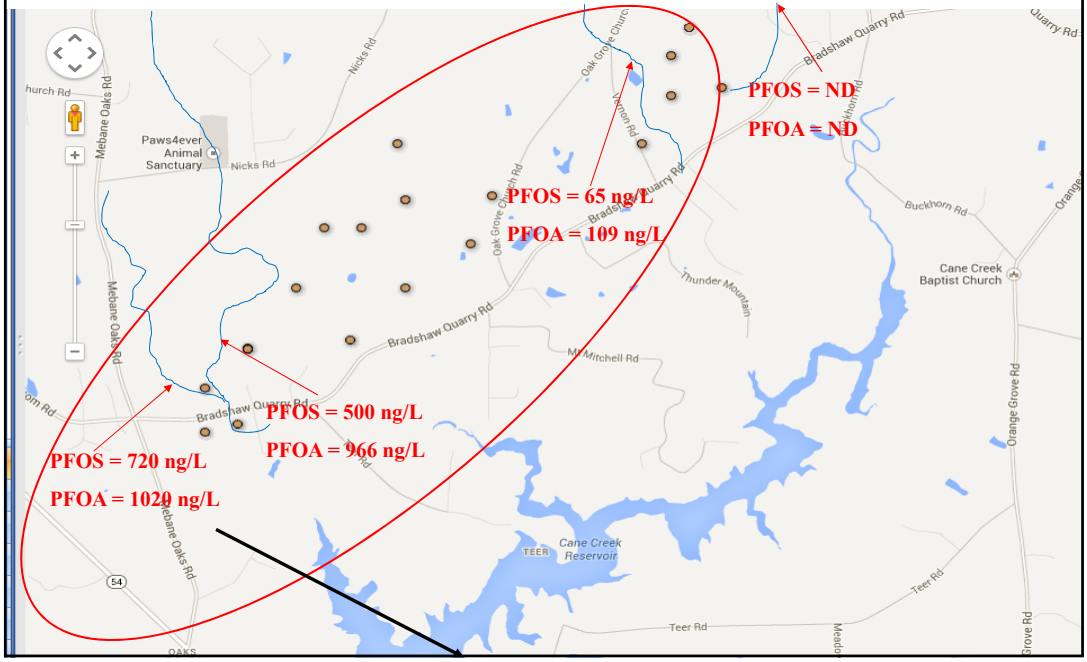
Scientists began testing tributaries of the Haw River, and discovered high levels of these PFC chemicals downstream from land where sludge from The City of Burlington had been applied.

Further downstream are drinking water sources.

Dry Creek (Chatham Co.) highest levels of PFOS at 616 ng/L



Monitoring Data from headwaters in Cane Creek Reservoir, Orange Co



In both of the examples above the source of the sludge was City of Burlington WTTP plants. Data from sludge tested at these plants is below.

	South sludge 8/1	South sludge 8/1	East sludge 8/1	East sludge 8/1	South sludge 8/23	South sludge 8/23	East sludge 8/23	East sludge 8/23
C6	157	141	1080	1130	308	300	1280	1340
C7	210	191	880	883	384	446	1080	1300
PFHxS	203	214	734	738	478	459	1050	1010
PFBS	234	252	409	417	375	331	767	766
PFOA	**179**	**177**	**648**	**705**	**535**	**565**	**1120**	**1130**
C9	176	144	989	962	659	612	1170	1450
PFOS	**284**	**216**	**1410**	**1300**	**1420**	**1170**	**1570**	**1680**
C10	437	346	1830	1560	1810	1500	2180	2090
C5	100	100	159	167	72	64	331	289

US Environmental Protection Agency has set new a new Drinking Water Health Advisory for life time exposure to PFOS and PFOA of 70 ng/L

Some experts are calling for a further reduction to be truly protective PFOS = 2 ng/L PFOA = 4 ng/L

Highest levels seen in creeks in previous slides
PFOS = 720/ngl PFOA = 1020 ng/L

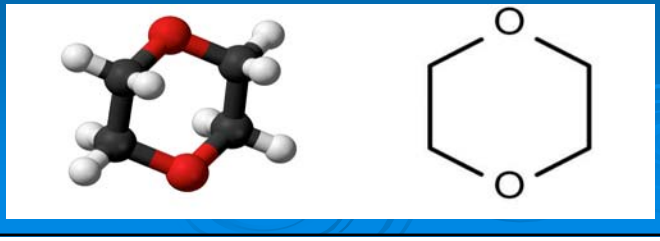
Multiple health effects have been shown in studies of populations with PFC contamination in drinking water including cancer, diabetes and estrogenic effects.

Recommendations from "Sludge in Our Waters" Report

1. Testing and Removal of Industrial and Chemical Contamination
2. Improve Treatment and Application Standards
3. 3. Local Control of Sludge Application
4. Better Federal Policy and Oversight
5. Public examination of the everyday use of the tens of thousands of chemicals produced and consumed in this country. What are the true costs and risks of chemicals in household cleaners, body products, pharmaceuticals, etc., and their persistence through the wastewater cycle and back into the environment and drinking water.

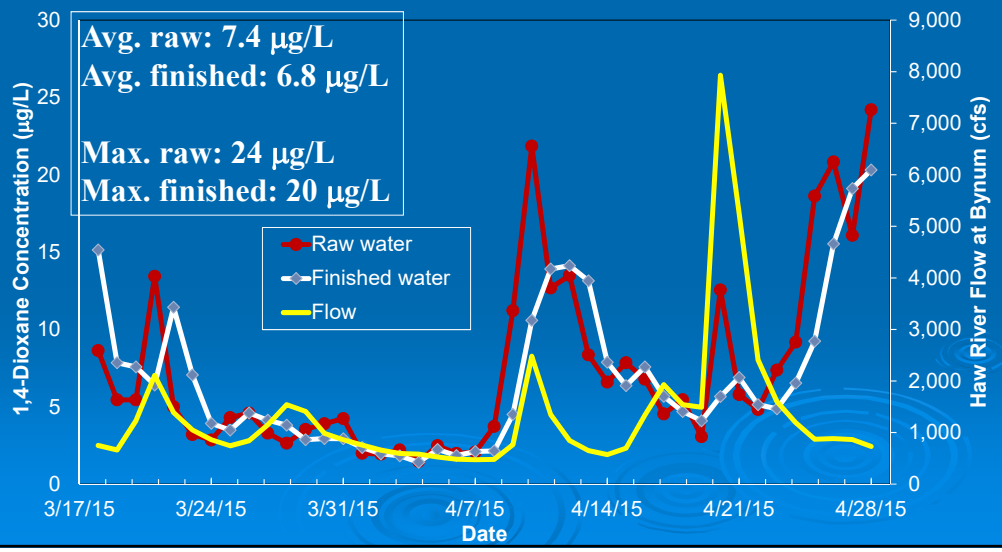
1,4-Dioxane Occurrence in the Haw River and in Pittsboro Drinking Water

Another industrial chemical, used as a solvent, has been found in the Haw River waters, this time traced to wastewater effluent from Greensboro and Reidsville . It is showing up downstream, in Pittsboro and Fayetteville drinking waters



1,4-Dioxane Concentrations in Raw and Finished Pittsboro Drinking Water

from presentation by Dr. Detlef Knappe, NCSU



We have worked with Dr. Detlef Knappe of NC State to alert the Town of Pittsboro about this danger to it's drinking water.

Steps are being taken to identify industrial sources and Pittsboro has added treatment methods to reduce the amount of 1,4-Dioxane and other contaminants in the drinking water

There are some of the many problems – how do we find solutions?

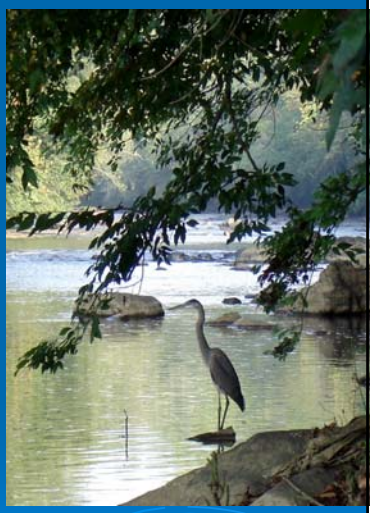
Advocacy and litigation

We support efforts for better regulations and enforcement -- and take polluters to court when necessary.

Conservation-saving riparian buffers

Haw headwater springs

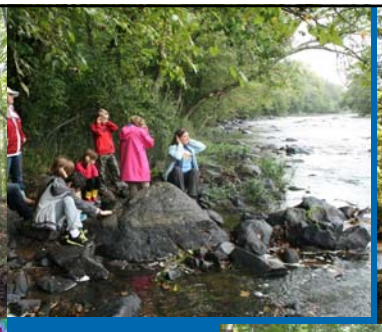
Haw River State Park in Guilford and Rockingham counties



Lower Haw River State Natural Area in Chatham county

Citizen Science Stream Monitoring

Since 1995 volunteers have taken part in our Haw River Watch stream monitoring project. We train citizen scientists to be watchdogs for water quality.



Education

Our outdoor Learning Celebration program for schools has reached 43,000 children since 1990

River Clean-ups

In the past 26 years 4700 volunteers have removed 8675 bags of trash, 1670 tires and TONS of old appliances, car parts and other junk befouling the waters.

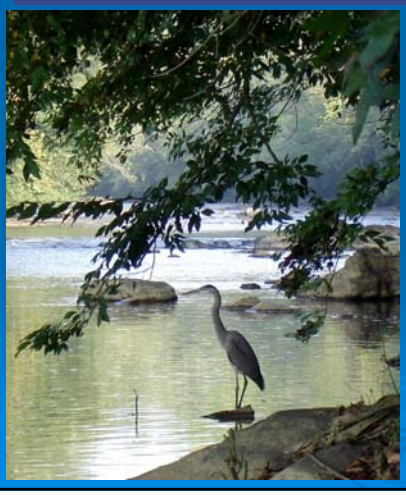
We work for Environmental Justice

Clean water and healthy environments is the right of *all* communities in the Haw River watershed.

Rivers are the living arteries of our land.
Rivers sustain and renew us.

Haw River Assembly

Defending the river since 1982.



For more information:

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