

Legal Limits on Regulating Local Water Quality Impacts from Agricultural Runoff and Septic Pollution

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What is the Largest Source of Pollution in
Lakes and Rivers?

What is the Largest Source of Pollution in Rivers and Streams?

Agricultural Runoff

(Also the second largest polluter of wetlands)

(Also the third largest polluter of lakes)

EPA, National Water Quality Inventory (2017)

Agricultural runoff

- Fertilizer (nitrogen, phosphorus)
- Pesticides
- Herbicides
- Animal waste (nitrogen)
- Metals
- Salts
- Sediment/soil particles (siltation)



Agricultural Runoff = Nutrient Loading

- Dead Zone
- Blue-green algae (Harmful algal blooms)
- Brown or green freshwater lakes

Agriculture in Alabama: 6,041,639 acres of
harvested cropland

Total Area of State = 33.548 million acres

Agriculture in Mississippi: 6,239,126 acres of
harvested cropland

Total Area of State = 30.995 million acres

Clean Water Act (1972): Controls discharges of pollutants into the waters of the United States

Lakes

Rivers

Wetlands

Oceans

Discharges into water must be free of pollutants (40 C.F.R. § 122.2)

- Solid waste
- Sewage
- Garbage
- Chemicals
- Heat
- Rock
- Dirt



Clean Water Act (CWA)

Point Source

Nonpoint Source

Agricultural Runoff: Point Source?

- CWA says no
- “Point source does not include agricultural stormwater discharges and return flows from irrigated agriculture” (33 U.S.C. § 1362(14))

Agricultural Runoff: Nonpoint source?

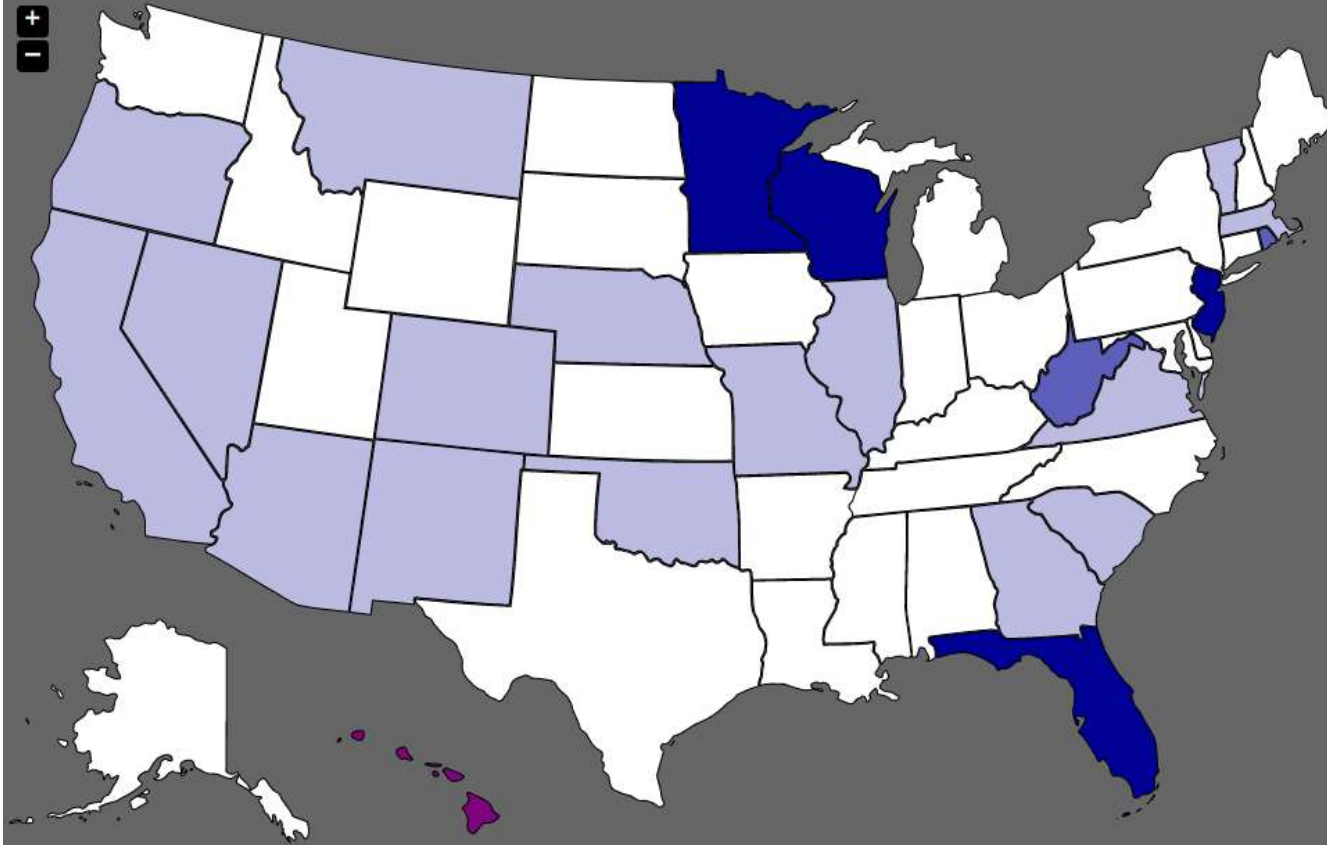
- Yes
- But no EPA permit required
- Other forms of nonpoint source pollution more tightly regulated, notably stormwater in municipalities

Pre-emption: The Clean Water Act Pre-empts Some Local Government Actions

- Law with superior authority
- Law “occupies the field” of regulating
- Law precludes inferior jurisdictions from enacting law on the same subject

States with Total Nitrogen or Total Phosphorus Criteria

1998 2008 2013 2014 2015 2016 2017 Current 2018* 2019* 2020* 2021*



	District of Columbia
	American Samoa
	Commonwealth of Northern Marianas
	Guam
	Puerto Rico
	US Virgin Islands

Level 5	Complete set of N and P criteria for all watertypes**
Level 4	2 or more watertypes with N and/or P criteria
Level 3	1 watertype with N and/or P criteria
Level 2	Some waters with N and/or P criteria
Level 1	No N and/or P criteria

Option One: Buffers along waterways

- Def: Buffer means an undisturbed area along a wetland, shoreline or watercourse where development and/or redevelopment is prohibited by any applicable law, ordinance, rule or regulation” (Fairhope § 7-193)
- Need to expand definition. Consider ”...where development, redevelopment, or agricultural use is prohibited”
- Could also require buffers be planted with native plants, including nutrient absorbing grasses

Option Two: Impose a Setback from Agricultural Use

- Setbacks differ based on purpose and use
- Likely need to modify existing ordinances to capture agricultural use
- To achieve runoff reduction, the setback only works if it includes a requirement to plant native vegetation in that setback area

Option Three: No Agricultural Use in Floodways

- Model Flood Ordinance allows agricultural uses within floodways
- Ex: “permissible uses within the floodway may include: ... general farming, pasture, outdoor plant nurseries, horticulture ... and other similar agricultural uses.... The uses in this subsection are permissible only if and to the extent that they do not cause any increase in flood levels during the base flood discharge” (Fairhope § 12-180(6))
- Instead of ban, impose large buffer around floodways

Option Four: Promote Wise Use

- Provide forecasting and advice for applying fertilizer and pesticides
- National Weather Service set up program in Midwest, based on rain (and snow melt)

Runoff Risk App

Risk



No Runoff Expected



Low



Moderate



Severe



Low (Frozen Soil/Snow-Covered)



Severe (Frozen Soil/Snow-Covered)

Option Five: Limited Regulation

- Address only subsistence agriculture
- Ex: “all runoff must be contained on-site.” (for subsistence animal farming and subsistence poultry farming) (Lafayette County, MS § 416)



What's the 2nd Most Common Source of Pollution in Bays and Estuaries?

Discharges of sewage from sewage treatment plants, septic systems, and wet weather sewer overflows

Septic Runoff/Contamination



- Nitrogen
- Phosphorus
- Enterococci (poop)

According to 1990 Census:

Septic Users in Alabama: 728,690 (43.6%)

neither sewer nor septic: 30,907

Septic Users in Mississippi: 387,406 (38.3%)

Neither sewer nor septic: 37,832

Septic Systems = Point Source when
Discharging into Waters or Wetlands

Also...

Clean Water Act “is best read as excluding all releases of pollutants from a point source to groundwater ... regardless of a hydrologic connection between the groundwater and jurisdictional surface water.”

84 Fed. Reg. 16810 (April 23, 2019)

EPA Suggestions for Local Management of Septic

- **Homeowner awareness**
- **Maintenance contracts**
- **Operating permits**
- **Responsible Management Entity operation and maintenance**
- **Responsible Management Entity Ownership**

Homeowner awareness

- Educational rather than regulatory
- Government mails maintenance reminders to owners at appropriate intervals
- Depends on site – less useful in areas with problematic soils

Maintenance contracts

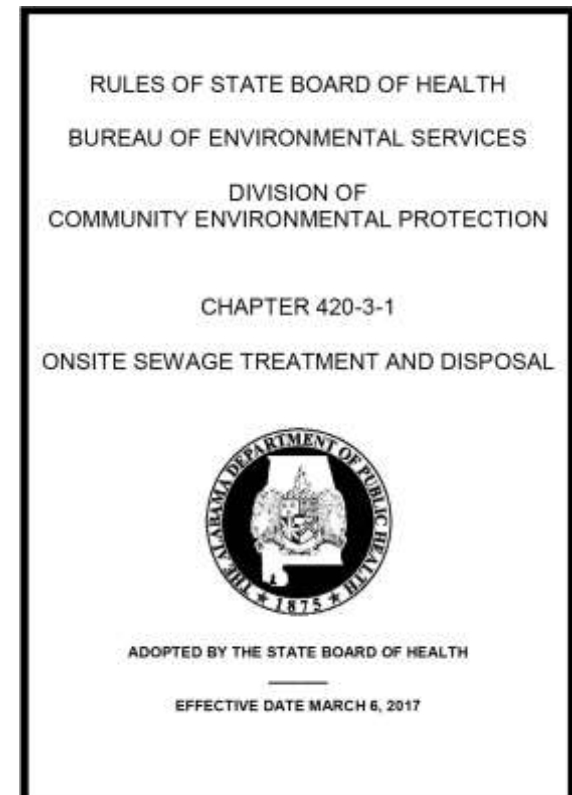
- **More oversight needed**
- **Requires qualified technicians to ensure proper and timely maintenance**
- **Reporting difficulties -- requires owners to report problems**

Operating permits

- Issued to the owner for a period of time, and renewable upon demonstration that the system is fully functional
- Regulatory authority must have expertise to assess systems
- Regulatory must have resources to track permits

Responsible Management Entity Operation and Maintenance

- Create an entity that will manage, operate, and maintain all septic
- Would likely require state legislation to grant entity the right to hold the permit for septic owners
- Need right of way/easement to allow inspection/maintenance/repairs
- Somebody needs to oversee entity



Responsible Management Entity Ownership

- Requires creation of entity that is responsible for the system, including ownership
- Easement/right-of-way for access
- Oversight of whoever is managing
- Not practical for large geographic areas (cannot monitor without user's input)



Choice of Septic Management Schemes weighs siting requirements, financing, regulatory support

- **Operating Permits are middle ground**
- **No ordinances required to impose, although regulatory authority needs enforcement powers**
- **Regulatory authority must establish permit tracking system**

Another option: Loans

- **Better for low-income rural areas**
- **Have county issue loans at 5% over 20 years to residential owners for septic system upgrades**
- **Eligibility by showing system has “failed”**
- **Secure loan with a lien on property (“betterment assessment”)**

For All Counties

- Make website a resource center
- Information on operating and maintaining a septic system (hyperlink)
- Lists of Contractors
- Link to State permitting and other forms (if adding local registrations, for example)
- Link to any local ordinances about septic

Local Regulation of Septic

- Peak v. City of Tuscaloosa, 73 So. 3d 5 (Ala. Crim. App. 2011)

Alabama municipality can require registration of septic tanks near a significant body of water



Pre-emption

- Did State laws for septic permits pre-empt the city law?
- If it's a county regulating, is there authority?
- City of Selma v. Dallas County, 964 So. 2d 12 (Ala. 2007)
 - governmental function vs. proprietary function

Governmental vs. Proprietary

- **Lane v. Zoning Bd. of Adjustment of City of Talladega, 669 So.2d 958 (Ala. Civ. App. 1995)**
- **Where county exercises governmental function, city zoning does not trump**
 - **Zoning = proprietary function**
 - **Governmental function: “the means by which the governing entity exercises the sovereign power for the benefit of all citizens”**

Avoid Septic Pre-emption Questions

- Clearly identify public health/safety purpose
- Avoid re-regulating something another government unit is acting on



The Value of Watershed Planning in Rural Regions

Stephen Deal, Extension
Specialist in
Land Use Planning

Importance of Region's Water Resources

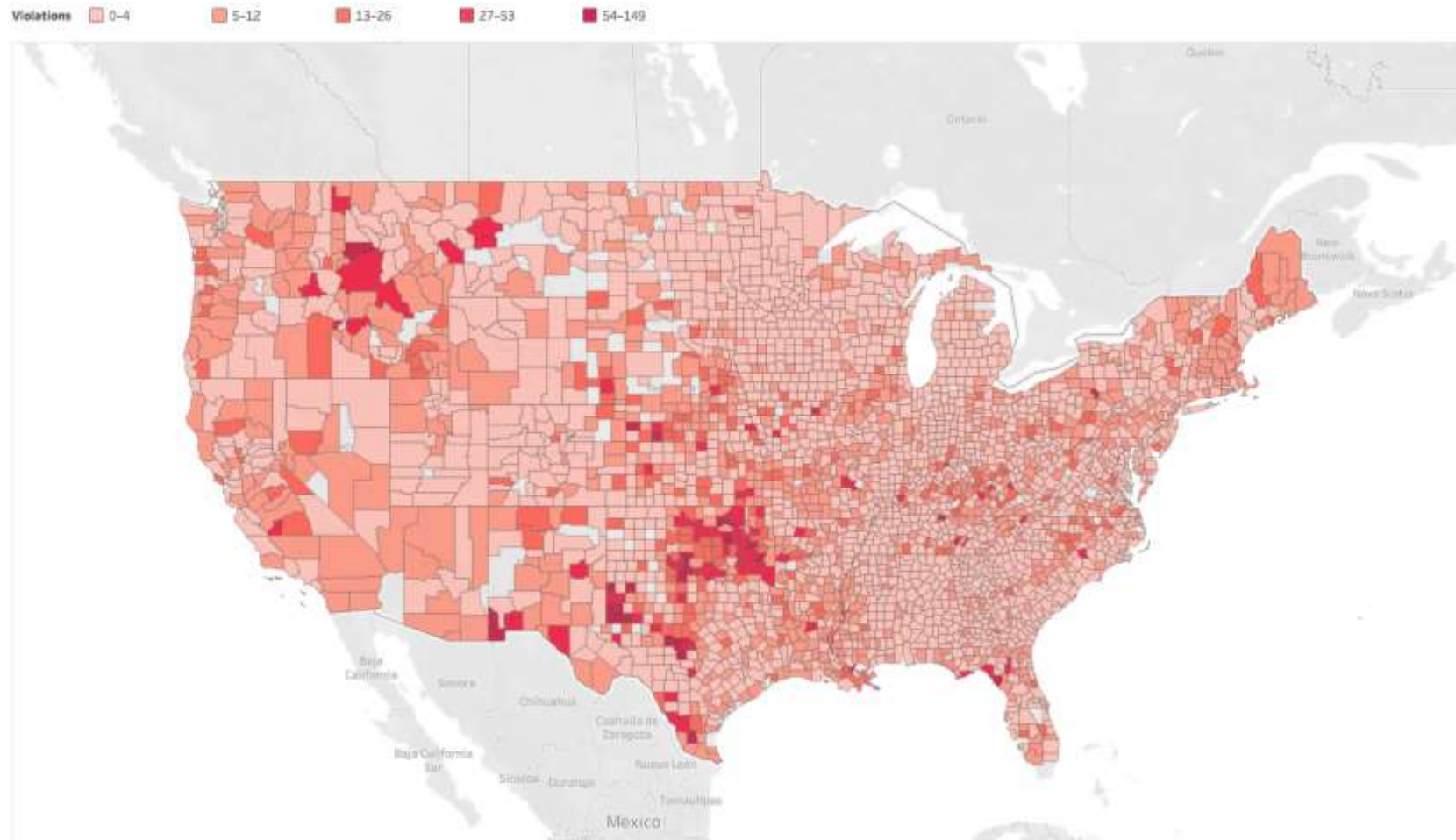
- Mississippi has 81,300 miles of river, Alabama has an estimated 132,000 miles of river and stream channels.
- Pascagoula – Largest free-flowing river system in lower 48.
- Mobile-Tensaw Delta – 2nd largest delta in the contiguous United States
- Key rivers within the two states include: Mississippi, Pearl, Tennessee, Mobile, Tombigbee and Yazoo Rivers





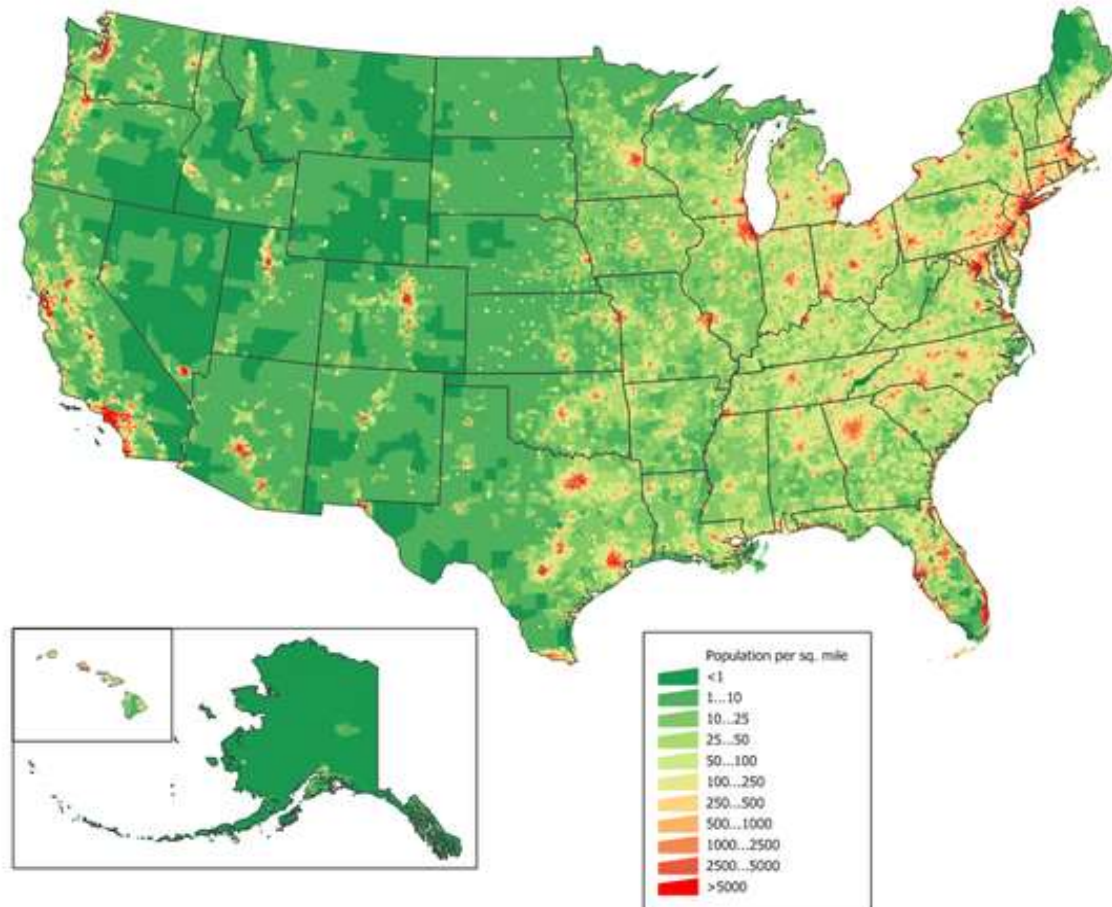
Water Quality Challenges Within Rural Regions

County-Level Water Quality Violations, 1982-2015

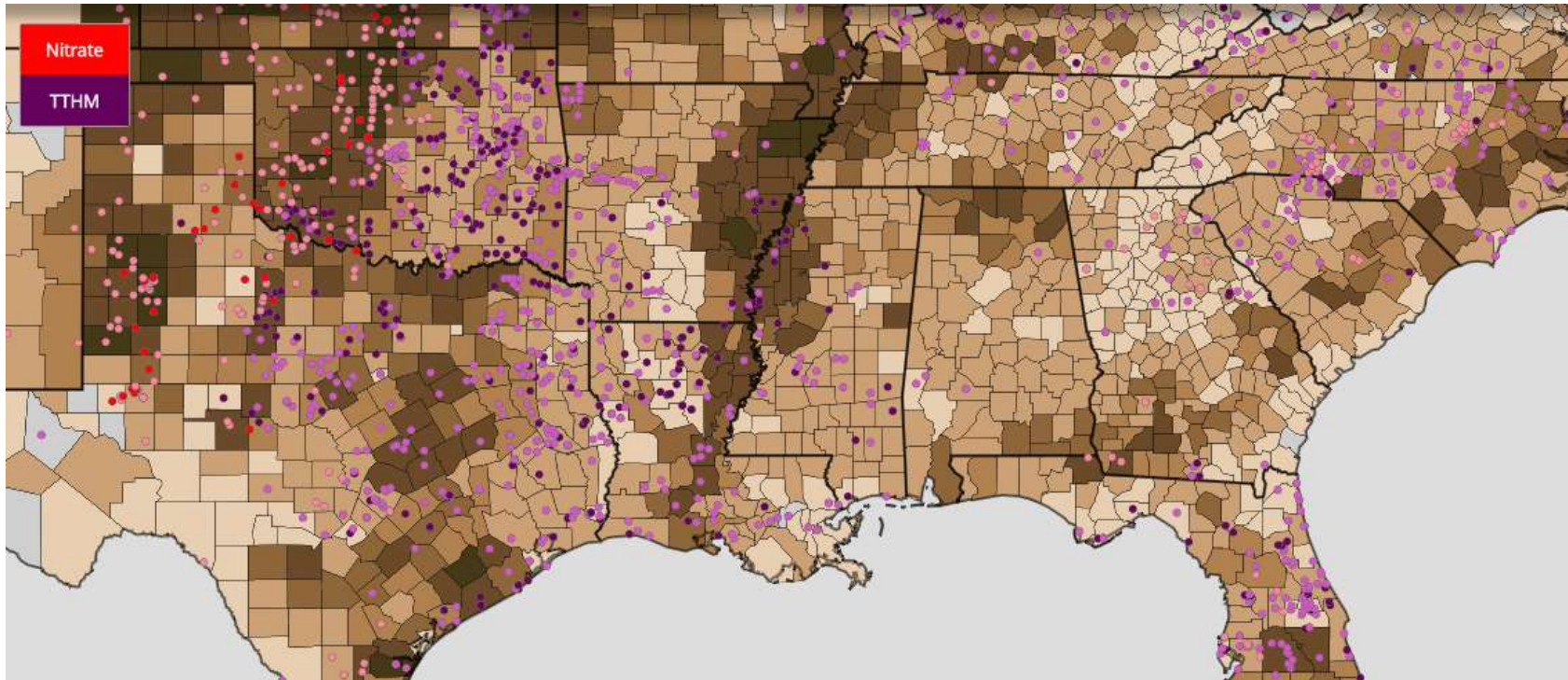


Source: Science Magazine

Populations Density in the United States



Nitrate Pollution



Source: Environmental Working Group

Private Water Systems

- 800,000 people in Alabama depend on private water supplies. A little over 380,000 in Mississippi are on a private well.
- Private wells may be subject to higher rates of lead contamination due to corrosive water within system.
- If water supply used is slightly acidic or contains high levels of salt, the well water can erode plumbing components and release lead.
- Well water sampling services are available through MS Dept. of Health.

10 Flood-Impacted Midwest States Have 1 Million Wells in 300 Affected Counties



Well Count in Flood-Impacted Counties

Wisconsin:	281,141
Minnesota:	254,922
Illinois:	201,821
Iowa:	153,517
Missouri:	96,314
Nebraska:	76,982
Indiana:	24,257
South Dakota:	11,900
Kentucky:	9,994
Kansas:	3,309
TOTAL:	1,114,157



DHHS/DEQ providing free water testing for well owners affected by flood

Posted: 4:43 PM, Mar 26, 2019 Updated: invalid date

By: Danielle Meadows



LINCOLN, Neb. (KMTV) — The Nebraska Department of Health and Human Services (DHHS) and the Nebraska Department of Environmental Quality (DEQ) are offering free water testing to private well owners affected by floods.

Recent flood conditions can threaten the quality of private water supplies. A press release from DHS stresses that any flooded water wells impacted by flooding should be tested to ensure safety.

Cloudiness or a change in smell or taste are signs of potential contamination. If there is any indication that the water supply has been breached by flood waters, even if there are no noticeable differences, residents are encouraged to test the water.

Residents with wells impacted by flood water are also encouraged to contact their local water well professional to provide shock well treatments, or follow the well treatment guide from the University of Nebraska-Lincoln [here](#).

Samples will test for coliform and E.coli. Information is also available about disposal of solid wastes and septic systems.



Unique Case Studies of Watershed Planning

Why Watershed Planning?

- Watersheds provide a context to restoration activities that is easy to understand and comprehend.
- Nonpoint source pollution is a contributor to impaired water quality in rivers and streams. This means a greater geographic scope is required to address water quality concerns going into the future.
- Large watersheds may cross multiple jurisdictions and regulatory boundaries.

The Value of Monitoring

- Government agencies do not have the resources to monitor every impaired stream, so watershed groups can fill information gaps by conducting regular water monitoring.
- With simple training, local citizens can capture basic water quality data such as temperature, conductivity, water pH level and dissolved oxygen content
- Alabama Water Watch and Adopt a Stream Mississippi provide training and resources for water quality monitoring.

Mapping Impaired Rivers & Streams

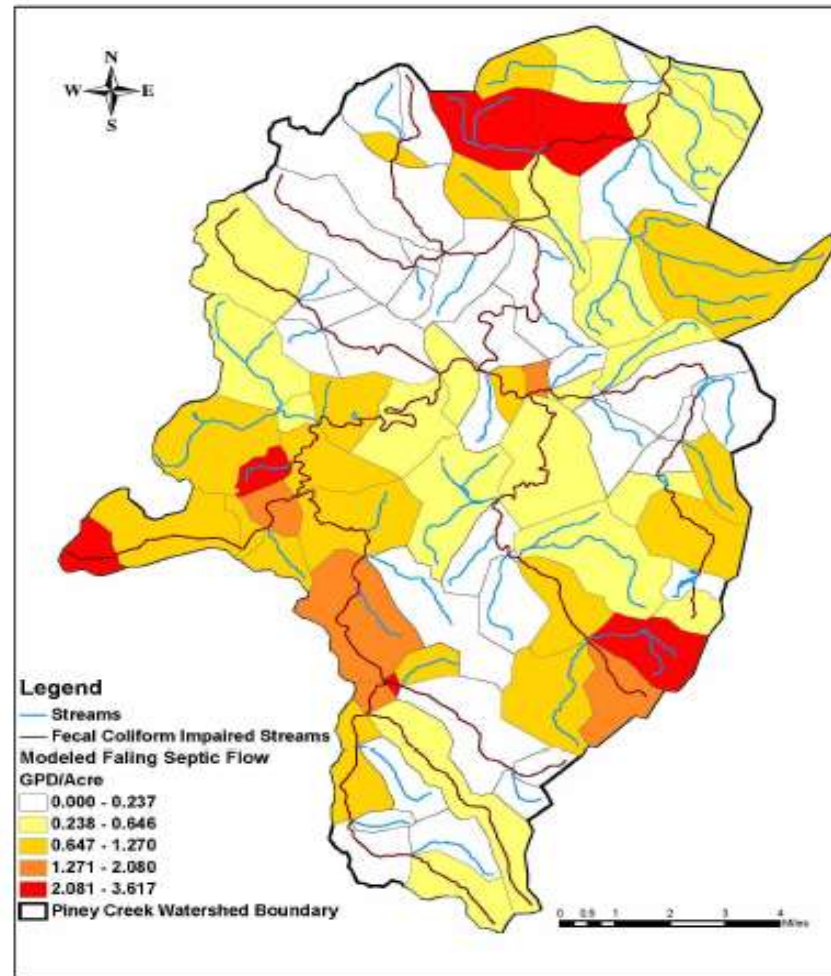


Figure 3-1. Failing Septic System Flows in the Piney Creek Watershed

A Watershed Approach Can Facilitate Information Sharing

- A comprehensive management approach at the watershed level can streamline the information retrieval process for water quality data.
- State of Washington created Washington Watershed Integration Council in 1996. Helps integrate the activities of 10 state departments around a unified, watershed approach.
- In lieu of a formal management plan watershed groups may consider developing a information clearinghouse for all available data.

Save our Saluda Example

							
Who to Call List for the Upper Saluda Watershed							
City	Illicit Discharge	Sewer Overflow	Chemical Spill	Fish Kill	Excessive Sediment Runoff	Dumping	Etc. #
Greenville County							
City of Greenville	Water Pollution Hotline (864)367-4554	Public Works (864)367-4345	Greenville Fire Department (864)367-4445	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Water Pollution Hotline (864)367-4554	Greenville Sheriff's Dept. Environmental Enforcement (864)367-4858	24-hr DHEC Emergency/Response 1-888-481-0125
City of Mauldin	Greenville County Land Development Division (864)367-4610	Public Works (864)389-8904	Mauldin Fire Department (864)388-5094	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Greenville County Land Development Division (864)367-4610	Greenville Sheriff's Dept. Environmental Enforcement (864)367-4858	24-hr DHEC Emergency/Response 1-888-481-0125
City of Simpsonville	Greenville County Land Development Division (864)367-4610	Public Works (864)367-9531	Simpsonville Fire Department (864)367-9547	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Greenville County Land Development Division (864)367-4610	Greenville Sheriff's Dept. Environmental Enforcement (864)367-4858	24-hr DHEC Emergency/Response 1-888-481-0125
City of Fountain Inn	Greenville County Land Development Division (864)367-4610	Public Works (864)309-3334	Fountain Inn Fire Department (864)362-0010	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Greenville County Land Development Division (864)367-4610	Greenville Sheriff's Dept. Environmental Enforcement (864)367-4858	24-hr DHEC Emergency/Response 1-888-481-0125
City of Travelers Rest	Greenville County Land Development Division (864)367-4610	Public Works (864)384-9029	Travelers Rest Fire Dept. (864)384-5536	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Greenville County Land Development Division (864)367-4610	Greenville Sheriff's Dept. Environmental Enforcement (864)367-4858	24-hr DHEC Emergency/Response 1-888-481-0125
Other	Greenville County Land Development Division (864)367-4610	Renewable Water Resources (864)399-4000	Local Fire Department: 24-hr DHEC emergency Response: 888-481-0125	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Greenville County Land Development Division (864)367-4610	Greenville Sheriff's Dept. Environmental Enforcement (864)367-4858	24-hr DHEC Emergency/Response 1-888-481-0125
Pickens County							
City of Easley	Stormwater Hotline (864)855-7900	Easley Utilities (864)859-4013	Easley Fire Department (864)859-8950	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Stormwater Hotline (864)855-7900	Stormwater Hotline (864)855-7900	24-hr DHEC Emergency/Response 1-888-481-0125
Other	Pickens Stormwater Office (864)898-5789	Pickens Stormwater Office (864)898-5789	Local Fire Department: 24-hr DHEC emergency Response: 888-481-0125	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Pickens Stormwater Office (864)898-5789	Pickens County Sheriff's Office (864)898-5500	24-hr DHEC Emergency/Response 1-888-481-0125
Anderson County							
City of Belton	Utilities Department (864)338-0058 and Anderson County Stormwater Management (864)338-0058	Utilities Department (864)338-0058	Belton Fire Department (864)338-7048	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Utilities Department (864)338-0058 and Anderson County Stormwater Management (864)338-0058	Belton Police Department (864)338-8450	24-hr DHEC Emergency/Response 1-888-481-0125
Town of West Porter	Stormwater Management (864)320-4444	Water/Sewer Dept. (864)347-6297	Local Fire Department: 24-hr DHEC emergency Response: 888-481-0125	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Stormwater Management (864)320-4444	Environmentals Enforcement (864)320-1001	24-hr DHEC Emergency/Response 1-888-481-0125
Town of Williamston	Stormwater Management (864)320-4444	Wastewater (864)320-4023	Williamston Fire Department (864)347-4317	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Stormwater Management (864)320-4444	Environmentals Enforcement (864)320-1001	24-hr DHEC Emergency/Response 1-888-481-0125
Town of Home Path	Customer Service (864)320-2466	Water/Sewer Department (864)320-2466	Home Path Fire Department (864)320-2976	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Customer Service (864)320-2466	Customer Service (864)320-2466	24-hr DHEC Emergency/Response 1-888-481-0125
Other	Stormwater Management (864)320-4444	Wastewater (864)320-4023	Local Fire Department: 24-hr DHEC emergency Response: 888-481-0125	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Stormwater Management (864)320-4444	Environmentals Enforcement (864)320-1001	24-hr DHEC Emergency/Response 1-888-481-0125
Laurens County							
City of Laurens	Laurens County Water and Sewer Commission (864)382-3250	Laurens County Water Commission (864)382-3250	Laurens Fire Department (864)384-3312	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Building and Zoning (864)384-2613	Laurens Police Department (864)384-3532	24-hr DHEC Emergency/Response 1-888-481-0125
City of Fountain Inn (in Laurens)	Laurens County Water and Sewer Commission (864)382-3250	Public Works (864)309-3334	Fountain Inn Fire Department (864)382-0010	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Laurens County Public Works (864)384-6812	Laurens County Sheriff's Office (864)384-2523	24-hr DHEC Emergency/Response 1-888-481-0125
Town of Gray Court	Laurens County Water and Sewer Commission (864)382-3250	Laurens County Water and Sewer Commission (864)382-3250	Laurens County Fire Dept. (864)384-4547	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Laurens County Public Works (864)384-6812	Laurens County Sheriff's Office (864)384-2523	24-hr DHEC Emergency/Response 1-888-481-0125
Other	Laurens County Water and Sewer Commission (864)382-3250	Laurens County Water and Sewer Commission (864)382-3250	Laurens County Fire Dept. (864)384-4547	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Laurens County Public Works (864)384-6812	Laurens County Sheriff's Office (864)384-2523	24-hr DHEC Emergency/Response 1-888-481-0125
Abbeville County							
Other	Public Works (864)346-8473	Public Works (864)346-8473	Abbeville County Fire Department (864)346-6444	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	Planning and Zoning (864)366-2400	Sheriff's Office (864)346-600	24-hr DHEC Emergency/Response 1-888-481-0125
Greenwood County							
Other	City/County Planning Department (864)342-8636	Greenwood Metropolitan Sewer District (864)341-8000	Greenwood County Emergency Services (864)341-8683	24-hr DHEC emergency Response: 888-481-0125 and DENR Fisheries (864)854-6346	City/County Planning Department (864)342-8636	Greenwood County Sheriff's Department (864)342-8600	24-hr DHEC Emergency/Response 1-888-481-0125

Blackfoot Challenge

- The Blackfoot River Watershed is 1.5 million acres in size and straddles four counties: Lewis and Clark, Powell, Missoula and Granite.
- There are around 8,100 people and 2,500 households in the basin. Less than one person per square mile across entire watershed.
- The Blackfoot Challenge was established by the US Fish and Wildlife Service and Trout Unlimited.



Unique Qualities of Blackfoot Challenge

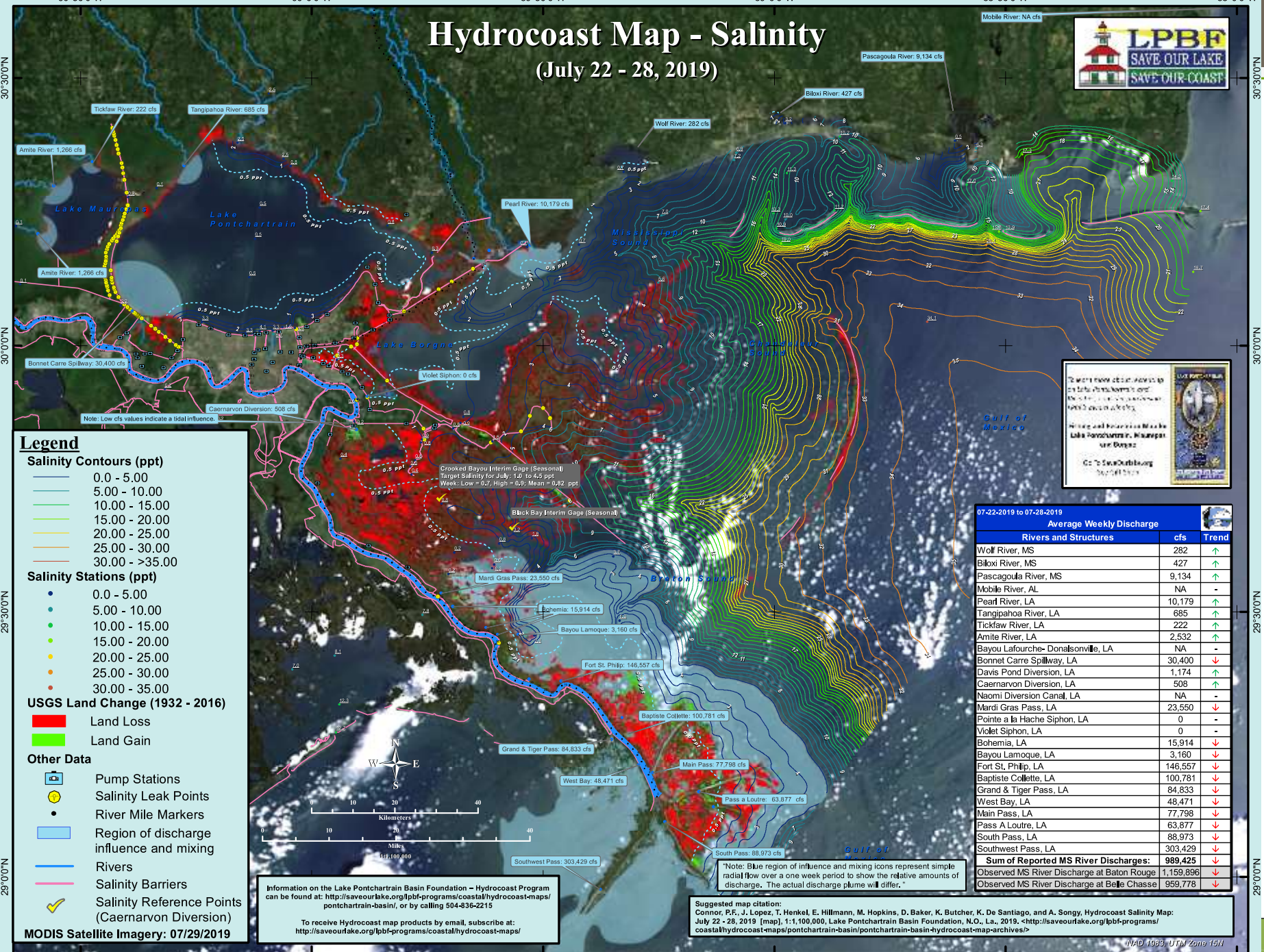
- Group consists of over 100 ranchers and farmers and 27 federal and state agencies and nongovernmental partners.
- Unique example of how collaborative engagement at the watershed level can improve water quality standards.
- Organization provides technical assistance for noxious weed control and best management practices for cattle that protect riparian corridors.

Lake Pontchartrain Basin Foundation

- Foundation formed in 1989 to improve water quality within Lake Pontchartrain watershed.
- In 1990 organization was able to ban dredging of Rangia clam shells within the lake.
- Organization conducts weekly water sampling at 10 recreational sites, another 10 sites are sampled monthly.
- Organization developed program to remove derelict crab traps within basin.

Hydrocoast Map - Salinity

(July 22 - 28, 2019)



Legend

Salinity Contours (ppt)

- 0.0 - 5.00
- 5.00 - 10.00
- 10.00 - 15.00
- 15.00 - 20.00
- 20.00 - 25.00
- 25.00 - 30.00
- 30.00 - >35.00

Salinity Stations (ppt)

- 0.0 - 5.00
- 5.00 - 10.00
- 10.00 - 15.00
- 15.00 - 20.00
- 20.00 - 25.00
- 25.00 - 30.00
- 30.00 - 35.00

USGS Land Change (1932 - 2016)

- Land Loss
- Land Gain

Other Data

- Pump Stations
- Salinity Leak Points
- River Mile Markers
- Region of discharge influence and mixing
- Rivers
- Salinity Barriers
- Salinity Reference Points (Caernarvon Diversion)

MODIS Satellite Imagery: 07/29/2019

07-22-2019 to 07-28-2019

Average Weekly Discharge		
Rivers and Structures	cfs	Trend
Wolf River, MS	282	↑
Biloxi River, MS	427	↑
Pascagoula River, MS	9,134	↑
Mobile River, AL	NA	-
Pearl River, LA	10,179	↑
Tangipahoa River, LA	685	↑
Tickfaw River, LA	222	↑
Amite River, LA	2,532	↑
Bayou Lafourche- Donalsonville, LA	NA	-
Bonnet Carre Spillway, LA	30,400	↓
Davis Pond Diversion, LA	1,174	↑
Caernarvon Diversion, LA	508	↑
Naomi Diversion Canal, LA	NA	-
Mardi Gras Pass, LA	23,550	↓
Pointe a la Hache Siphon, LA	0	-
Violet Siphon, LA	0	-
Bohemia, LA	15,914	↓
Bayou Lamoque, LA	3,160	↓
Fort St. Philip, LA	146,557	↓
Baptiste Collette, LA	100,781	↓
Grand & Tiger Pass, LA	84,833	↓
West Bay, LA	48,471	↓
Main Pass, LA	77,798	↓
Pass a Loure, LA	63,877	↓
South Pass, LA	88,973	↓
Southwest Pass, LA	303,429	↓
Sum of Reported MS River Discharges:	989,425	↓
Observed MS River Discharge at Baton Rouge	1,159,896	↓
Observed MS River Discharge at Belle Chasse	959,778	↓

Information on the Lake Pontchartrain Basin Foundation - Hydrocoast Program can be found at: <http://saveourlake.org/lpbf-programs/coastal/hydrocoast-maps/pontchartrain-basin/>, or by calling 504-836-2215

To receive Hydrocoast map products by email, subscribe at: <http://saveourlake.org/lpbf-programs/coastal/hydrocoast-maps/>

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 Connor, P.F., J. Lopez, T. Henkel, E. Hillmann, M. Hopkins, D. Baker, K. Butcher, K. De Santiago, and A. Songy, Hydrocoast Salinity Map: July 22 - 28, 2019 [map], 1:1,100,000, Lake Pontchartrain Basin Foundation, N.O., La., 2019. <<http://saveourlake.org/lpbf-programs/coastal/hydrocoast-maps/pontchartrain-basin/pontchartrain-basin-hydrocoast-map-archives/>>

Catskill Watershed Corporation

- Formed in 1997 by the New York City Watershed MOA.
- Homeowners within watershed can receive funding to repair failing septic tanks.
- Farmers can also receive reimbursements to build fences to keep livestock away from streams.



Impacts of Organization

- Catskill Watershed Corporation is a local development program meaning that the organization runs economic development programs in addition to environmental programs.
- Since 2017 the organization has repaired over 5,000 septic systems.
- Organization provides low interest loans to small businesses within the watershed.
- New York City, in partnership with the corporation, has acquired about 8,000 acres per year for conservation purposes.

Agriculture Demonstration Site

- Save our Saluda, created a BMP site for floodplain croplands.
- New grass swale installed to filter agricultural runoff on way to river.
- Cover crops were planted after harvest to hold soil in place.
- 1,500 foot riparian buffer planted along Saluda River tributary.



Final Thoughts

- Rural communities should cultivate new partnerships to tackle water quality challenges. Federal agencies and larger municipalities within a watershed could be tapped for financial resources and expertise.
- Septic tank failure can be a major concern in rural watersheds. Many watershed groups offer technical or financial assistance to aid with septic tank repair.
- Nitrates from farmland is another driver of impaired water quality. Rural communities should consider riparian buffers and other BMPs in areas with a strong agrarian presence.
- Better water quality starts with good monitoring!

Contact Information

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