

WHITE RIVER WATERKEEPER®

Protecting the public health and natural resources of the White River watershed through advocacy, education, and research.

Jessie J. Green

Executive Director & Waterkeeper



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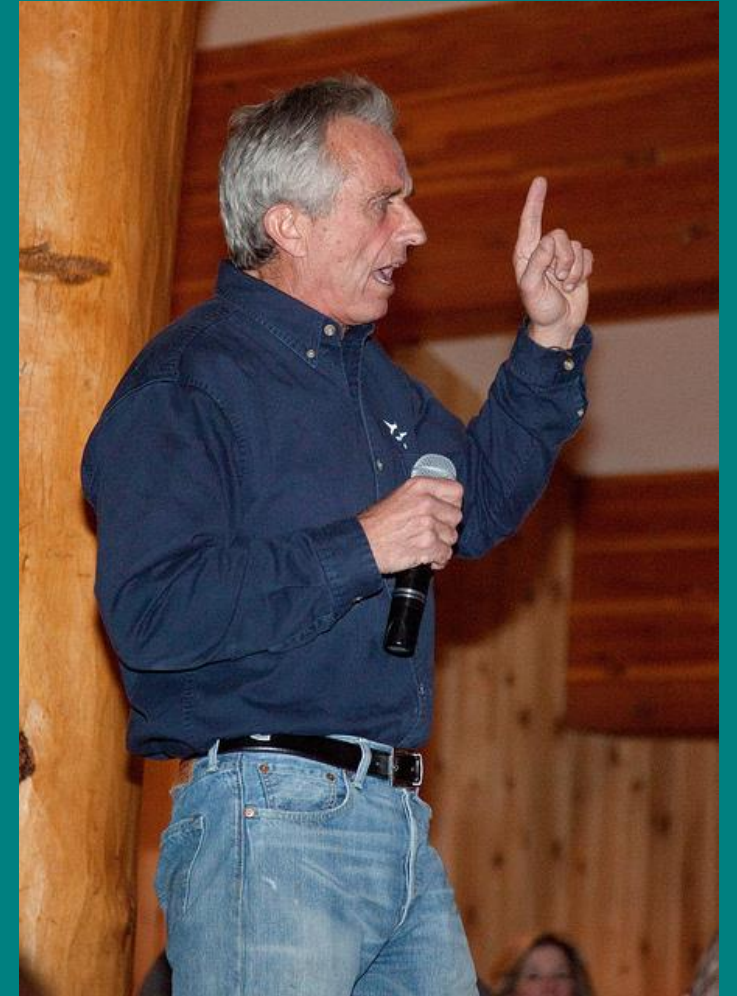
Website: www.whiteriverwaterkeeper.org



What's a Waterkeeper?

HISTORY

- 1966 – Hudson River Fisherman's Association
- 1983 – Hudson Riverkeeper
- 1999 – Waterkeeper Alliance
- 2017 – >300 Waterkeepers worldwide

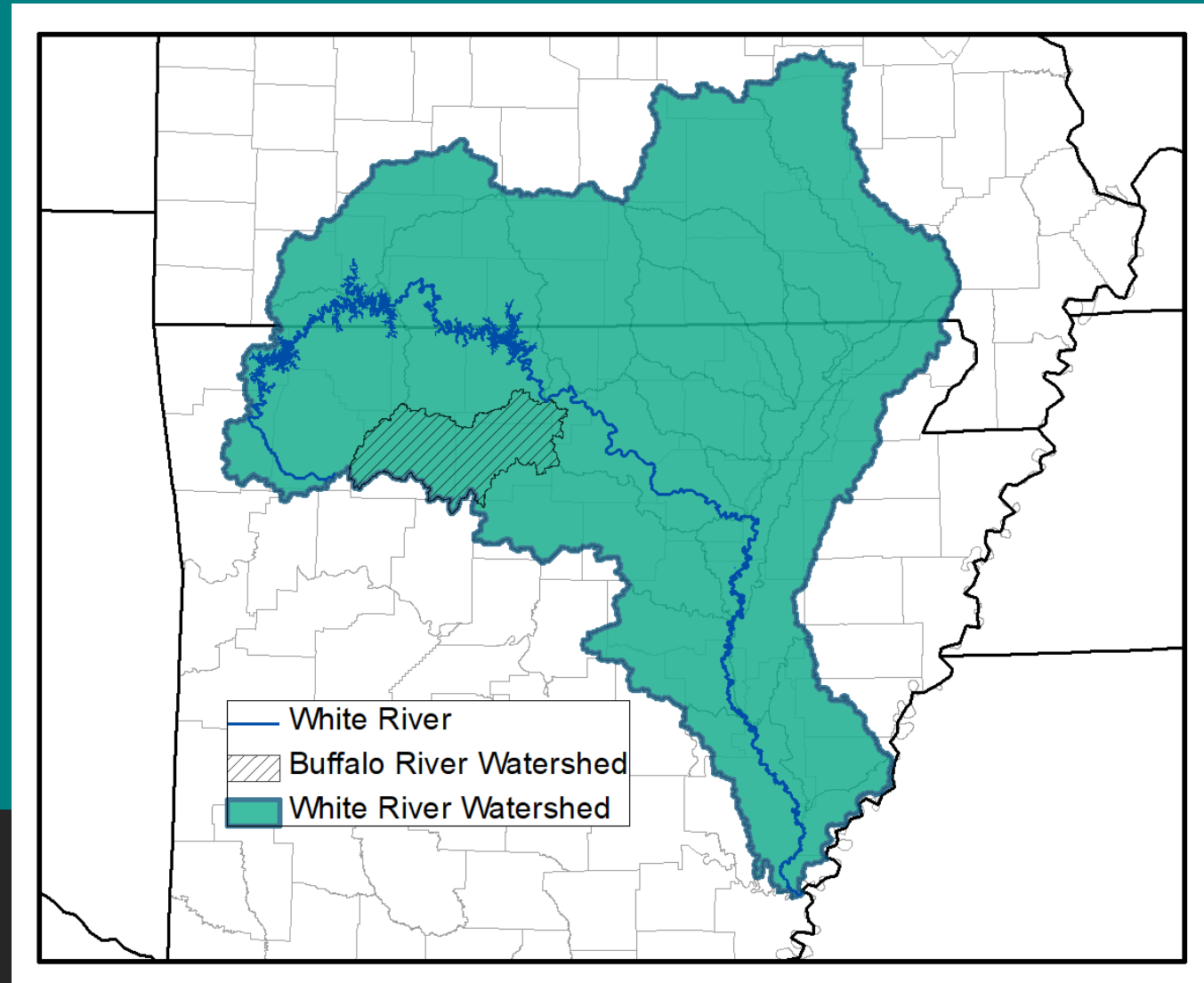


What's a Waterkeeper?

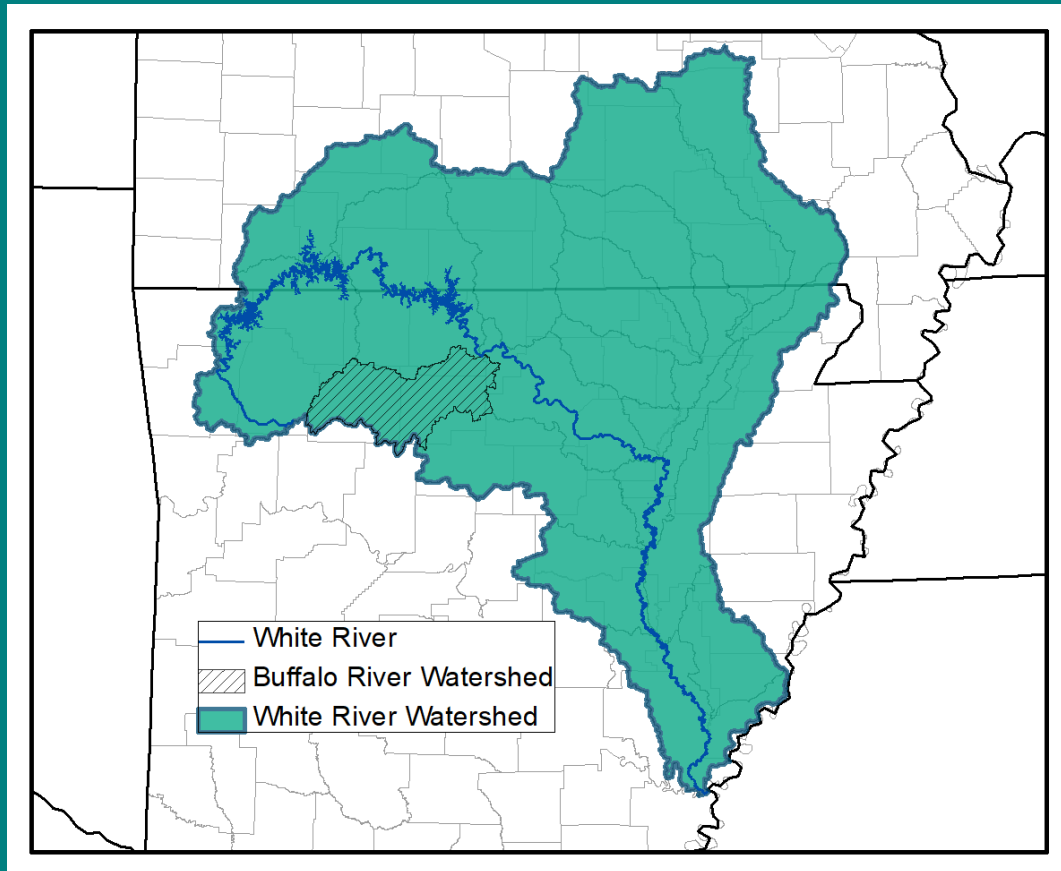
- Not an “environmentalist”
- Defending the fundamental human right to “drinkable, fishable, and swimmable waters”
- Clean Water is our sole focus
- Non-partisan

ADVOCATE. EDUCATE. INVESTIGATE.

Where We Work



Where We Work



White River Watershed

- 27,799 sq. miles
- > 1,000 stream miles designated as Outstanding Resource Waters
 - Extraordinary Resource Waters
 - Ecologically Sensitive Waterbodies
 - Natural and Scenic Waterways
- Diverse land-use

Upcoming Buffalo River Projects

- Swim Guide Program
- Microbial Source Tracking
- Septic Tank Remediation and Education
- Image Database
- Pollution Hotline

Issues with Karst

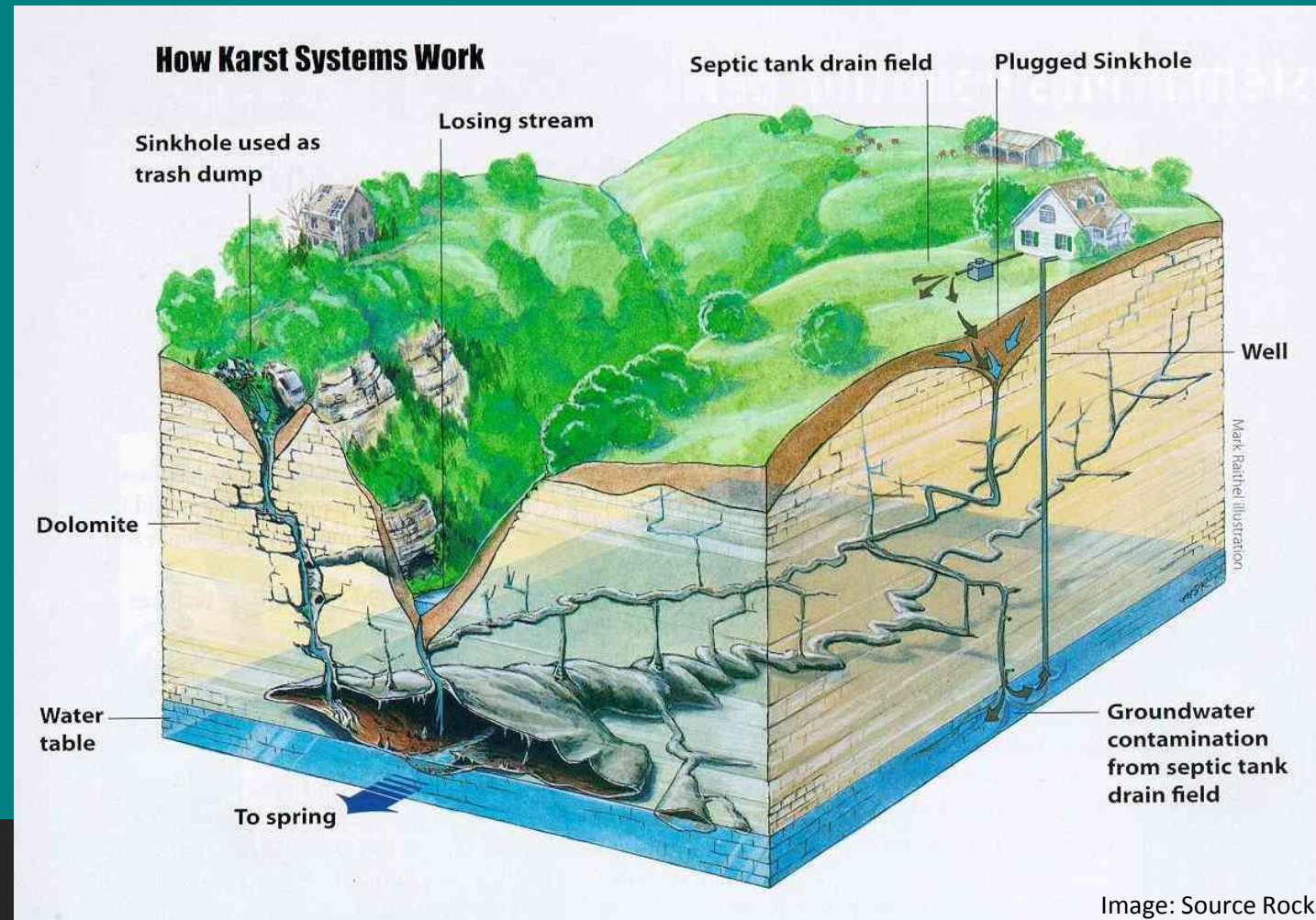


Image: Source Rocks

Issues with Karst

V. Brahana, J. Nix, C. Kuyper, T. Turk, F. Usrey

Geochemical Processes and Controls Affecting Water Quality in a Karst Creek near Mt. Juliet, Tennessee

V. Brahana^{1*}, J. Nix², C. Kuyper³, T. Turk⁴, F. Usrey⁵,
R. Quick⁹, B. Thompson¹⁰

¹U.S. Geological Survey (Research Scientist Emeritus) and Department of Geology, University of Arkansas, Fayetteville

²Department of Chemistry (Emeritus Distinguished Professor)

³Department of Chemistry Water Lab, Ouachita University

⁴National Oceanographic and Atmospheric Administration, Research Center for Environmental and Estuarine Science

⁵National Park System, Buffalo National River, 40 miles north of Fayetteville

⁶HC 73 Box 182 A, Marble Hill, TN

⁷Department of Karstology, University of Tennessee

⁸Director, University of Arkansas Stable Isotope Laboratory

⁹Woodward Clyde Consulting Group (retired);

¹⁰Tyson Foods, Inc. (Retired),

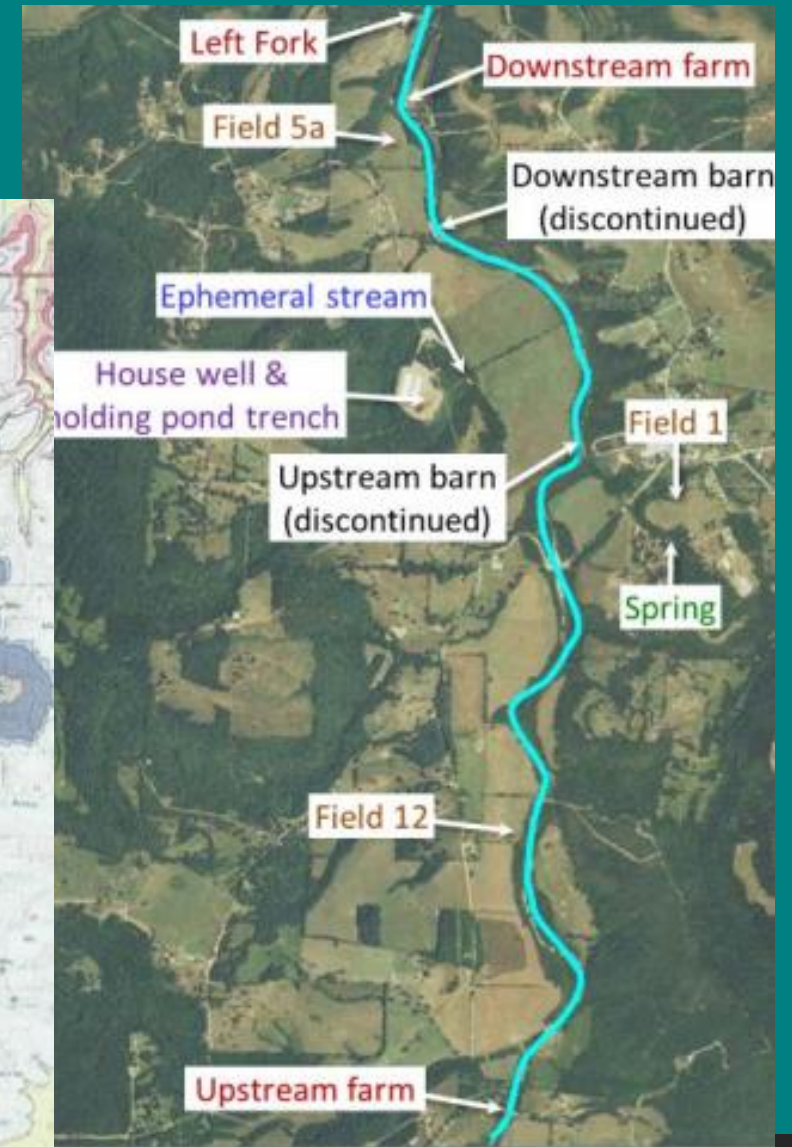
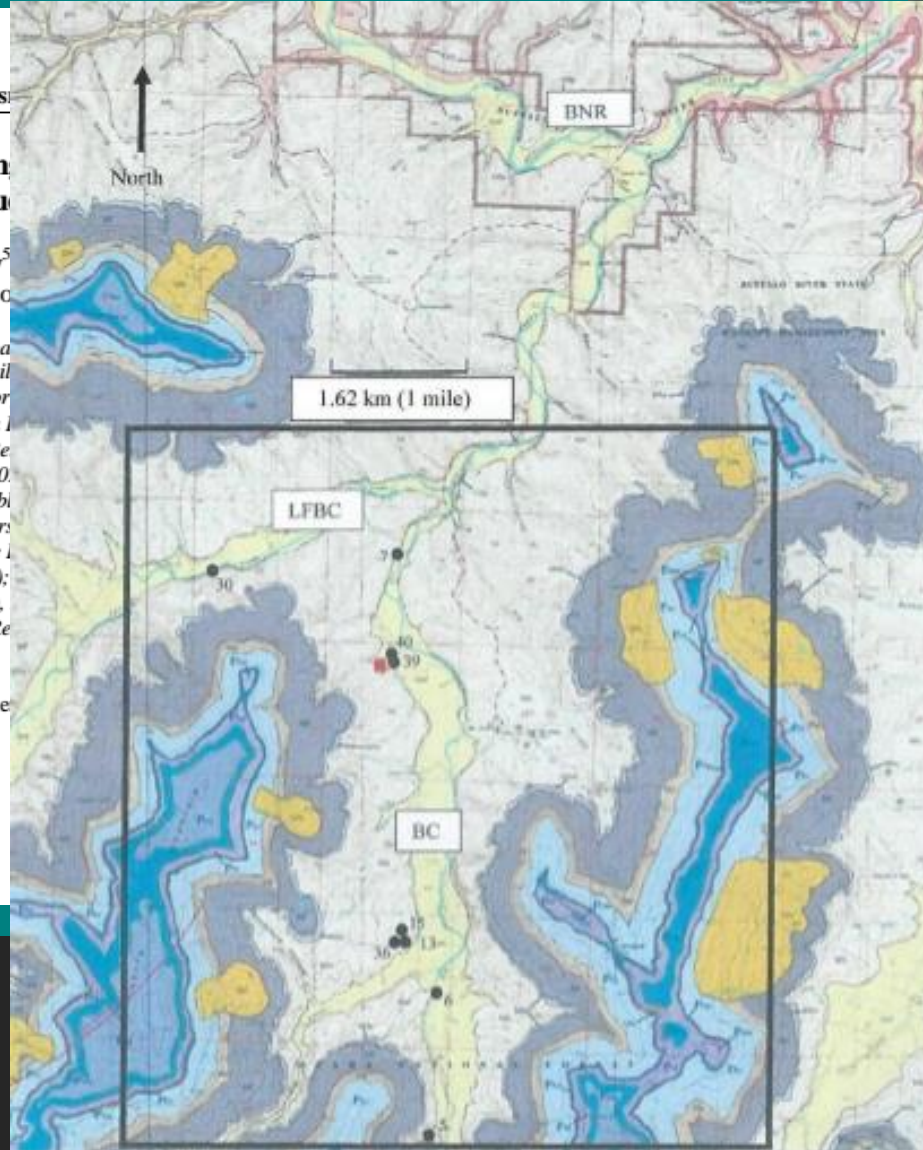
¹¹Department of Biological and Agricultural Engineering (Retired)

*Correspondence: brahana@uark.edu

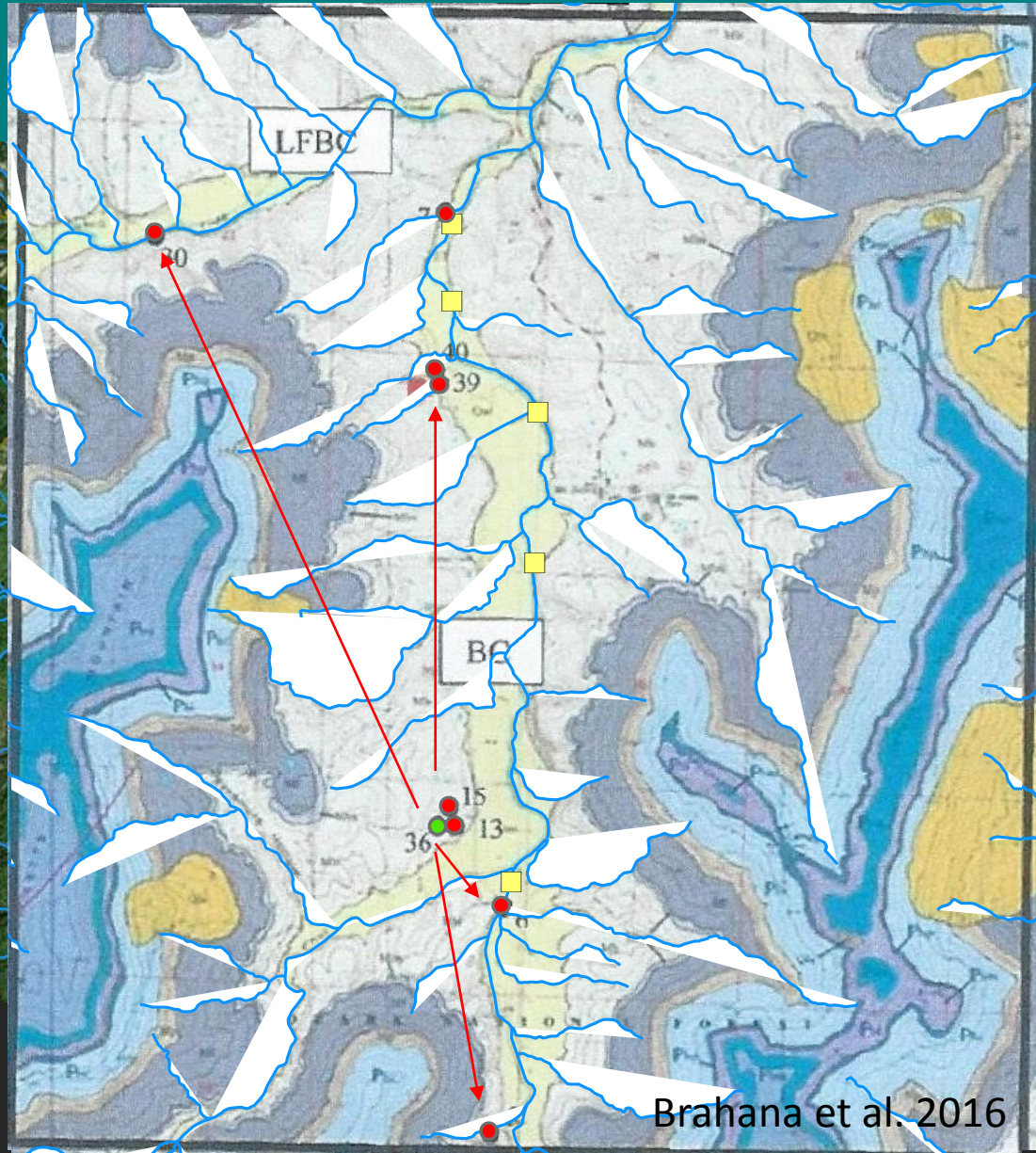
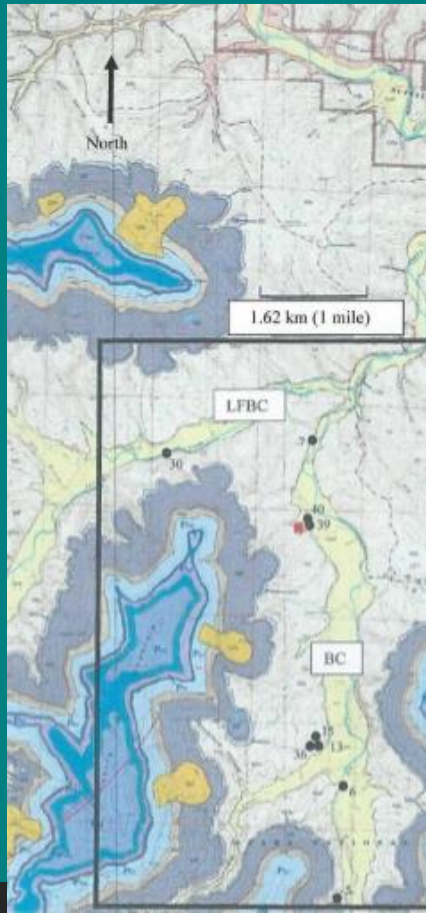
Running Title: Geochemical Processes and Controls Affecting Water Quality in a Karst Creek near Mt. Juliet, Tennessee

Abstract

Karst regions typically are considered to be vulnerable with respect to various land-use activities, owing to the intimate association of surface and groundwater and lack of contaminant attenuation



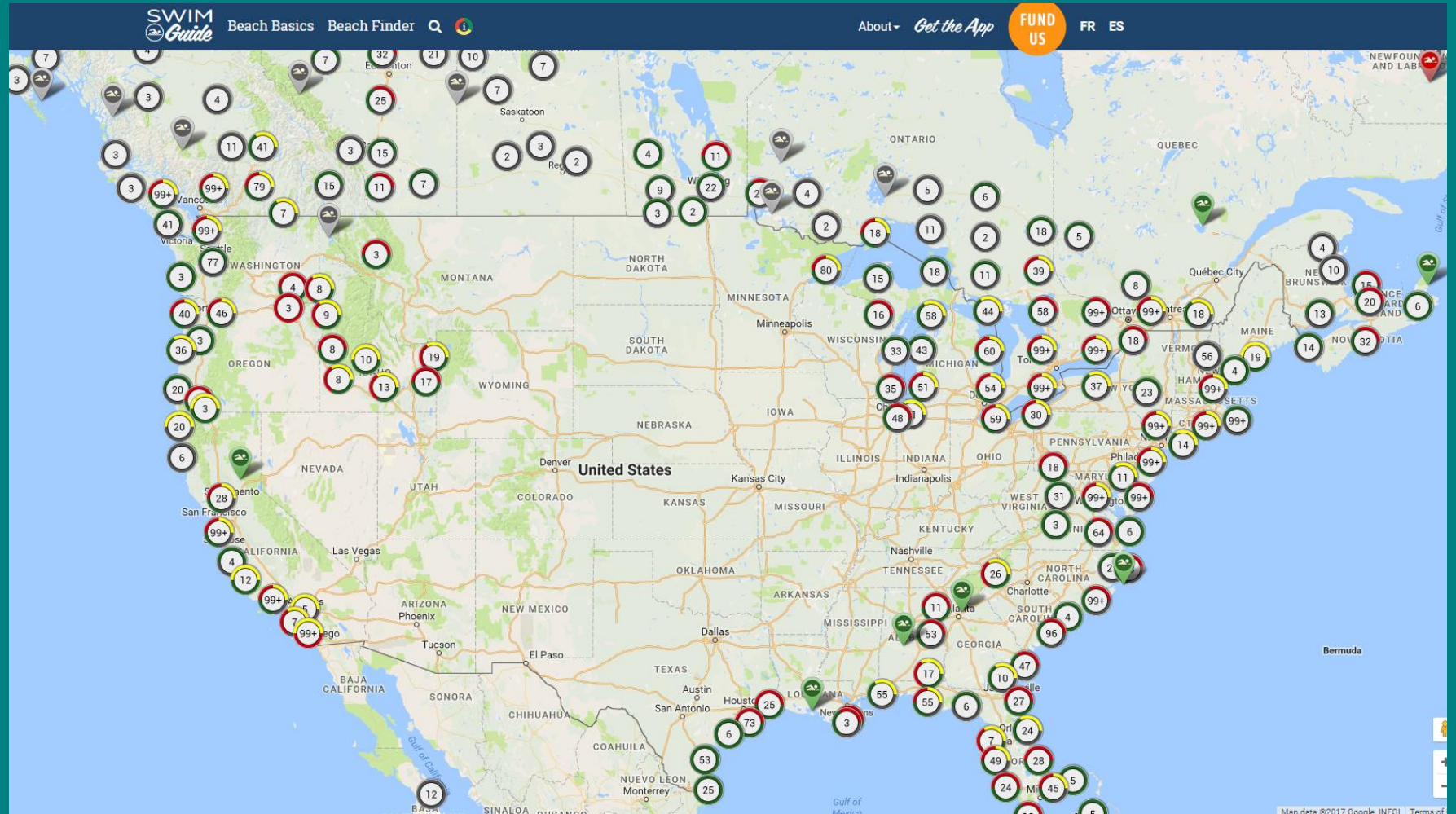
Issues with Karst



SWIM Guide



www.theswimguide.org



WHITE RIVER
WATERKEEPER®


WATERKEEPER ALLIANCE
MEMBER

SWIM Guide

- Detailed information on
 - Sampling location
 - Current Status
 - Monitoring Frequency
 - Source Information
 - Water Quality Standards
 - Water Quality Trends

WATER QUALITY



Failed to meet water quality standards

Current Status

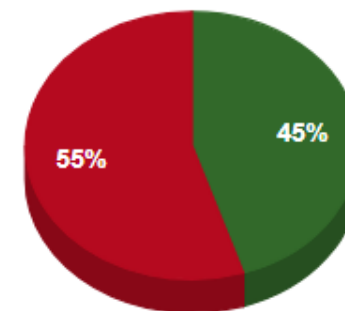
This status is based on the latest sample, taken on July 19th, 2017. Cahaba Riverkeeper updates the status of this beach as soon as test results become available. These results were posted to Swim Guide on July 21st, 2017 at 11:23 AM.

For water quality icon legend, click: 



WATER QUALITY GRAPH

2017





 Pass  Fail

CHART TYPE

Pie Bar

INTERVAL

Years

TIME PERIOD

2017

Water Quality Legend

Current Status

Historical Status

Special Status

We may manually set the status for a specific beach if we have concerns about the sampling protocol, if there is an emergency, if monitoring practices don't exist or have recently changed, or other reasons that render this site "special."



Green means the beach has historically excellent or pristine water quality, but there is no current data.



Red means the water at the site has water quality issues or there is an emergency.



Grey means there is no current water quality information, the beach is under construction, there has been an event that has rendered water quality information unreliable or unavailable.

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ata it displays the

SWIM



Guide

- Public Input on Sampling Locations
- Volunteer Training
- Jasper, AR - IDEXX
- **Buffalo River**
 - Kings River
 - War Eagle
 - Crooked Creek
- Weekly Monitoring
 - Sample Thursday – Report Friday



Who Can Help?

Louisiana Department of Health & Hospitals Beach Monitoring Program

Texas General Land Office

National Park Service, United States Geological Survey, and Chattahoochee Riverkeeper

Florida Department of Environmental Protection

Identify Sources of Fecal Pollution



MICROBIAL SOURCE TRACKING



Values, costs and rates generated in this program are for informational purposes. The costs do not represent quoted estimates. Please contact Source Molecular, info@sourcemolecular.com if you need an official price estimate.

Enter project details below: You can leave only one of the top 3 cells blank. The estimator will calculate the value you leave blank.		The estimator will calculate the value which you left blank. This is a ball park estimate of the your project cost.		Projects with more than 15 samples are eligible for a discount. If the project qualifies for a discount, the estimator will calculate the discounted price.	
Enter Project Details		Ball Park Project		Discount Eligible	
				At least 15% price reduction	
Budget		Project Cost	\$39,750.00	Discounted Project Cost	\$29,812.50
Sampling locations		10 Sampling locations	10		
Sampling events		5 Sampling events	5		
Tests per sample		3 Tests per sample	3		
Quantification (Yes/No)	Yes	Quantification	Yes		
		price per sample	\$795.00	Discounted Sample Price	\$596.25
		Price per test	\$265.00	Discounted Test Price	\$198.75
		Number of Samples	50		
		Cost per Site	\$3,975.00	Discounted Cost per Site	\$2,981.25
		Cost per Event	\$7,950.00	Discounted Cost per Event	\$5,962.50

MICROBIAL
SOURCE
TRACKING



- Limitations
 - -20°C Freezer
- Concurrent *E. coli* monitoring
- Weight of Evidence

SEPTIC TANK

remediation

- Following MST
- Public Benefits
 - Education
 - Pump-out
 - Repair
 - Replacement
- No (or low) Interest Loan Programs
- Ozark Water Watch & Missouri Department of Natural Resources
 - Assistance dependent on household income

Image Database

Big Creek, Newton Co.

Reg. 2.509 – “Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody.”

Photo credit: Carol Bitting

Image Database



OpenDataKit
magnifying human resources through technology

- Free and open-source set of tools
 - Build data collection form or survey
 - Multiple choice or short answer
 - Collect data on mobile device and send it to a server
 - Aggregate collected data on a server and extract it in useful formats.

POLLUTION HOTLINE

Advocate

- Participation in Stakeholder Workgroups
 - Antidegradation
 - Triennial Review of Reg. 2 Water Quality Standards



Arkansas Natural Resources Commission

Bruce Holland
Executive Director

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Asa Hutchinson
Governor

**Arkansas Natural Resources Commission's Development of the
Buffalo River Watershed Management Plan**

Thank You!

WHITE RIVER
WATERKEEPER®

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@WhiteRiverWaterkeeper

