COMMUNITY SCIENTIST EXPERIENCES RESEARCH

Jenna Walker and Madison Mitchell

February 6, 2025

The Meadows Center
for Water and the Environment
Texas State University

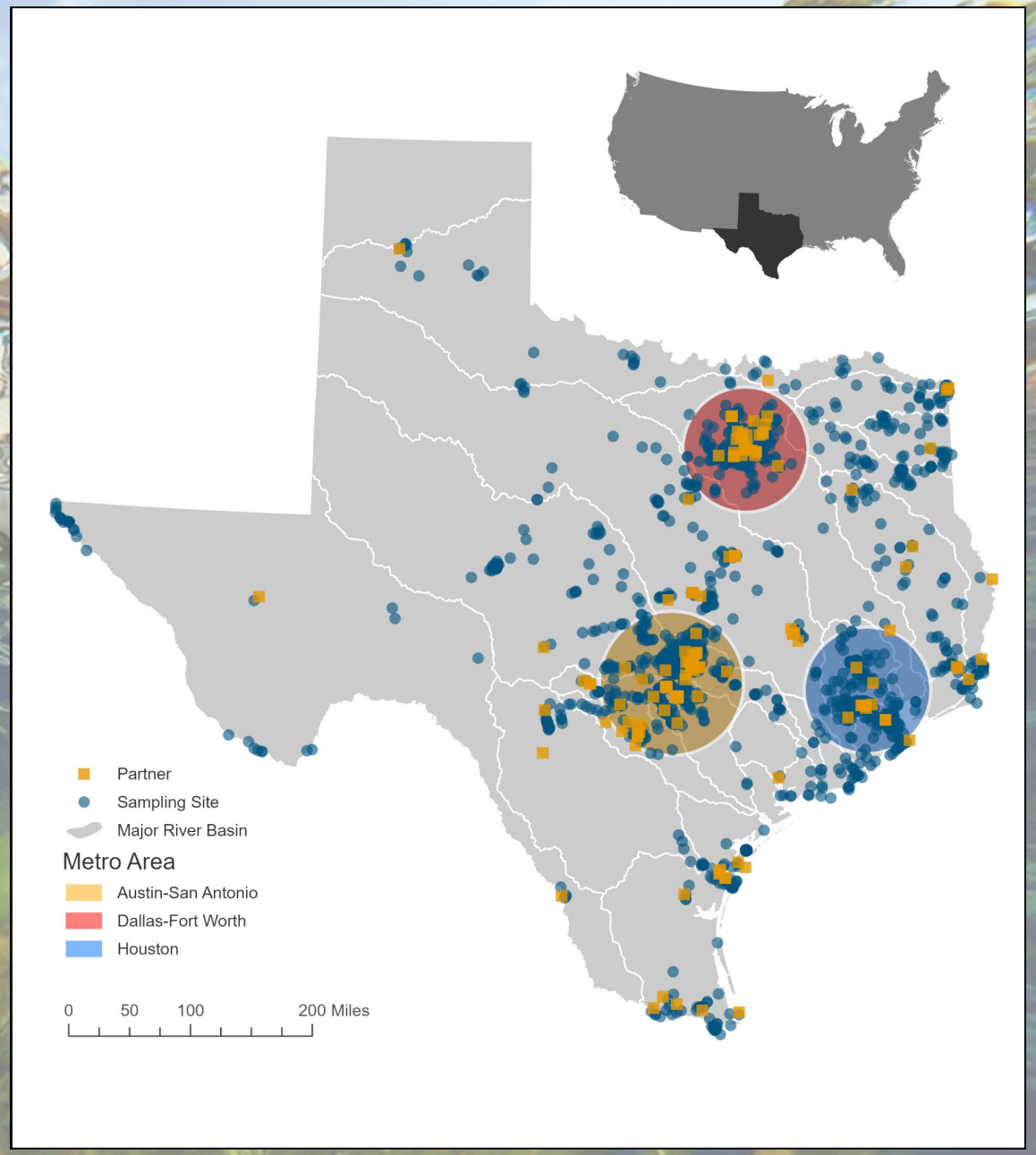
Texas Stream Team

Funding for the Texas Stream Team is provided in part by the United States Environmental Agency through the Texas Commission on Environmental Quality

BACKGROUND

- Qualitative Study – Exploring the Experiences of Texas Stream Team Community Scientists.

- To understand the motivations, experiences, and outcomes of being a water quality monitor in the Texas Stream Team program.



“ I felt braver to get my feet wet. How deep can I go? What do I find when I am down there?... [the experience] has increased my opportunity to do things I have wanted to do because it has made me braver to go do it. Even if I am by myself. ”

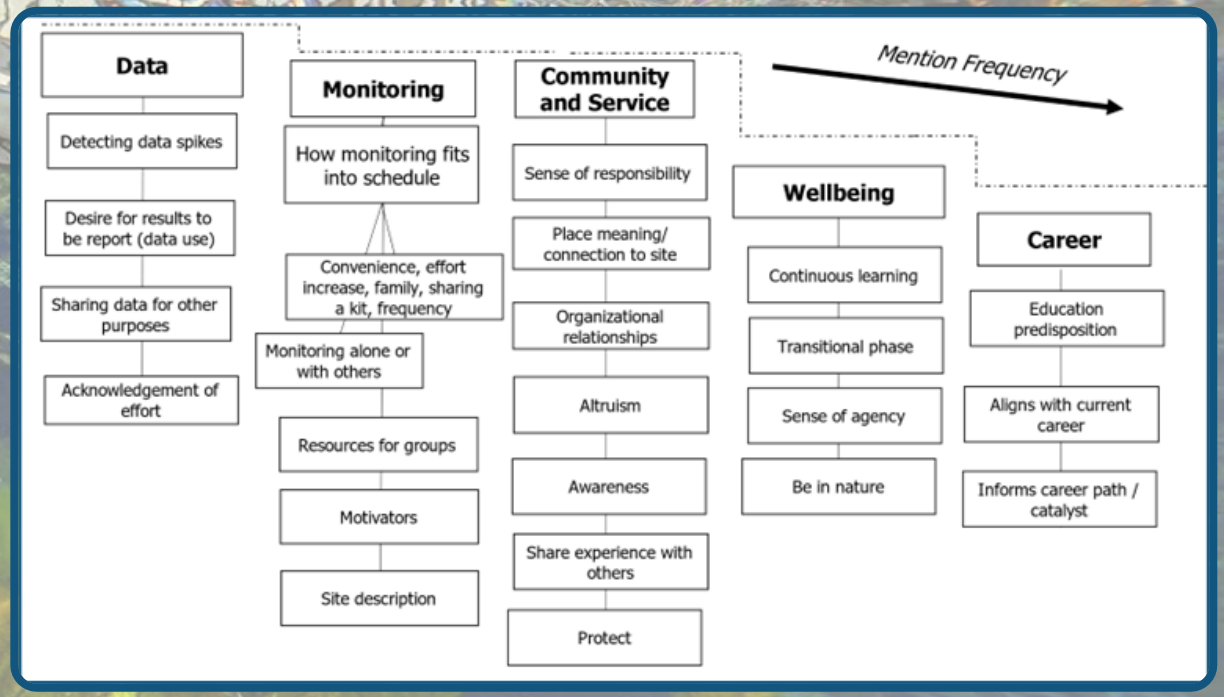
Texas Stream Team Community Scientist

RESEARCH METHODS

Data Collection – Surveys, Interviews

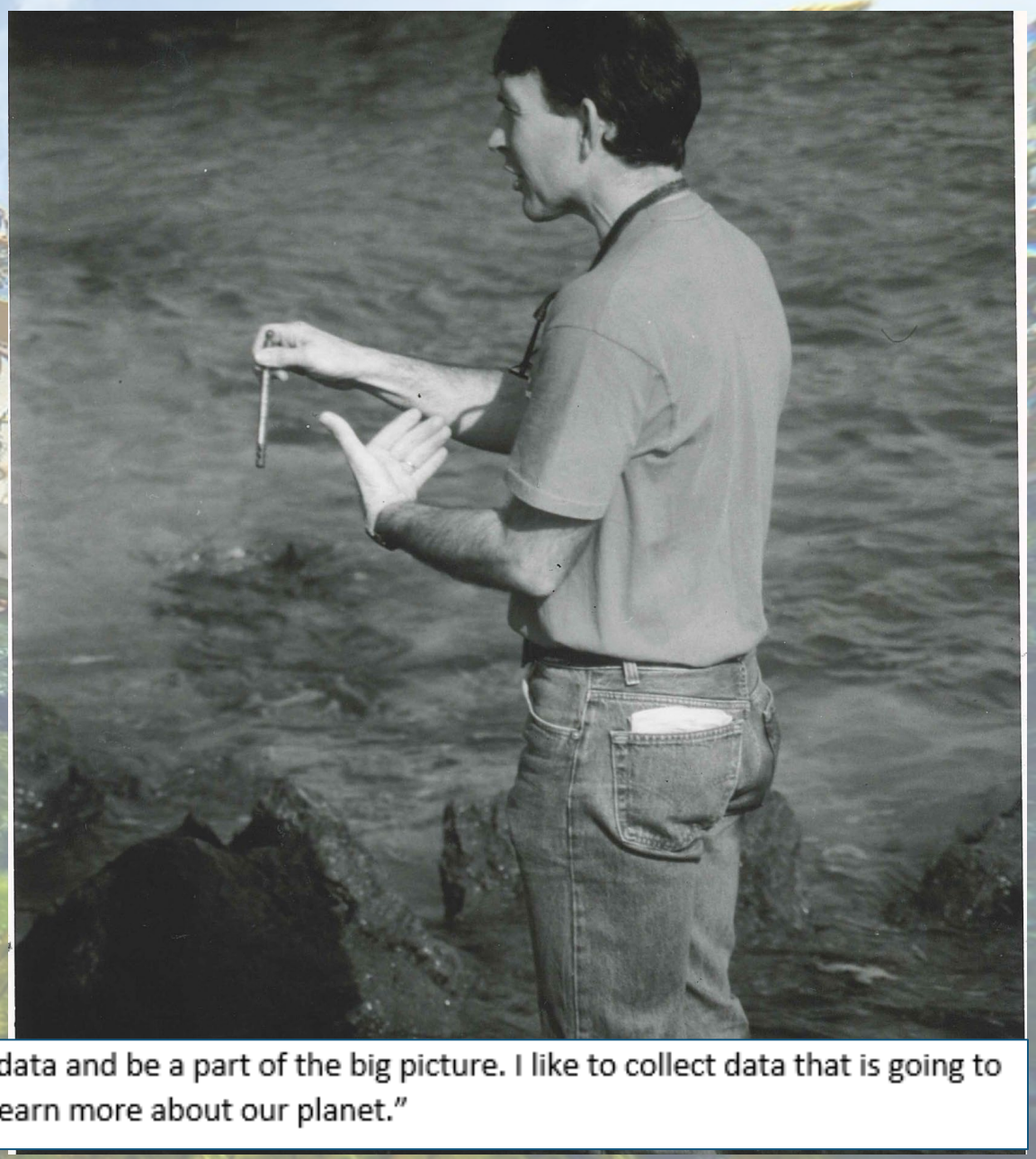
Key Topic	Program: Needs and Previous Findings	Broader Literature Connection
Pollution Event	• The program was initially created by the TCEQ to fill in data gaps around the state for professional monitoring and to better identify pollution events ○ Internal knowledge of occurrences, need empirical data regarding frequency and process	Citizen science can play a role in water-related pollution monitoring (Hyder et al. 2017; Mesing et al. 2020)
Data Use	• We know using data for science and sharing data are important to program participants (Lopez 2021) • Data are publicly available for download, and need empirical evidence of hHow they are data used for community advocacy and/or science? Do and if participants understand the value and impact of the data?	Data sharing builds community and promotes volunteer satisfaction/retention (Lopez 2021; Davis et al. 2020; Alender 2016; Roggenbuck at al. 2001)
Career Impacts	• We know that career-oriented is a motivation factor for program participation (Lopez 2021) • We do not yet know how participation in the program influences educational and career paths	"Career" is one of six in the Volunteer Functions Inventory (Clary et al. 1998). Career is a motivator for participation in other water quality monitoring participatory research programs (Alender 2016).
Monitoring (Experience)	• No formal study or mechanism for sharing experiences other than the open comment section on the water quality monitoring form • To gauge the experiences/challenges of volunteers ○ Do their experiences keep them involved? Are they building relationships with the environment and community?	Both positive and negative ecological findings during CS participation led to empowerment (Eichholtzer et al. 2024) Self-efficacy with science (Phillips et al., 2018) "Place values" including sense of place and place attachment (Ballard et al. 2024; Haywood et al. 2016) and nature-connectedness are constructs associated with CS participation in local, field-based programs (Eichholtzer et al. 2024; Butler et al. 2024)
Memories (Experiences)	• Long-term participants likely have unique memories of monitoring over the years • No understanding of the personal and emotional experiences of volunteers ○ What key memories/takeaways stand out to our monitors? ○ What resonates with the individual when prompted?	Connection to nature (Eichholtzer et al. 2024) and counteracting the "extinction of experience" (Ballard et al. 2024) Water quality monitoring of local streams enables "community connectedness and cooperation" (Ballard et al. 2024)

Data Analysis – Coding, Themes



RESULTS & THEMES

1. Working through Vulnerability
2. Forming Place Identity
3. An Infrastructure for Fostering Agency and Social Capital



"I like to go out and collect data and be a part of the big picture. I like to collect data that is going to help you know researchers learn more about our planet."

LESSONS LEARNED & FUTURE RESEARCH

Contact Information

Texas Stream Team
TxStreamTeam@txstate.edu
(512) 245-1346
www.TexasStreamTeam.org

PHOTO ARTIST CREDITS

Andrew Shirey

Jenya Mendelenko

The Meadows Center
for Water and the Environment

Texas Stream Team

JUNIOR PROGRAMS

Chelsea Bivens, Claudia Campos, and Bess Price

February 6, 2025

The Meadows Center
for Water and the Environment
Texas State University

Texas Stream Team

Funding for the Texas Stream Team is provided in part by the United States Environmental Agency through the Texas Commission on Environmental Quality

AGENDA

10:00 – 10:15	KICK-OFF
10:15 – 10:35	EXPERIENCES RESEARCH
10:35 – 11:00	JUNIOR PROGRAMS
11:00 – 11:15	BREAK
11:15 – 12:00	*E. COLI* / R-CARD UPDATES
12:00 – 1:00	OPTICAL BRIGTHENER LAUNCH
1:00 – 2:00	LUNCH / FIELD AUDTI SESSION RECAP
2:00 – 3:00	FIELD AUDIT SESSION*
3:00	ADJOURN

**The Field Audit Session will be required for trainers out of compliance (mandatory every two years) at the time of the meeting to continue leading trainings and certifying individuals.*

STUDENT LEADERSHIP IN ENVIRONMENTAL ACTION AWARD PROGRAM

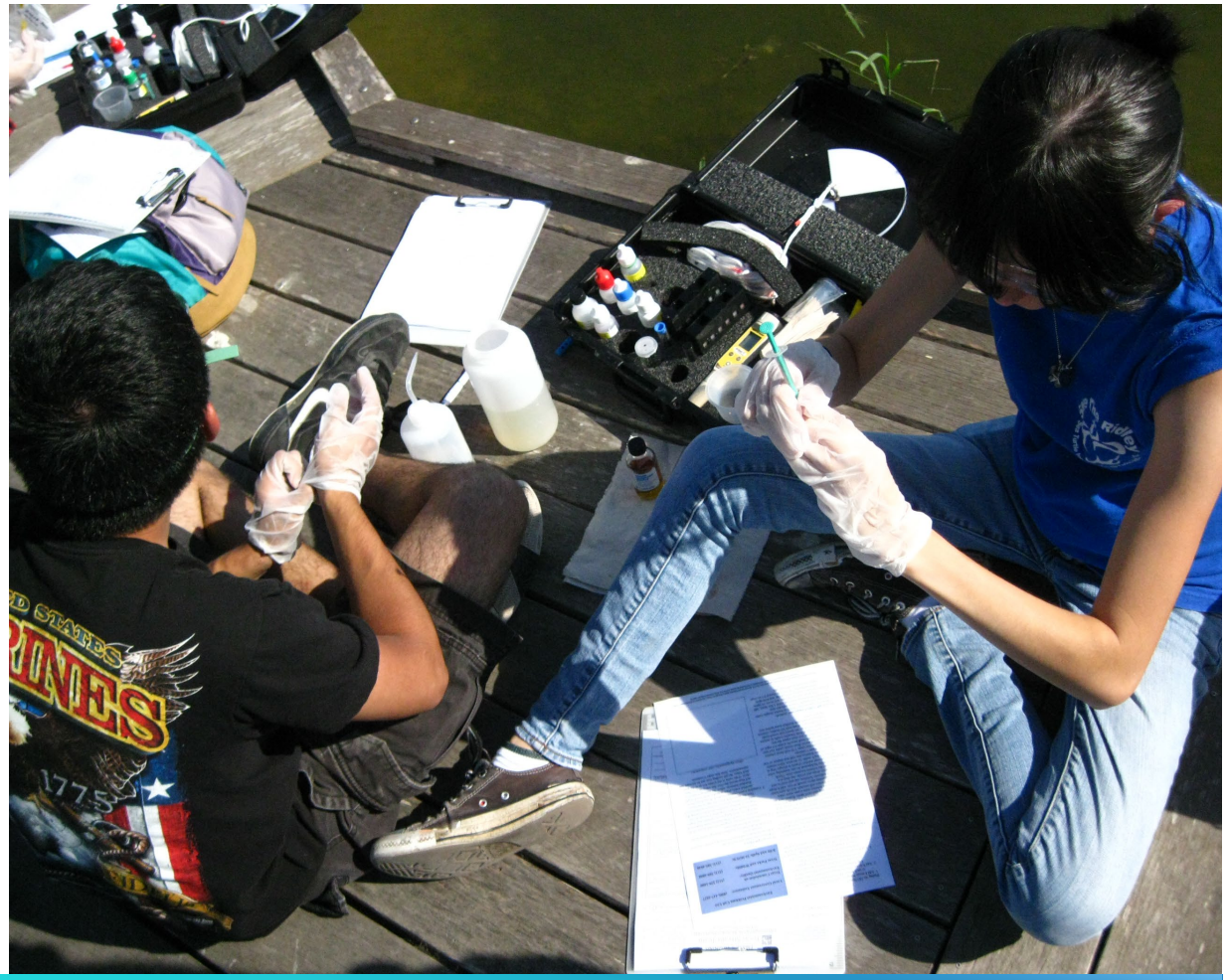
Student Leadership in Environmental Action (SLEA) Award Program

The purpose of this award program is to empower high school students to utilize their water quality monitoring skills to engage with environmental concerns within their community.

- Students will follow program guidelines to create a short presentation which they will submit to TST.

- Each school year, one student will be awarded the SLEA award.

Roll-out : 2025-2026 school year!



Student Leadership in Environmental Action (SLEA) Award Program

To participate, high school students must:

- Become certified in Standard Core protocols or link up with a community scientist mentor.
- Participate in a minimum of 3 monitoring events at their site.
- Identify an environmental challenge at their site and propose a solution to address this challenge.

Student Leadership in Environmental Action (SLEA) Award Program

Presentation requirements at a glance:

- An overview of their site conditions with a map showing its location.
- Identification of a problem, including the impact to environment and community implications.
- Description of how Texas Stream Team protocols were used.
- Contacts made within the community, if any.
- Proposed solution with action steps.
- Explanation of the community impact of the solution.
- Takeaways, lessons learned, and future implications.

Scoring Process

- Teacher or mentor provides the first round of scoring using the SLEA Project Rubric.
- Teacher or mentor must submit projects to TST by May 1st each school year.
- We will use the same rubric to score all project submissions.
- Winner will be announced during the second week of May!

	Exemplary 20-15 pts	Proficient 14-10 pts	Developing 9-5 pts	Needs Improvement 4-0 pts	Comments
Introduction/ Site Overview 20 points max	Thorough description of site, including several pictures and a detailed map. At least three monitoring events described.	Missing some detail about site location. Maps/images may not clearly represent site. May be missing detail of monitoring events.	Site description lacks detail. Images and maps are missing, or do not clearly identify the site. Missing monitoring events.	Site description, images, map, and monitoring events are poorly represented and/or missing from project.	
Identifying the Challenge 20 points max	Student is thoughtful in determining the challenge. Awareness of ecosystem and community impact is strongly evident.	Student determines a challenge but lacks a clear connection to ecosystem and community impacts.	Student identifies a challenge at their site but does not detail ecosystem and/or community impacts.	Student does not identify a clear challenge at their site and does not connect ecosystem and community impacts.	
Proposing a Solution 20 points max	The proposed solution has been thoroughly considered and the steps involved are detailed. Clear connection to community.	The proposed solution is thoughtful but lacks detail. Community groups have not been considered thoroughly.	The proposed solution is not practical and lacks a thoughtful connection to community groups.	The proposed solution is incomplete. Community groups have not been considered.	
Community Impact/ Takeaways 20 points max	Student thoroughly identifies project impacts and provides a meaningful reflection of the project, including future implications.	Student identifies project impacts and includes a thoughtful but brief reflection of takeaways and future implications.	Student's identification of project impact lacks depth. Student does not provide a thorough reflection of takeaways	Student does not clearly identify project impact. Student does not provide a description of takeaways.	
	Exemplary 10-9 pts	**Proficient 8-6 pts**	**Developing 5-3 pts**	**Needs Improvement 2-0 pts**	**Comments**
Resources Cited 10 points max	Works cited section contains virtually no errors. All sources were cited in this section.	Student documents most sources properly.	Citations contain some errors. Not all sources are cited.	Student does not acknowledge sources properly. Works Cited section may be missing on final project.	
Formatting Requirements 10 points max	Project is engaging, neat, and well formatted. Project is free of grammatical and spelling errors.	Project contains minimal errors. Text is mostly easy to read, and addition of graphics is sufficient.	Project is difficult to read and does not engage the viewer. Images are present, but not used effectively.	Errors are prominent throughout the project, and distracting. Use of design is not evident.	

Pilot Program:
The Dripping Springs High School Stream Team Club

- Let's hear from the program pioneer and community science trainer:

Chelsea Bivens!

JUNIOR MONITOR AMBASSADOR PROGRAM (JMAP)

- Youth ages 8-13 will now be able to assist a certified Community Scientist with monitoring and receive credit through a junior certification until they can attend a Texas Stream Team Community Scientist training event.

JMAP

Important notes:

- Parental / Guardian supervision remains a requirement; must be present for the entire duration of the monitoring event.
- Junior ambassador will never be fully responsible for a monitoring event by themselves and will always be under the close supervision of a certified community scientist.

JMAP

To participate, individuals must:

1. Connect with a certified community scientist in their community.
2. Attend at least 3 monitoring sessions with a certified community scientist.
3. Use the **JMAP Registration Form** to submit the completed **Junior Monitor Ambassador Enrollment Form** along with copies of the corresponding monitoring forms.

JMAP

Goal is to offer a pathway to integrate minors through a youth mentorship style program that can provide hands on experience in water quality monitoring while becoming familiar with the parameters tested, concepts, and how the health of local water bodies impact them and their communities.

BREAK

Contact Information

Texas Stream Team
TxStreamTeam@txstate.edu
(512) 245-1346
www.TexasStreamTeam.org

PHOTO ARTIST CREDITS

Andrew Shirey

Jenya Mendelenko

Madison Mitchell

The Meadows Center
for Water and the Environment

Texas Stream Team

BACTERIA MONITORING
R-CARD RESEARCH

2/6/2025

Aspen Navarro, M.S., CPM
Nicky Vermeersch, M.S.

The Meadows Center
for Water and the Environment
Texas State University

Texas Stream Team

Funding for this research was provided in part by the US EPA through the Texas Commission on Environmental Quality and the National Oceanic and Atmospheric Administration

PROGRAM OVERVIEW

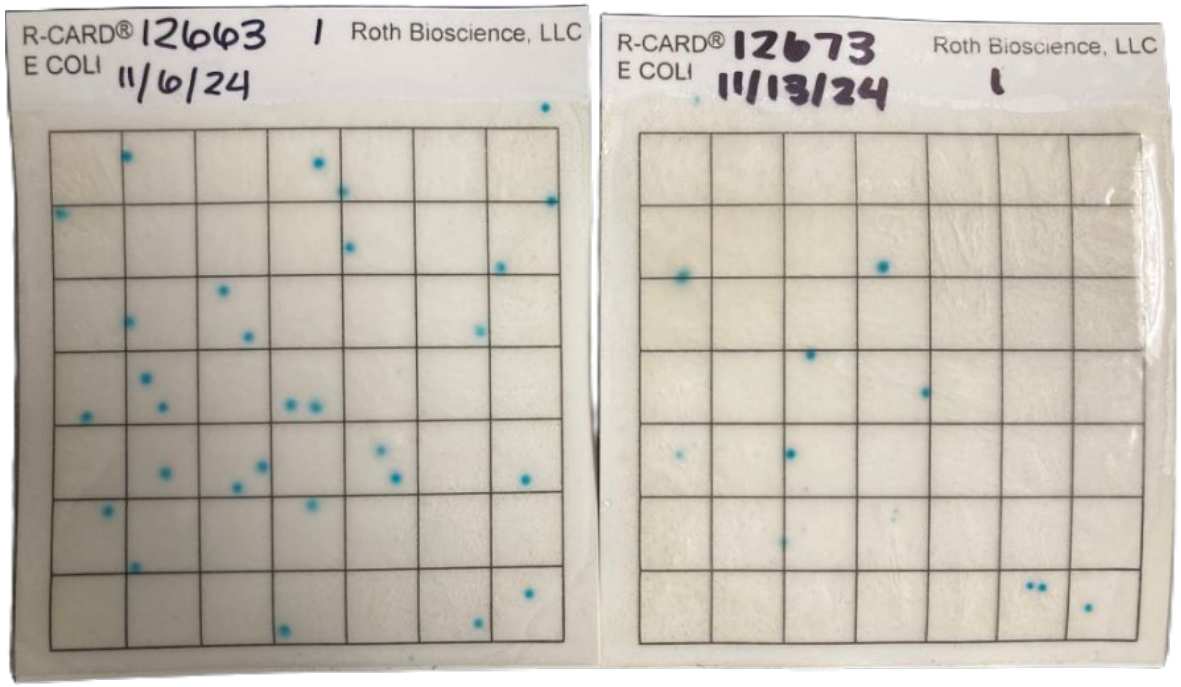
- Goal: Pilot the use of R-CARD for bacteria monitoring
  - Determine comparability to Coliscan EasyGel and IDEXX (state methods)
  - Determine temporal behavior
  - Assess need for dilutions (saltwater)
  - Assess need for filtration (turbid samples)

PROGRESS THUS FAR

- 3 internal R-CARD trainings
- Increased data collection starting September 2024
  - 62 sites total
  - Variety of methods
  - Bacteria Type
    - 14 sites analyzing Entercoccus
    - 48 sites analyzing E. coli

MONITORING METHOD	# OF SITES
R-CARD, Coliscan, & IDEXX	13
R-CARD & Coliscan	15
R-CARD & IDEXX	29
R-CARD	5

FINDINGS THUS FAR



- Uninoculated samples not needed for RCARD
- Ideal incubation time is 24 hours for E. coli
- Ideal incubation time is 36 hours for Entero
- Green/teal colony must be at least 0.5 mm (pinpoint size)
- Proven transferrable to CS programs
- Slight variation in results between Coliscan and RCARD – need to determine significance

NEXT STEPS

CONTINUE INTENSIVE FIELD WORK

FIRST DATA ANALYSIS LATE SPRING OR EARLY SUMMER

RESEARCH OTHER PROGRAMS USING THIS METHOD

CONTINUE TO KEEP TCEQ IN THE LOOP

SPECIAL THANKS!

BAYOU PRESERVATION
ASSOCIATION

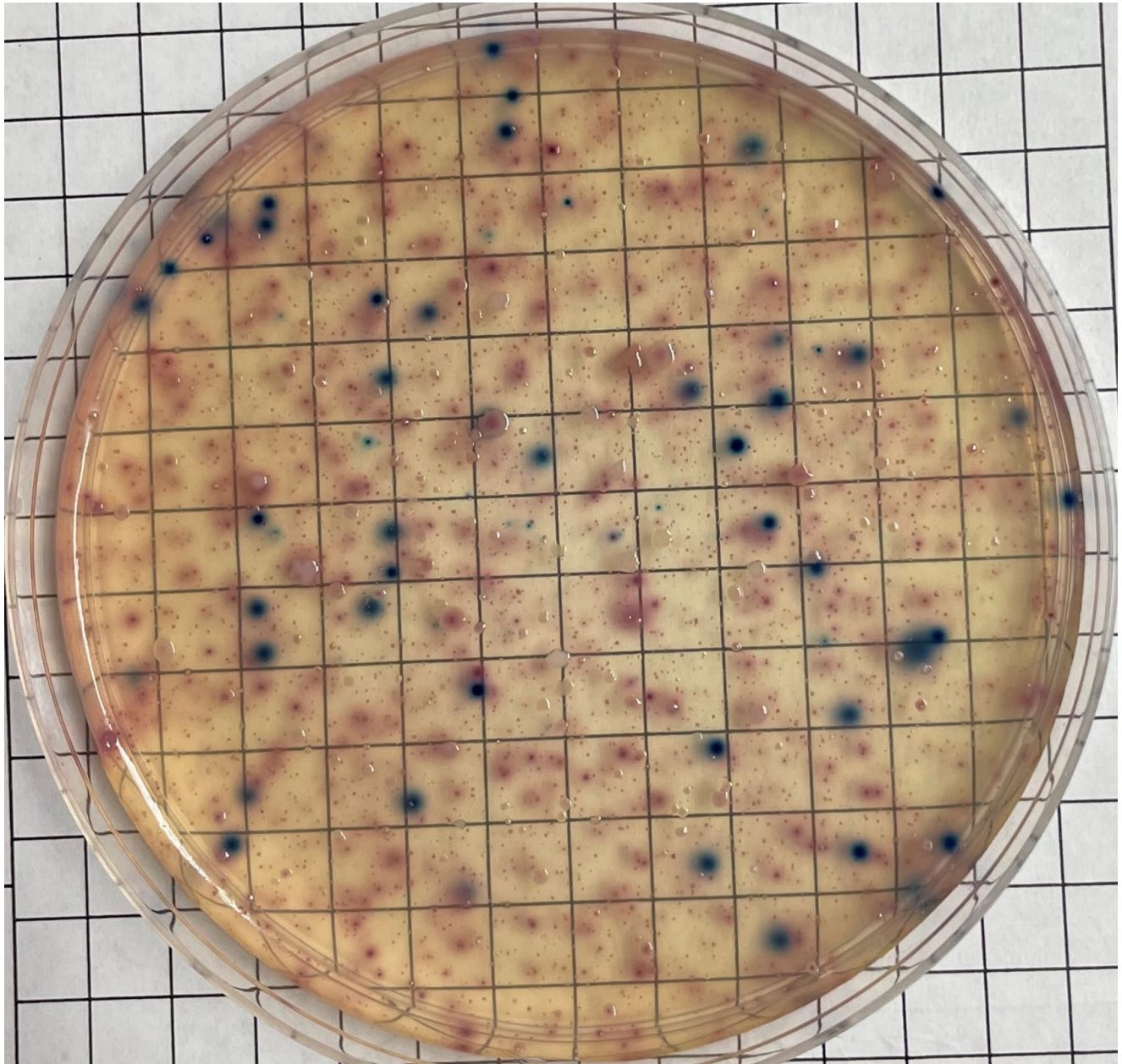
OPTICAL BRIGHTENER COMMUNITY SCIENCE METHODS TO DETECT HUMAN FECAL CONTAMINATION

Prepared by:
Desiree Jackson

February 06, 2025

What is *Escherichia coli* (*E. coli*) Bacteria?

- Found in the feces of humans and warm-blooded animals
- Used as an indicator of fecal pollution and pathogen contamination in freshwater
- Can pose health risks such as bloating, vomiting, and diarrhea
- Used as the water quality standard (126 MPN/100 ml) for contact recreational use

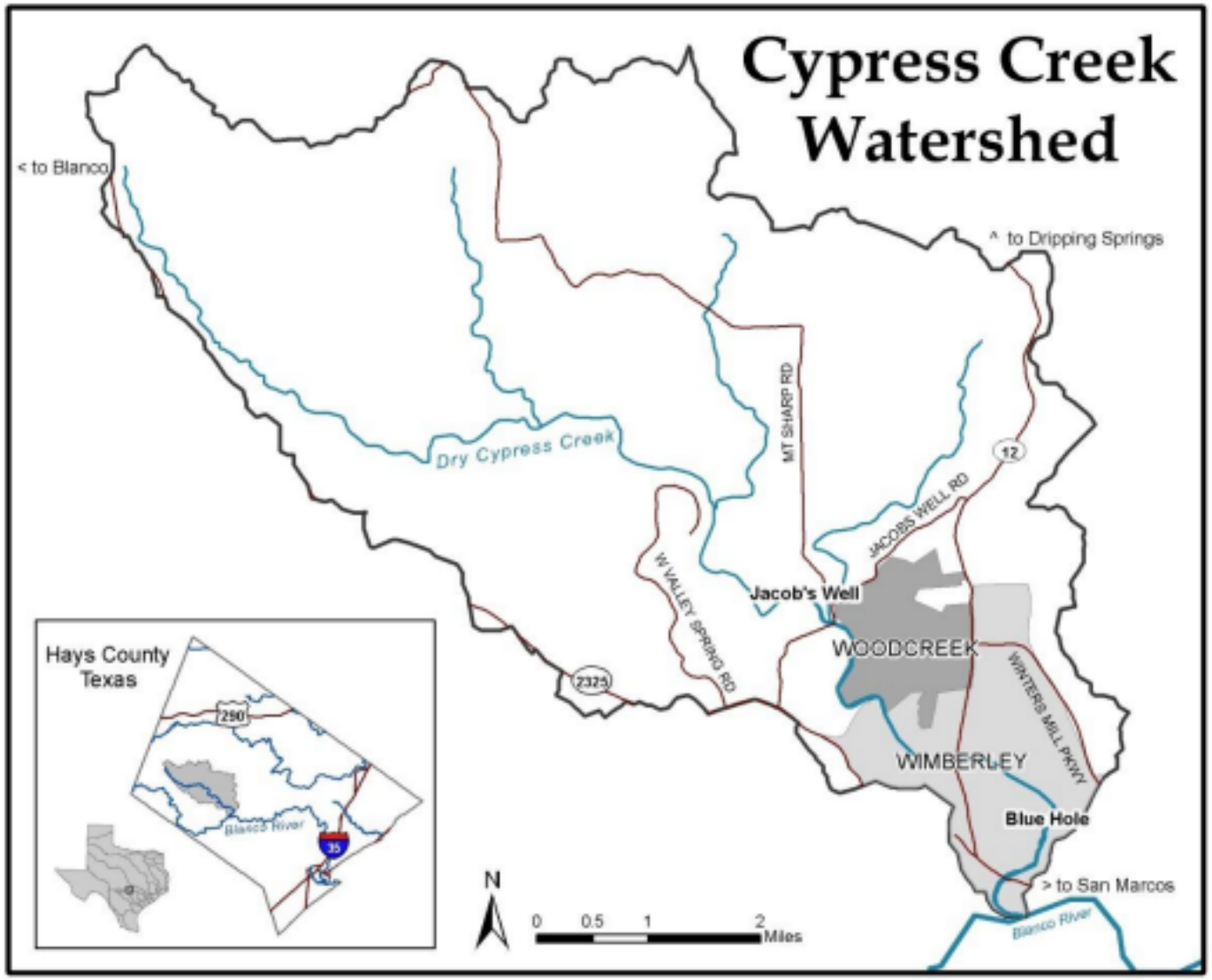


What are Optical Brigtheners?

- Chemical compounds or dyes used as whitening agents
- Added to laundry detergents, toilet paper, cleaning supplies, textiles, and more
- Used as an indicator of wastewater contamination
- Absorb to cotton and fluoresce under ultraviolet light
- Can assist in pollution screening and fecal source identification

Clean Rivers Program – Cypress Creek

- Quarterly monitoring 2016 – 2023
- E. coli water quality standard is 126 MPN/100 ml
- Cypress Creek geometric mean for all sites combined = 34 MPN/100 ml
- The two downstream bacteria exceedances prompted the research study



Cypress Creek Watershed, Hays County, Texas.

Clean Rivers Program – Cypress Creek

- Quarterly monitoring 2016 – 2023
- E. coli water quality standard is 126 MPN/100 ml
- Cypress Creek geometric mean for all sites combined = 34 MPN/100 ml
- The two downstream bacteria exceedances prompted the research study

Station Name	Number of Samples	Geometric Mean (MPN/100 mL)
Jacobs Well	27	4
Camp Young Judea	23	18
Woodcreek Dr.	19	9
RR12 Cottages	27	40
Blue Hole	27	43
RR12 Wimberley	33	**215**
Blanco Confluence	26	**220**

Clean Rivers Program: Cypress Creek Quarterly Monitoring Data (2016-2023) (MPN = most probable number, mL = milliliters).

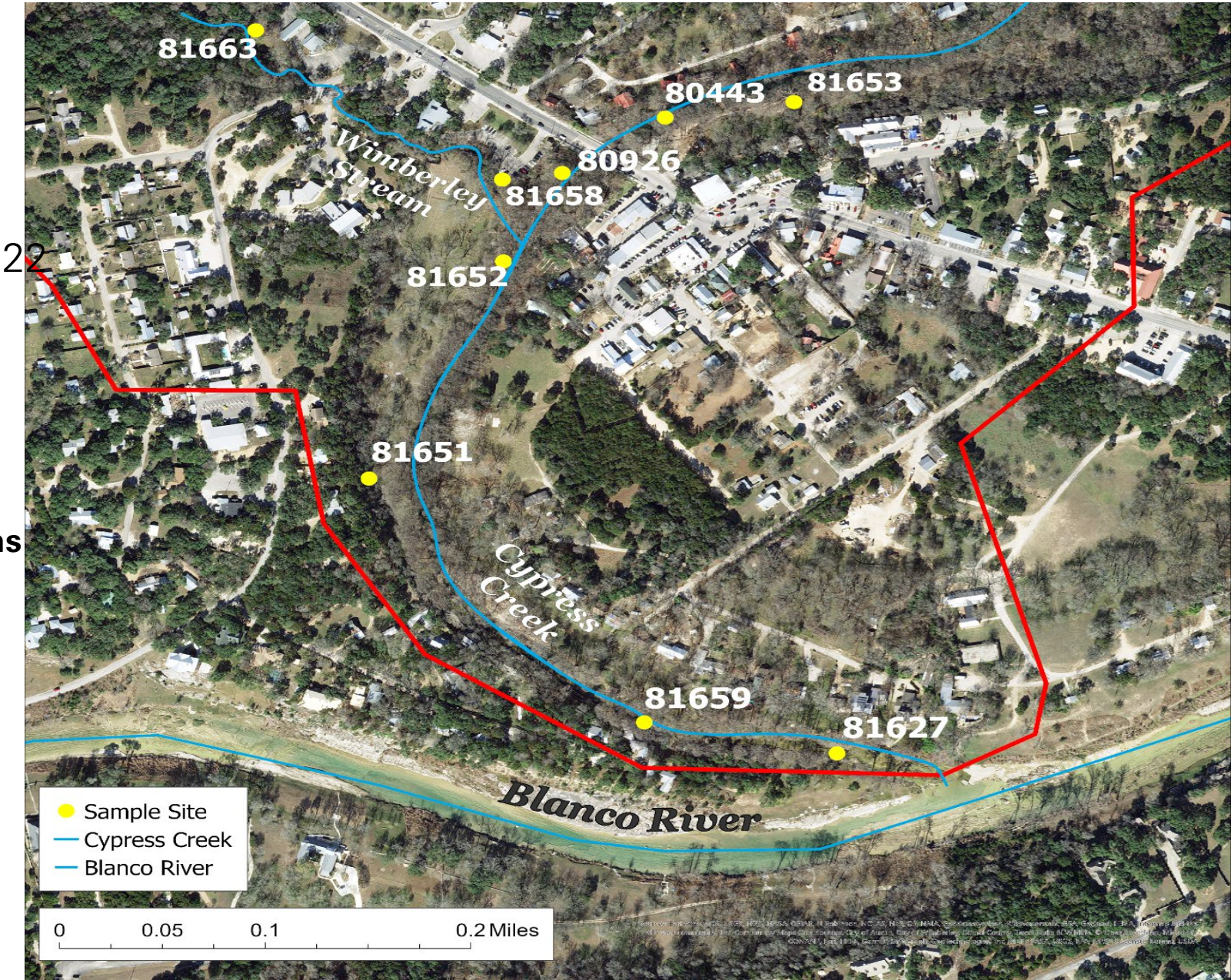
Research Objectives

- Monitor *E. coli* bacteria to identify potential sources of contamination in lower Cypress Creek
- Conduct optical brightener monitoring concurrently as a pollution screening tool
- Develop preliminary statewide community science resources to serve as a warning system for wastewater contamination
- Provide recommendations to stakeholders to reduce fecal contamination in lower Cypress Creek

Study Area - Lower Cypress Creek

- Phase 1: June – September 2021
- Phase 2: September 2021 – March 2022
- Phase 3: April – December 2022

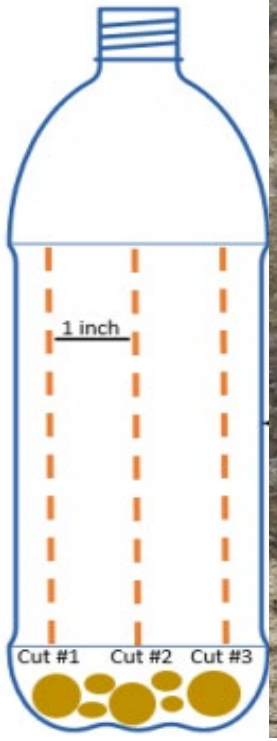
- **Key Characteristics**
  - **Development serviced by septic systems**
  - **Bat colony**
  - **Stormwater tributary**

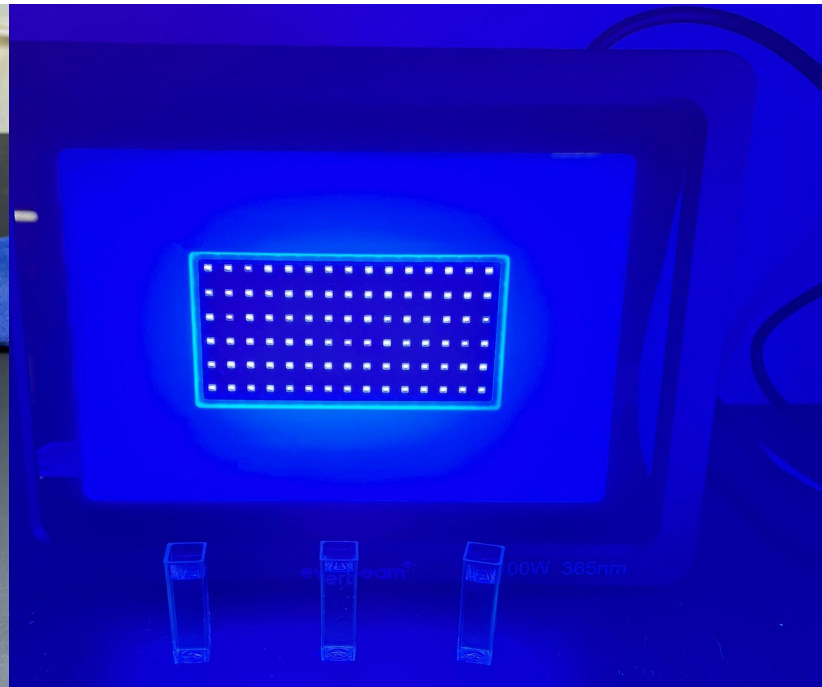


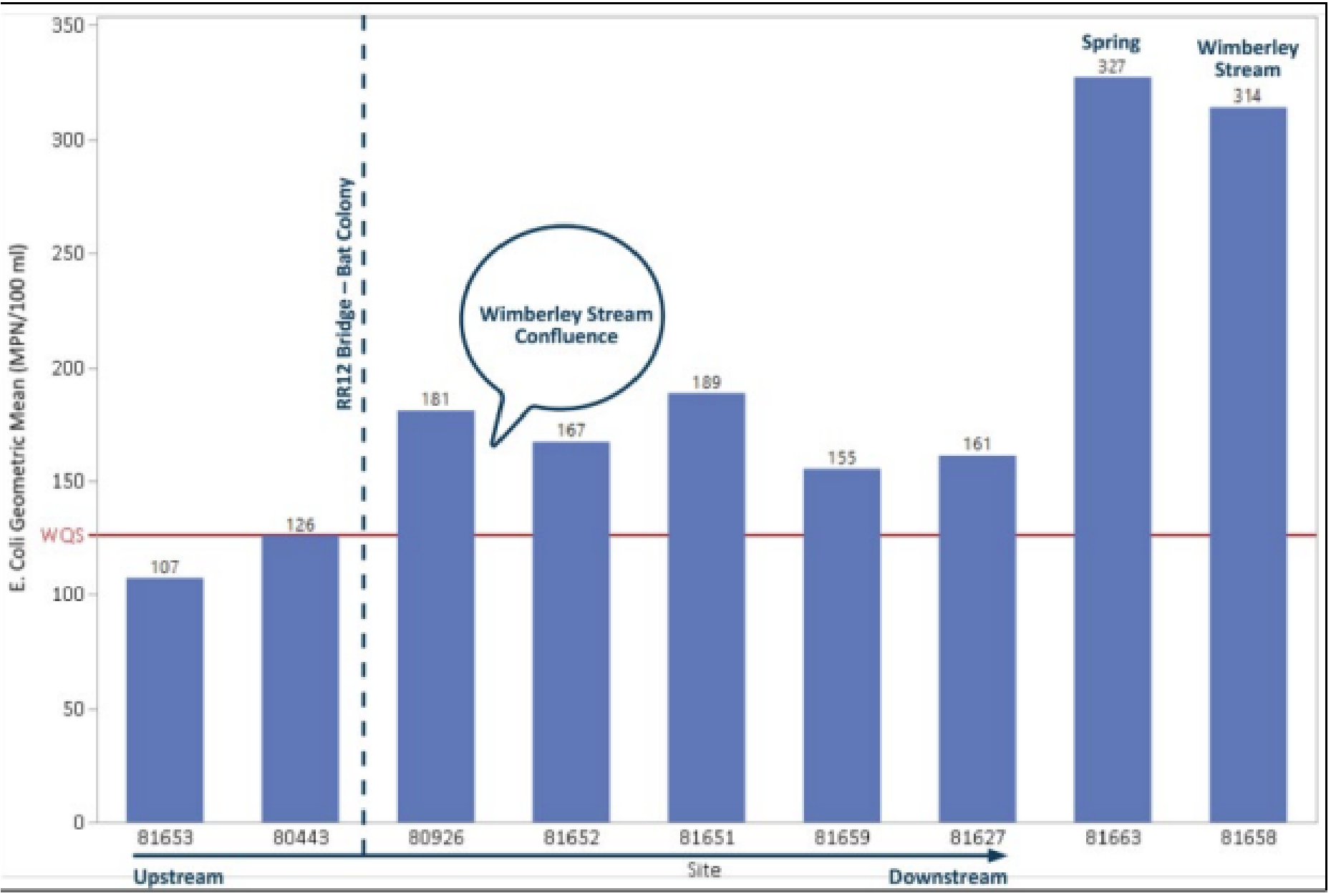
Optical Brightener Monitoring

- **“Tampling” (Tampon + Sampling)**
  - Modified recycled water bottle
  - Suspension of organic cotton tampon in waterbody for 1-3 days
  - Qualitative Presence/Absence test using UV light
  - Inexpensive, little technical skill, low sensitivity

- **Handheld Fluorometer**
  - Implemented to quantify “tampling” results
  - Lab measurements
  - 5- and 10-minute UV light exposure intervals to discern background fluorescence
  - Tracking % reduction rate and ratio







Results

- E. coli bacteria – 483 samples
- OB Tampling – 308 samples
- OB Fluorometry – 657 measurements
- Sources of contamination:
  - Human wastewater
  - RR12 bat colony
  - Stormwater runoff

Results – "Tampling" Monitoring Resources

The Meadows Center for Water and the Environment
Texas State University
Texas Stream Team

OPTICAL BRIGHTENER "TAMPLING" FIELD GUIDE

Equipment Needed

- Organic Cotton Tampons (e.g., natracare)
- Ziploc® bags or foil paper
- Container for sample retrieval
- Gloves
- 365 nm UV LED black light flashlight
- Recycled and rinsed empty water bottle modified with slits (Figure 1)
- Monofilament fishing line or strong rope
- Weighted kettle bell or similar object (Figure 2)

Note: Check all equipment for contamination prior to monitoring event. Optical brighteners rapidly photo decay when exposed to UV light. Protect the sample from UV light upon retrieval and transport prior to analysis.

Sample Location

Ideally, sample deployment should be in the centroid of flow. If you cannot secure the "tampling" array to a low hanging tree branch or root, you can use a weighted kettle bell or something similar. If unable to deploy at the centroid, choose a location as close to the centroid as possible. A location with shade is preferable to protect the sample from UV light exposure and photo decay.

Sample Deployment

1. Before deploying the "tampling" array, label each Ziploc® bag/foil with the site ID, date, and time deployed and retrieved.

2. Cut 4-6 inch equally spaced slits along the length of a plastic water bottle to allow water to flow through while still protecting the tampon from debris and sediment (Figure 1).

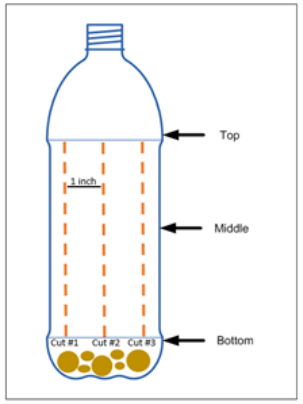


Figure 1. Modified Water Bottle

3. At the sampling location, use the monofilament line to tie a knot beneath the mouth of the water bottle and secure to a tree branch, roots, or kettle bell. You may need to weigh the bottle down with pebbles/rocks or tie it to an object to obtain the desired sampling location, preferably at centroid of flow (Figure 2).

4. Using gloves, unscrew the bottle cap and hold it in one hand; remove the tampon from the packaging. While holding the tampon string, place the tampon in the bottle so that it remains suspended about halfway down. While holding the string, replace the bottle cap so that the string is held in place by the cap (Figure 2).

5. Place bottle in the stream and ensure it submerges. Take a photo of the "tampling" array before leaving the site to document the location for retrieval later. Track the date and time of bottle deployment on Monitoring Form.

Prepared in cooperation with the Texas Commission on Environmental Quality, Texas A&M AgriLife Extension, Texas Stream Team, and the United States Environmental Protection Agency.

Last Updated: September 5, 2023

Figure 2. "Tampling" Array

Sample Retrieval

1. Track the date and time of bottle retrieval on Monitoring Form. A minimum of 24-hours and a maximum of 3 days is recommended between the deployment and retrieval of the "tampling" array.

2. Using gloves, retrieve the bottle. Remove the tampon from the bottle. Rinse the tampon with sample water to wash off excess sediment and squeeze out as much water as possible. Place the tampon in appropriately labeled Ziploc® bag/foil.

3. Place the Ziploc® bag/foil in a dark container for transport to minimize exposure to UV light.

Sample Analysis

1. In a dark setting with minimal light pollution, remove the Ziploc® bag/foil from the transportation container. Place the tampon on a clean surface to prevent cross contamination.

2. Gently unravel the tampon and position it to best expose as much of the surface area for analysis.

3. Turn on the 365 nm black light flashlight and expose tampon.

4. Observe the tampon for distinctive blue fluorescence (Figure 3.A). Notes for Presence/Absence:
   a. If you find distinctive blue spots within the cotton fibers of the tampon (gently pull apart fibers to confirm), even if small amount, mark as "Positive" (Figure 3.A).
   b. Blue flecks on the surface of your tampon (Figure 3.B) are likely from contamination after retrieval. This "surface contamination" would NOT count as a positive result. (When in doubt, use (uncontaminated) tweezers to see if blue flecks are easily removed from surface).
   c. Note: Other colors may show up with UV light (red = photosynthetic material, purple = decaying organic material, etc). This result refers ONLY to the blue fluorescence.

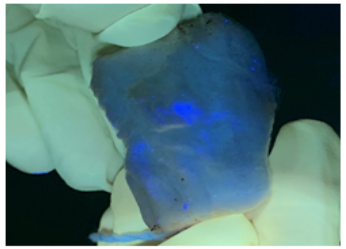


Figure 3. A. Tampon with optical brightener fluorescence.

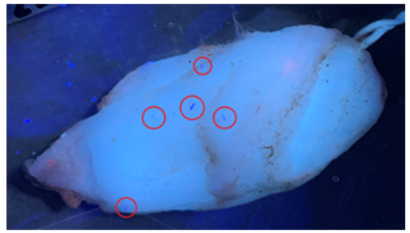


Figure 3. B. Contaminated tampon with blue flecks.

5. Document presence or absence of fluorescence on Monitoring Form and take a picture of the exposed tampon.

6. Dispose of the sample in household waste.

Prepared in cooperation with the Texas Commission on Environmental Quality, Texas A&M AgriLife Extension, Texas Stream Team, and the United States Environmental Protection Agency.

Last Updated: September 5, 2023

E. coli Bacteria and Optical Brightner Manuscript

- Citizen Science: Theory and Practice (CSTP)
- Methods Paper (not to exceed 6,000 words)
- Authors:
  - Desiree Jackson
  - Sandra Arismendez
  - Kelly Albus
  - Ben Hendrickson
  - Aspen Navarro


THANK YOU!

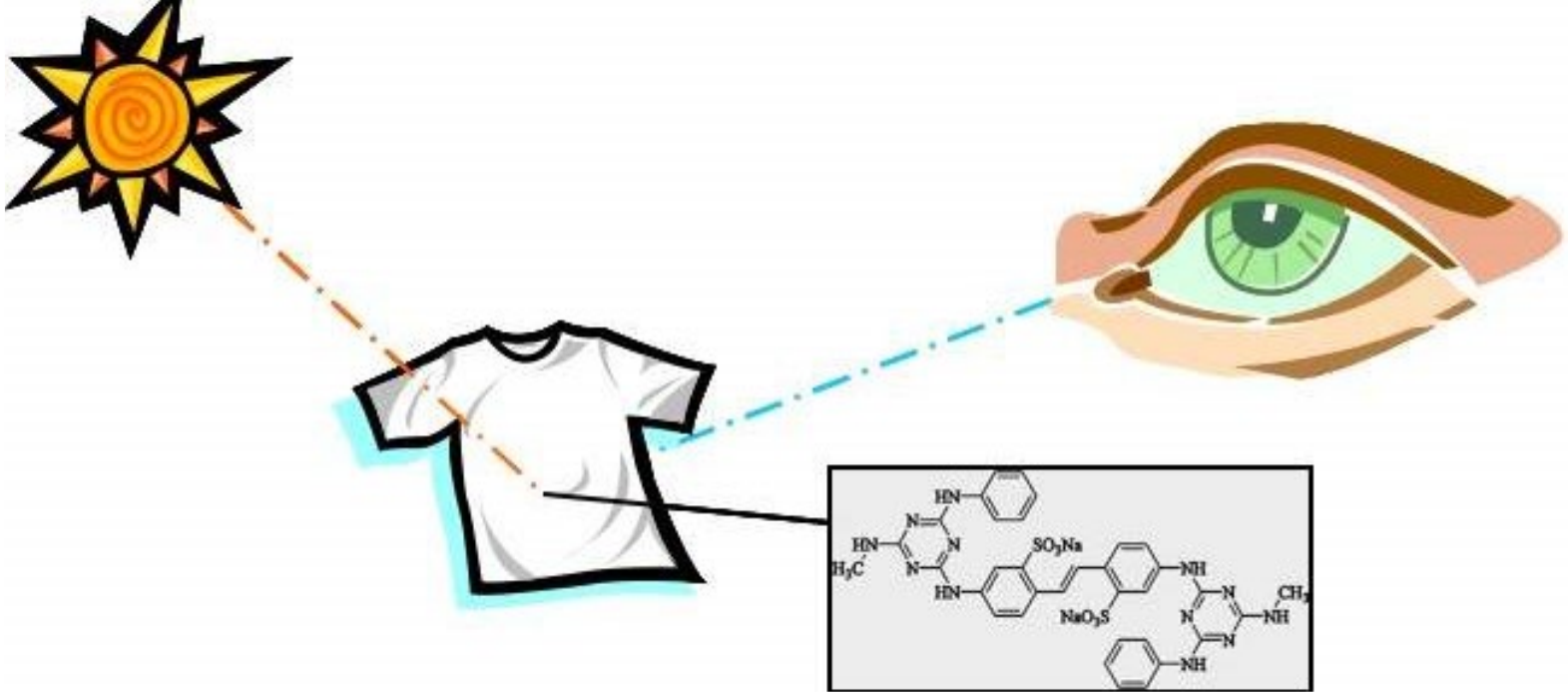
TEXAS STREAM TEAM OPTICAL BRIGHTENER COMMUNITY SCIENTIST TRAINING

Aspen Navarro, M.S., CPM

The Meadows Center
for Water and the Environment

Texas Stream Team

Texas Stream Team is funded in part through a grant from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality



OPTICAL BRIGHTENERS HIGHLIGHTS

- Enhance the appearance of materials by making them look whiter and brighter (fluoresce)
- Manufacturers implemented in commercial and household products in the 1940s
- Photo decay when exposed to UV light

OPTICAL BRIGHTENER SOURCES

- Detergents
- Fabric Softeners
- Stain Removers
- Multi-purpose Cleaners
- Toilet Cleaners
- Shampoo and Conditioners
- Toothpaste
- Fabric Refresher
- Toilet Paper

ENVIRONMENTAL CONCERNS

- Not biodegradable; accumulate in water bodies and sediment.
- Potential Indicators of Wastewater Contamination
- Limited understanding of their impact on aquatic life and ecosystems.




SOURCE TRACKING

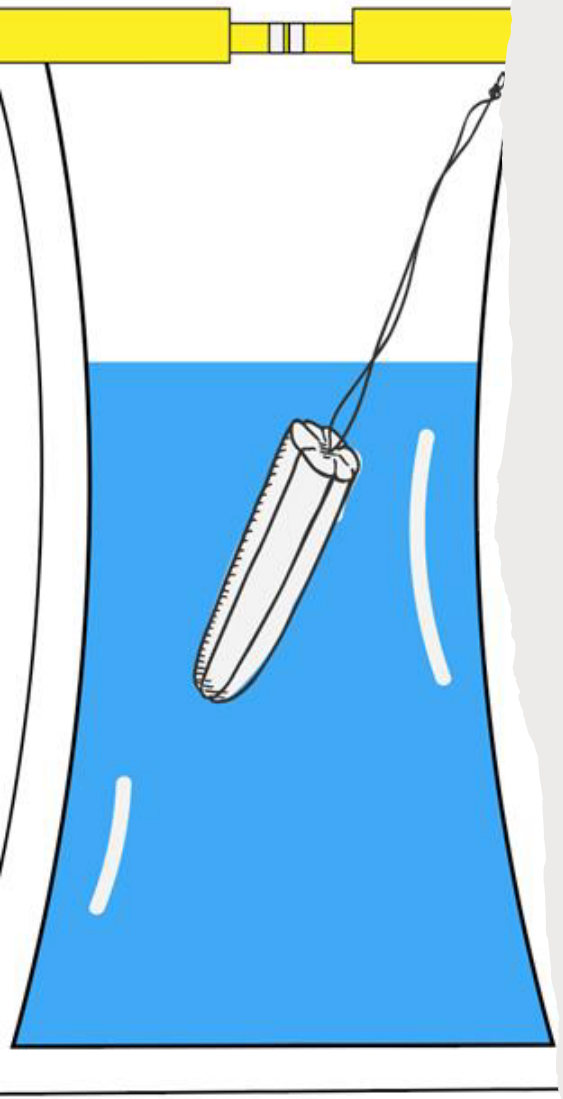
- Effluent from wastewater treatment plants
- Illicit discharges (failing or malfunctioning septic systems)
- Industrial effluents (laundries, textile manufacturing, carpet cleaners, and paper mills)
- Stormwater runoff (urban areas)
- Agricultural runoff (rural areas with septic systems)

OPTICAL BRIGHTENER MONITORING

- Detectable using 365 nm UV LED black lights.
- Complements bacterial data for more accurate pollution source tracking.
- Routine data collection for trend analysis.
- Serve as a low-cost preliminary screening tool.
- No screening criteria set by the TCEQ for optical brighteners

OPTICAL BRIGHTENER IMPLEMENTATION

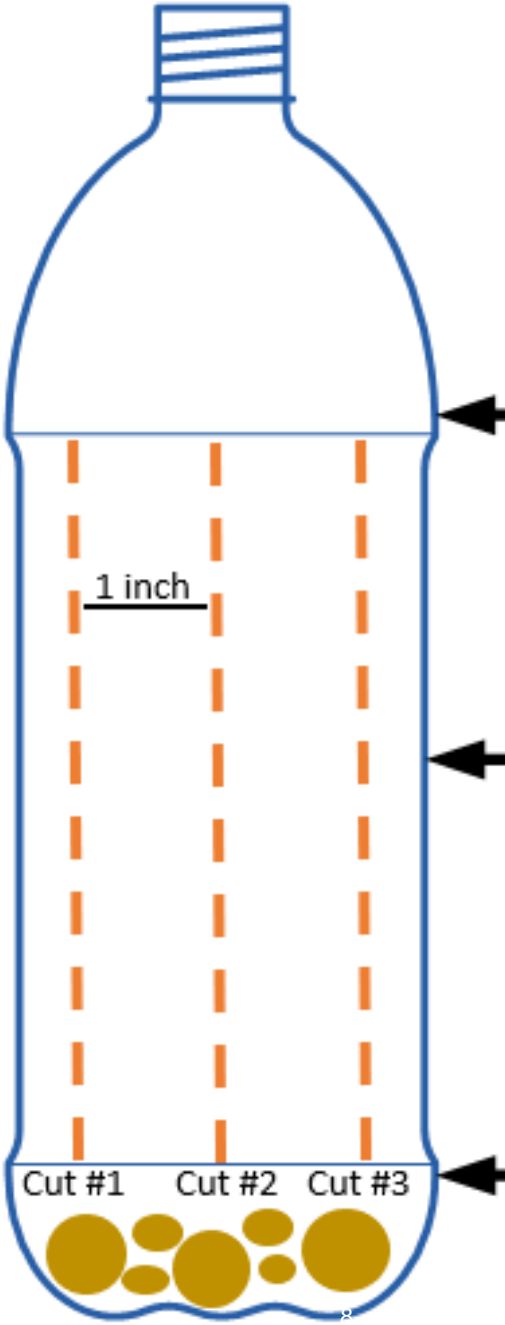
- Must be bacteria certified
- Best if used alongside active bacteria monitoring
- Method:
  - Deploying cotton pad → retrieving and analyzing for fluorescence under a blacklight → record results



COLLECTION METHODS

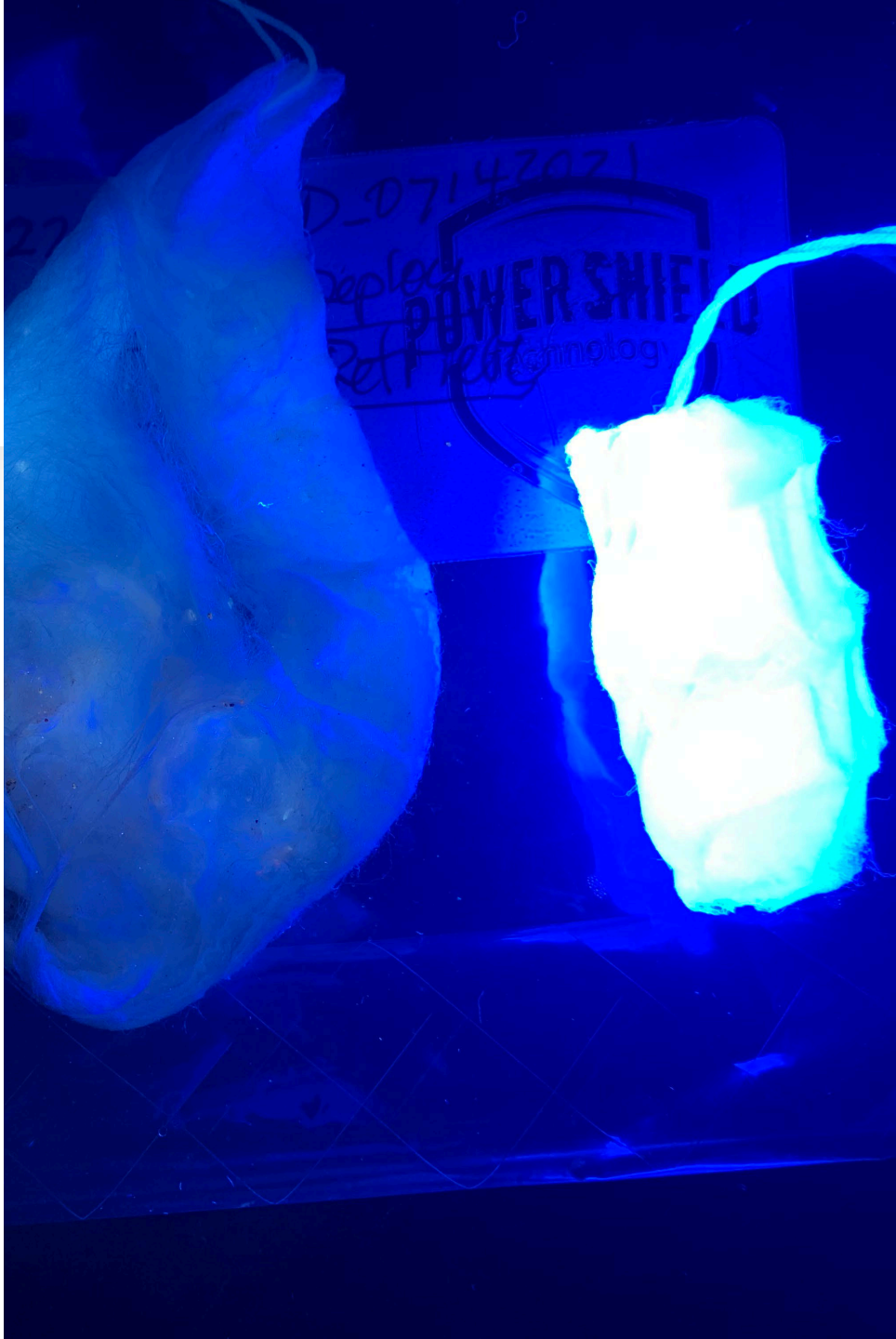
- **Whirl-Pak® Bag Method -** A water sample is collected in a black photo-sensitive Whirl-Pak® bag.
  - Suitable for tidally influenced streams.
  - Useful when accessing the centroid of flow is challenging.
  - Ideal for shorter deployment times (24 hours).

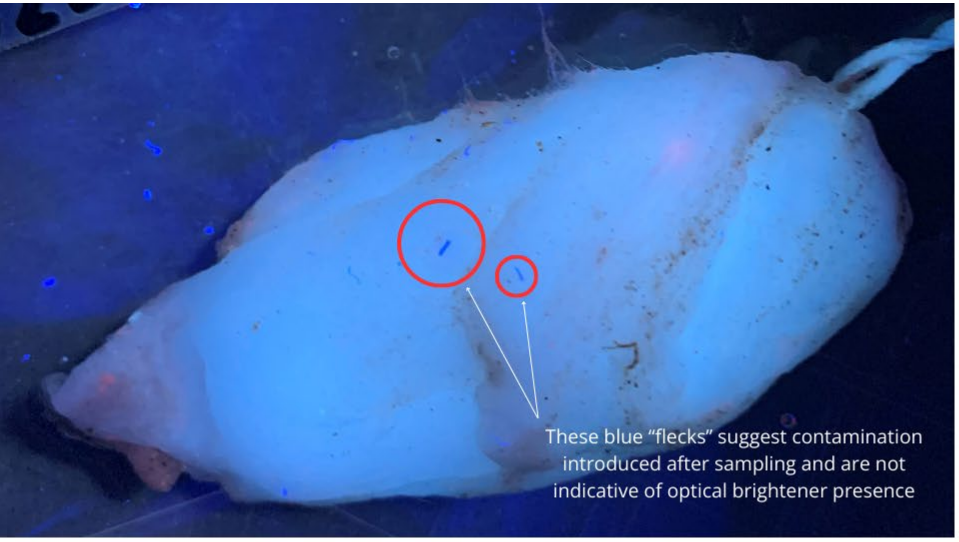
- **Modified Bottle Method -** A slitted plastic bottle is used to house a tampon, allowing water to flow through.
  - Ideal for streams with consistent flow.
  - Ideal when the centroid of flow is accessible.

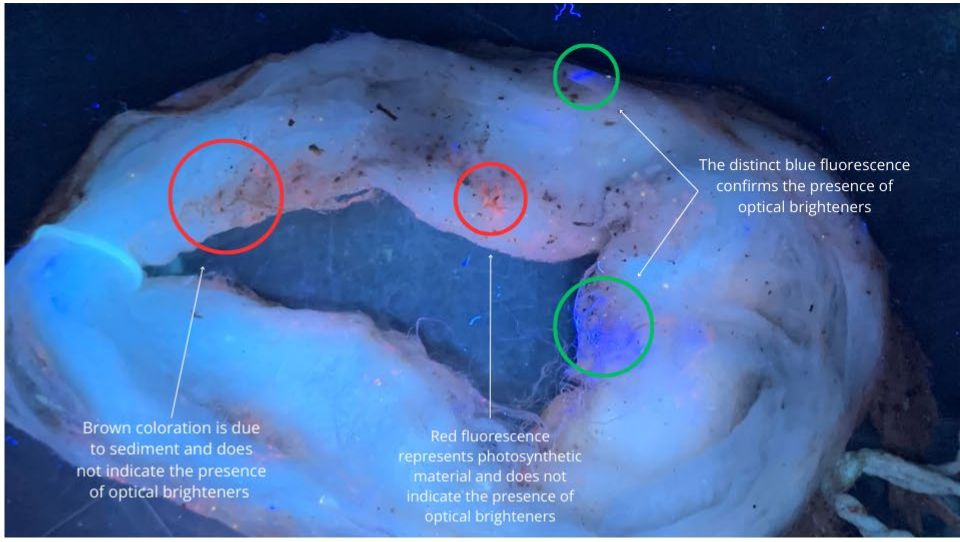


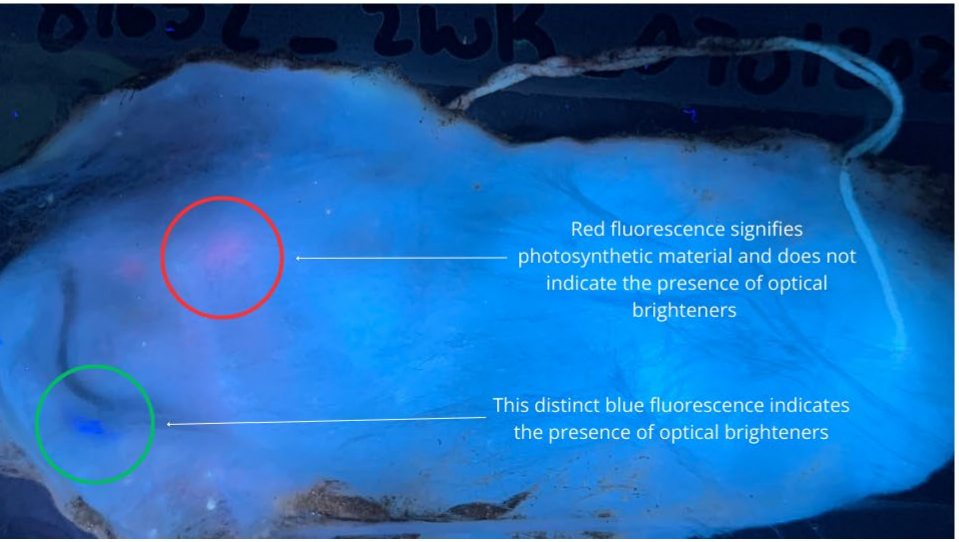
OPTICAL BRIGHTENER DETECTION

- Document all observations, including photographs of site and nearby environmental factors
- Expand monitoring
- Notify county authorities about potential septic tank inspections
- Conduct monitoring throughout various seasons and conditions




These blue “flecks” suggest contamination introduced after sampling and are not indicative of optical brightener presence


The distinct blue fluorescence confirms the presence of optical brighteners
Brown coloration is due to sediment and does not indicate the presence of optical brighteners
Red fluorescence represents photosynthetic material and does not indicate the presence of optical brighteners


Red fluorescence signifies photosynthetic material and does not indicate the presence of optical brighteners
This distinct blue fluorescence indicates the presence of optical brighteners


This sample shows no fluorescence and will be marked as "Absent." Only record "Present" for samples displaying distinct blue fluorescence within the cotton fibers. Disregard red, purple, and brown coloration

COMING SOON

BRANDED MANUAL

REMOTE AND SELF-PACED TRAINING

TRAINING CHECKLIST


WEBSITE
RESOURCES

PHOTO ARTIST CREDITS

Jason Allen
Anna Huff
Jennifer Idol
Jenya Mendelenko
Matthew Mohondro
Andrew Shirey
Erich Shlegel
Pat Stroka

The Meadows Center
for Water and the Environment

Texas Stream Team

FIELD AUDIT SESSION

2/6/2025

Aspen Navarro, M.S., CPM

The Meadows Center
for Water and the Environment
Texas State University
Texas Stream Team

WHAT?

WHAT IS A FIELD AUDIT SESSION?

- A field audit session involves the observation and documentation of the field and lab monitoring protocols implemented by trained community scientists.

- Field audit sessions are conducted by a certified Texas Stream Team Trainer or Quality Assurance Officer.

WHO?

WHO PARTICIPATES IN A FIELD AUDIT SESSION?

- Trained community scientists:
  - Standard Core
  - Probe Core
  - Advanced
  - *E. coli* Bacteria
  - Optical Brightener
  - Riparian Evaluation
  - Macroinvertebrate Bioassessment

WHERE?

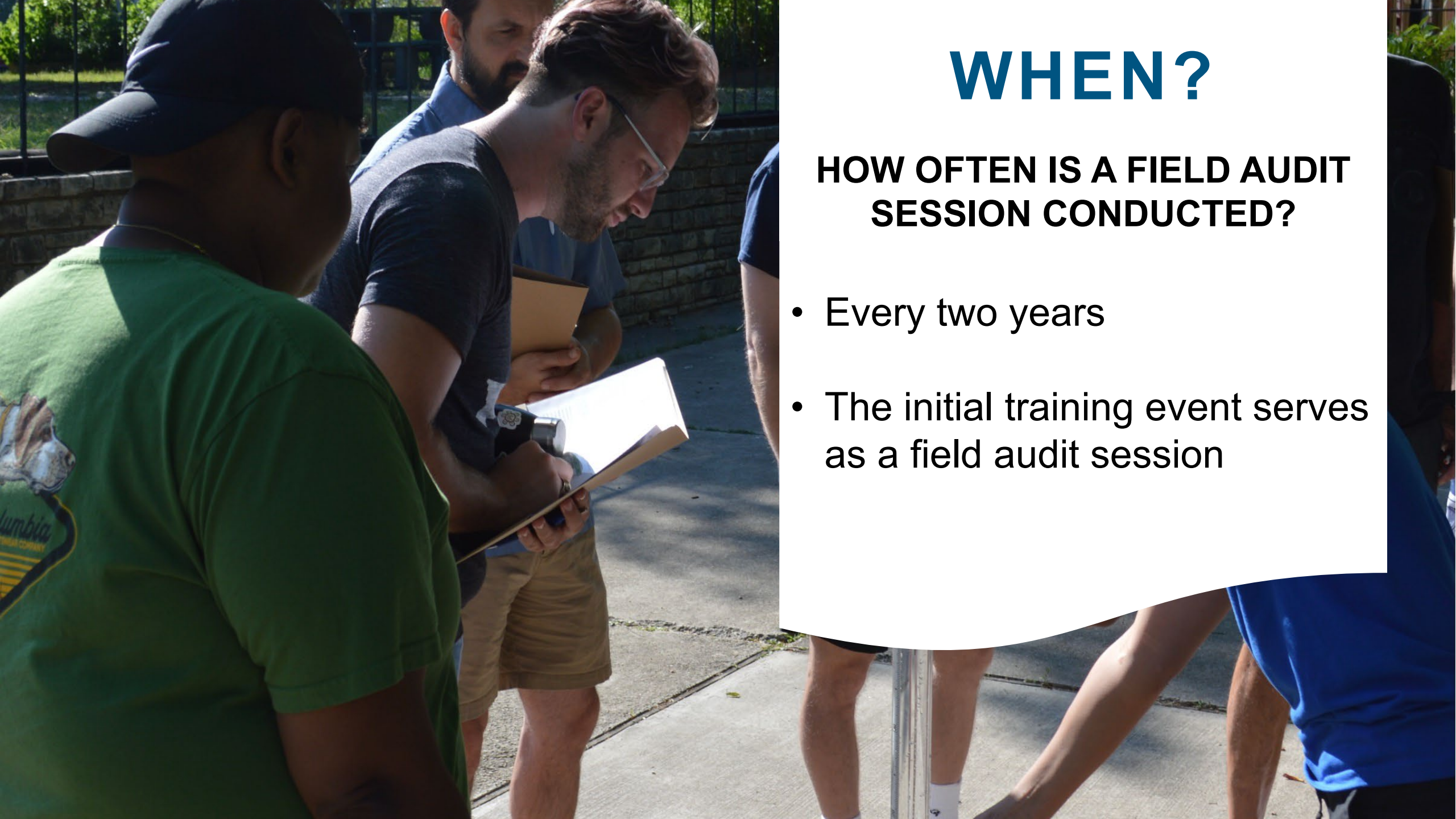
WHERE IS A FIELD AUDIT CONDUCTED?

1

Community scientist's monitoring site

2

Suitable location where a monitoring event can take place



WHEN?

HOW OFTEN IS A FIELD AUDIT SESSION CONDUCTED?

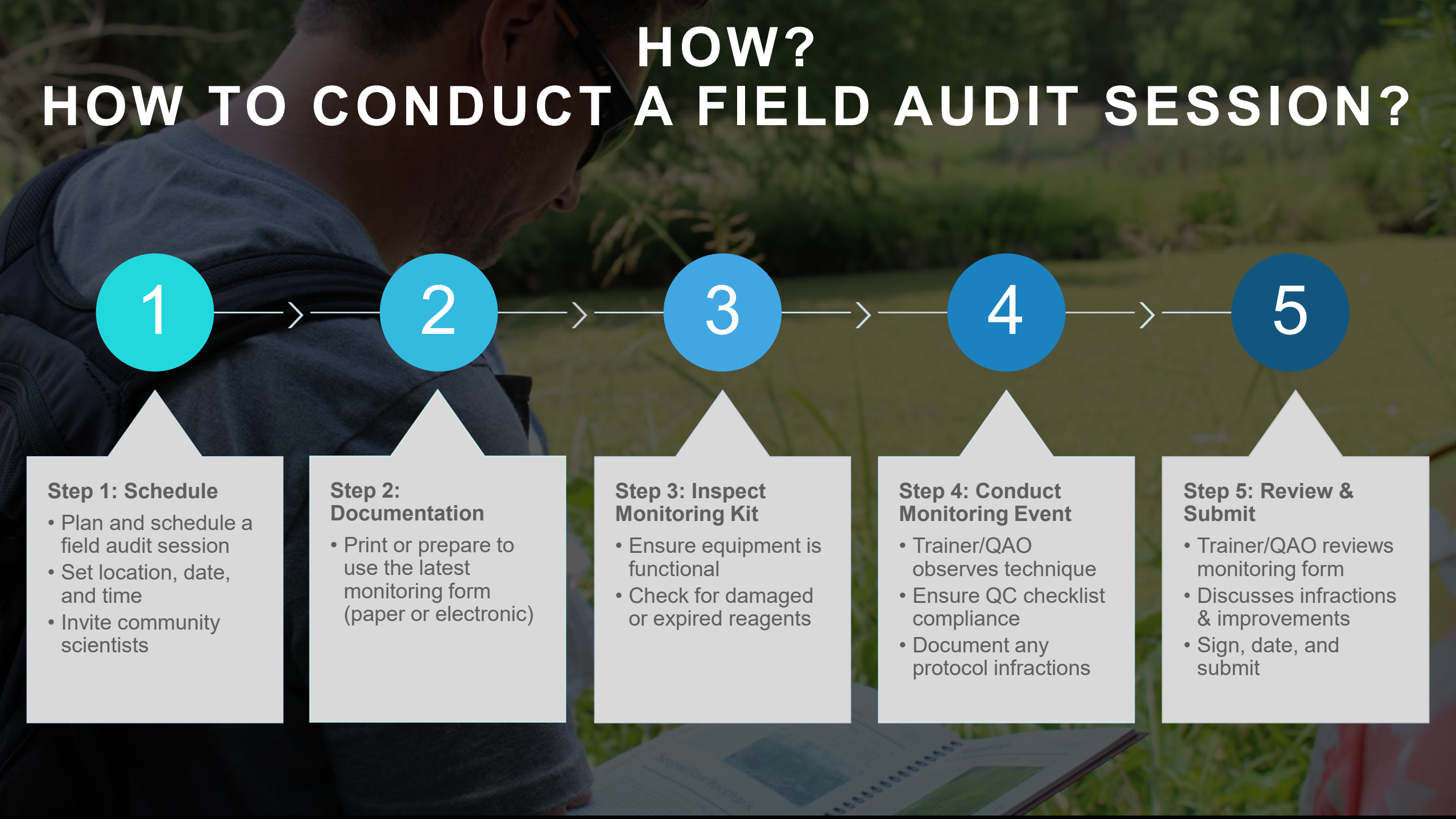
- Every two years
- The initial training event serves as a field audit session

WHY?

TO IMPROVE DATA QUALITY

- To ensure monitoring protocols are implemented consistently statewide
- To ensure measurements are comparable

HOW?
HOW TO CONDUCT A FIELD AUDIT SESSION?



1

Step 1: Schedule

- Plan and schedule a field audit session
- Set location, date, and time
- Invite community scientists

2

Step 2: Documentation

- Print or prepare to use the latest monitoring form (paper or electronic)

3

Step 3: Inspect Monitoring Kit

- Ensure equipment is functional
- Check for damaged or expired reagents

4

Step 4: Conduct Monitoring Event

- Trainer/QAO observes technique
- Ensure QC checklist compliance
- Document any protocol infractions

5

Step 5: Review & Submit

- Trainer/QAO reviews monitoring form
- Discusses infractions & improvements
- Sign, date, and submit

FOR MORE INFORMATION CONTACT:

Texas Stream Team
TxStreamTeam@txstate.edu
512.245.1346
www.TexasStreamTeam.org