



# Funding Opportunities for Source Water Protection (SWP) in Virginia



**Raven Jarvis**  
VDH - Office of Drinking Water  
*Source Water Protection Program Specialist*

[raven.Jarvis@vdh.virginia.gov](mailto:raven.Jarvis@vdh.virginia.gov)

Graphic Source: U.S. EPA SWP Website

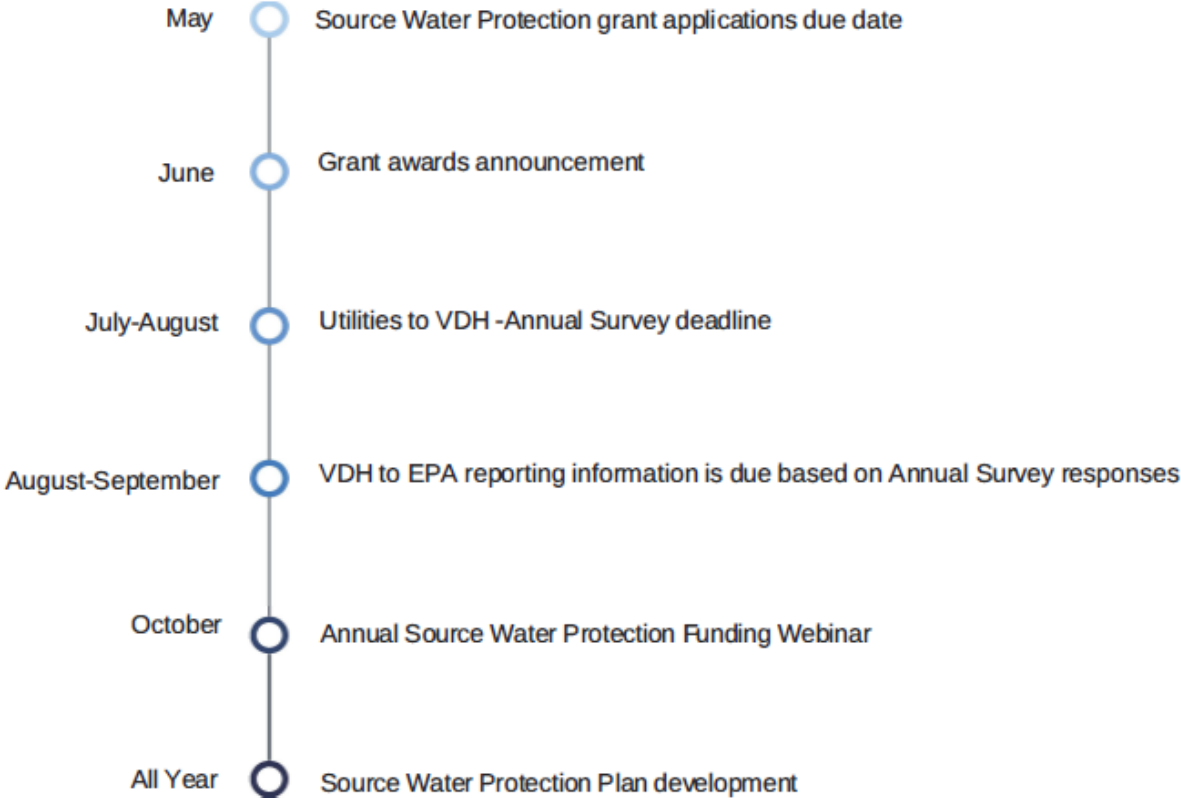


# Outline

- SWP timeline
- Why SWP?
- Roles
- SWP process
- Contractor services
- Strategy in place/Substantial implementation
- Eligibility



# ODW Source Water Protection Timeline





# Source Water Protection (SWP)

Why protect source water?

- Protect Public Health
- Build Community Trust
- Prevent Costs to the Waterworks and the Locality
- Reduce Water Treatment Costs



# VDH's role in Source Water Protection

VDH must report and provide to EPA:

- Mapped source water assessment (SWAs)
- Number of public water systems (PWS) with completed assessments
- Most threatening and prevalent significant potential sources of contamination (PSCs)
- Percent of community water systems (CWS) with protection strategies in place being implemented
- Percent of community water systems (CWS) with protection strategies substantially implemented and the change in that number over time
- State source water protection activities



# From Assessment to Protection

SWA = **S**ource **W**ater **A**ssessment

SWPP = **S**ource **W**ater **P**rotection **P**lan

SWPP Implementation = Putting Protection Plans Into Action



# What is the Source Water Protection Plan Process?

1. Develop a local advisory committee.
2. Educate the advisory committee
3. Review the source water assessment plan to identify key issues and challenges to developing and implementing a source water protection plan.
4. Identify and review source water protection options with the advisory committee.
5. Develop a source water protection plan with the advisory committee.
6. Develop a plan for implementing the source water protection plan.

# Direct Technical Assistance

ODW can provide:

- General guidance
- Updated Source Water Assessments
- Source Water Protection Plan Forms
- Public education materials
- Funding information

Source Water Protection Plan \_\_\_\_\_ [Date]

For  
[Waterworks Name]  
[PWSID #]  
[Location]

Prepared by:  
[Contractor Logo, if appropriate]

Funded by:  
**VDH** VIRGINIA DEPARTMENT OF HEALTH  
Protecting You and Your Environment  
www.vdh.virginia.gov

Office of Drinking Water  
Safe Drinking Water for a Healthy Virginia

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<https://www.vdh.virginia.gov/drinking-water/source-water-programs/source-water-protection-program/>



# ODW Source Water Protection Assistance

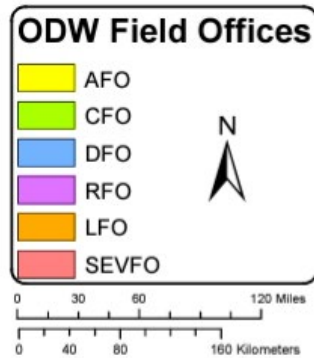
- **SWP Contractors** (pop.<50,000): SWPP development and implementation assistance
- **Direct Technical Assistance** (pop.>50,000)
- **Source Water Protection Implementation Grants**
- **Grant writing assistance** to other programs.



<https://www.vdh.virginia.gov/drinking-water/source-water-programs/source-water-protection-assistance-funding-opportunities/>

# Source Water Assessments (SWA)

To request a copy of your SWA, contact your ODW Field Office



## Office of Drinking Water

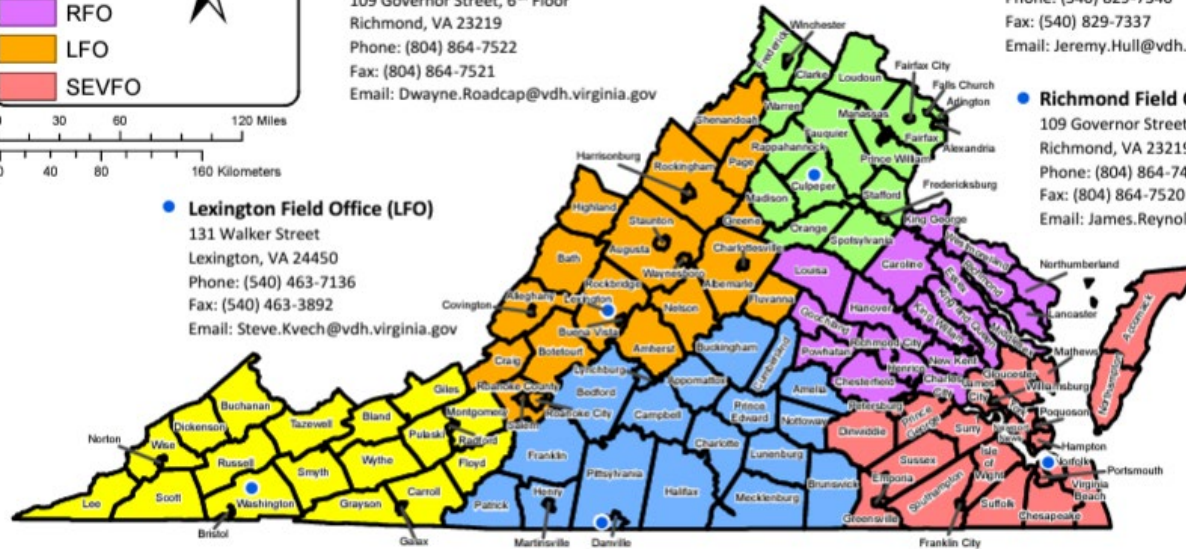
[www.vdh.virginia.gov/odw](http://www.vdh.virginia.gov/odw)

■ **Central Office**  
 109 Governor Street, 6<sup>th</sup> Floor  
 Richmond, VA 23219  
 Phone: (804) 864-7522  
 Fax: (804) 864-7521  
 Email: Dwayne.Roadcap@vdh.virginia.gov

● **Culpeper Field Office (CFO)**  
 400 South Main Street – 2<sup>nd</sup> Floor  
 Culpeper, VA 22701-3318  
 Phone: (540) 829-7340  
 Fax: (540) 829-7337  
 Email: Jeremy.Hull@vdh.virginia.gov

● **Richmond Field Office (RFO)**  
 109 Governor Street, 6<sup>th</sup> Floor  
 Richmond, VA 23219  
 Phone: (804) 864-7409  
 Fax: (804) 864-7520  
 Email: James.Reynolds@vdh.virginia.gov

● **Lexington Field Office (LFO)**  
 131 Walker Street  
 Lexington, VA 24450  
 Phone: (540) 463-7136  
 Fax: (540) 463-3892  
 Email: Steve.Kvech@vdh.virginia.gov



● **Abingdon Field Office (AFO)**  
 407 East main Street, Suite 2  
 Abingdon, VA 24210  
 Phone: (276) 525-6148  
 Fax: (276) 676-5659  
 Email: David.Dawson@vdh.virginia.gov

● **Danville Field Office (DFO)**  
 211 Nor Dan Drive, Suite 1040  
 Danville, VA 24540  
 Phone: (434) 836-8416  
 Fax: (434) 836-8424  
 Email: Ray.Weiland@vdh.virginia.gov

● **Southeast Virginia Field Office (SEVFO)**  
 830 Southampton Avenue, Room 2058  
 Norfolk, VA 23510  
 Phone: (757) 683-2000  
 Fax: (757) 683-2007  
 Email: Daniel.Horne@vdh.virginia.gov



*The mission of the Office of Drinking Water is to protect public health by ensuring that all people in Virginia have access to an adequate supply of affordable, safe drinking water that meets federal and state drinking water standards.*

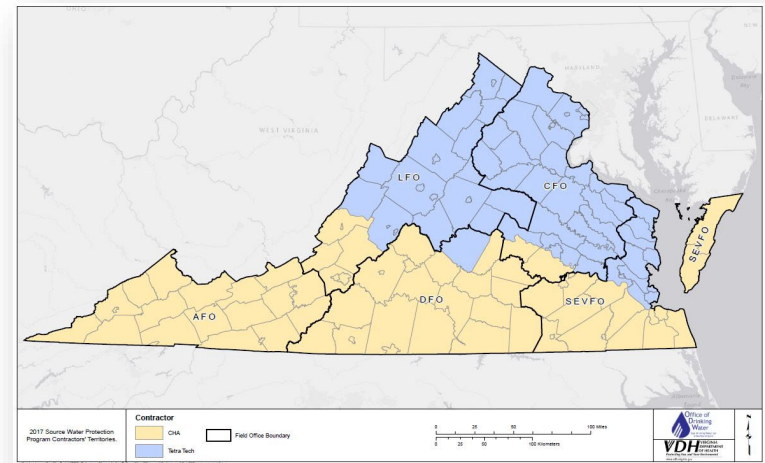


<https://www.vdh.virginia.gov/drinking-water/contact-us/>

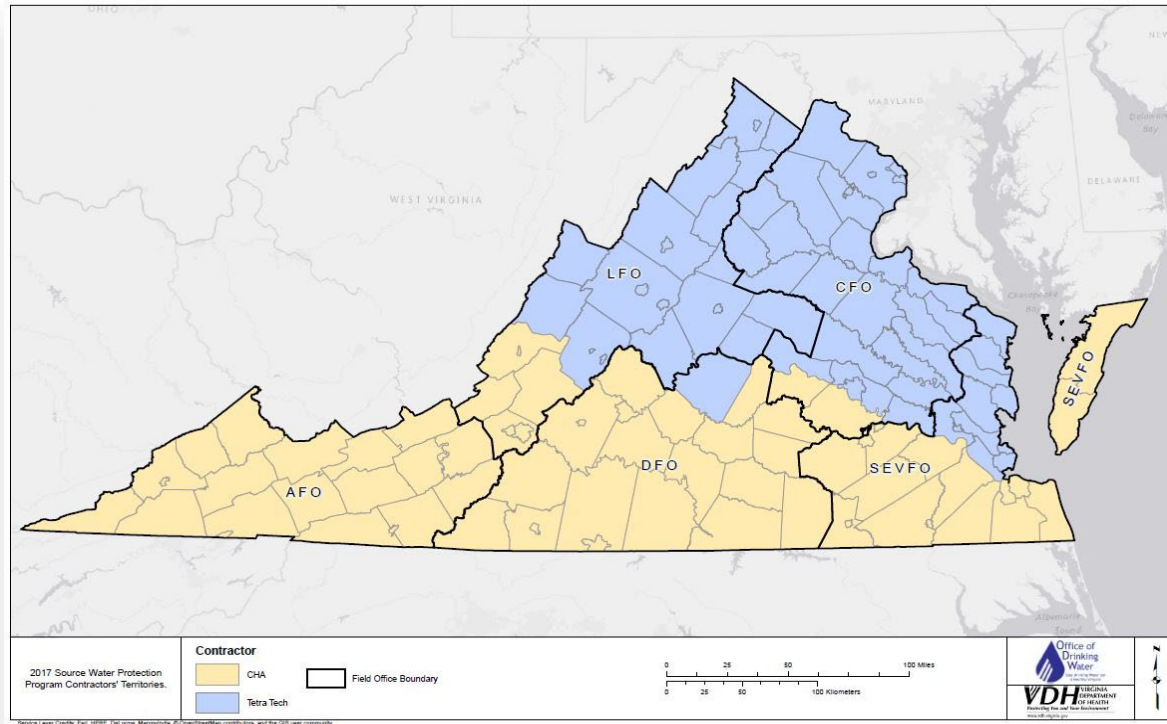


# ODW SWP Contractors

- Free to community waterworks serving <50,000
- Assists waterworks in:
  - Forming LACs
  - Developing SWPPs
  - Implementing Protection Plans, examples:
    - Grant Application Writing
    - Developing Public Education



# ODW SWP Contractors



- **Tetra Tech – Cori Edwards**  
681-313-4277    Cori.edwards@tetrattech.com
- **CHA – Amanda Marsh**  
540-552-5548    Amarsh@chacompanies.com
- **CHA- Ashley Ruble**  
540-259-8813    Aruble@chacompanies.com

# Role of Contractor Vs. Waterworks

The SWP Contractor's role will be:

- Facilitate identification of the advisory committee;
- Participate in committee meetings;
- Provide education and technical support;
- Assist in the preparation of the source water protection plan, and;
- Provide guidance for the implementation of the program.

# Role of Contractor Vs. Waterworks

The role of the Waterworks will be:

- Participate in the program development meetings;
- Assist in the development of the source water protection plan;
  - by providing any needed and available information;
  - by providing input on the plan development and implementation; and
- Implement the plan.

*Virginia Department of Health's role will be to provide continued funding and support for source water protection activities*

# Strategy in Place

## VDH Source Water Protection Program Definitions

Protection Strategy In-Place (SIP): Defined as a document or set of documents established by or for a community waterworks that addresses the following four source water protection elements<sup>1</sup>:

1. A delineation of the source assessment area (for surface based systems, this is the watershed; for groundwater based systems this may be the fixed radius method or a more technically defensible delineation of a well's recharge area)
2. Inventory of major potential sources of contamination (PSCs) within their source(s) delineation(s)
3. Recommended actions to eliminate/reduce the risks of impact by PSCs
4. Contingency plan to address contamination events

Examples of SIP include, but are not limited to:

- Source Water Protection Plan (SWPP) developed through one of VDH's assistance programs or other means
- Source Water Assessment Report (SWAR) issued after January 1, 2015
- Local or Regional Water Supply Plans submitted to the Virginia Department of Environmental Quality ([9VAC25-780](#)) when protection strategies are specifically referenced
- Any combination of programs or ordinances focused on watershed or wellhead protection (e.g., environmentally oriented or citizen groups, stormwater best management practices (BMPs), agricultural BMPs, etc.)

Waterworks are encouraged to contact the VDH while developing or updating a SIP. VDH can provide technical assistance to support the efforts.

# Substantial Implementation Recommendation

- Evaluation and Revision – We recommend every 3 years, identify **gaps** and shortcomings as well as changes in source water protection **threats and priorities”**
  - Ensure grant applications are consistent with SWWP plans.



Well Fencing- Purcellville





# Substantial Implementation (SI)

## Scenario 1

Community wells in the coastal plain may be deemed as having a Strategy In Place and Substantial Implementation status when the well is constructed pursuant to the Virginia Waterworks Regulations and supporting documentation exists.

This type of Substantial Implementation status does not expire unless there is evidence that well structure or aquifer has been compromised.



# Substantial Implementation

## Scenario 2

Community sources not meeting criteria under SI Scenario 1 may obtain Substantial Implementation status when:

a. A SIP is developed. *This is a one-time achievement applicable only for the first approved SIP.*

OR

a. A SIP is updated when it is more than 3 years old. *This cannot be the implementation action for two consecutive 3-year intervals.*

OR

a. One SIP recommendation or other protection/contingency measure is executed



# Source Water Protection Implementation Projects Grants



Funds implementation activities of community waterworks with:

- Groundwater & surface water sources
- Protection plans
- Active advisory committees



[SWP Grant Application](#)

**(TBD) Applications Due  
May 1, 2025**



# Eligibility

## Who may apply to the SWP Grant?

Eligible applicants for Source water protection grants are a municipality or service authority owning or operating a groundwater/Surface water based community water system(s) and with a SIP and an active SWPC.

VDH-ODW may fund source water protection plans and the implementation of certain protection measures for waterworks who meet the following criteria:

- Classified as a Community waterworks,
- Serve less than 50,000 people, and
- Process water directly from a drinking water supply source

## Who is not eligible?

Individuals, private for-profit firms, and unincorporated citizen groups are NOT eligible for grants under this program; municipalities or service authorities that are not operating a ground or surface water based community water system are NOT eligible for grants under this program.



# Additional Source Water Protection Funding Sources



# Land Protection Funding

- [Drinking Water State Revolving Fund \(SRF\)](#) – ODW
- [Clean Water SRF Land Conservation Program](#) – DEQ
- [Virginia Land Conservation Foundation](#) – DCR
- [The Land and Water Conservation Fund State and Local Assistance Program](#) – DCR
- [Healthy Watersheds Consortium Grant](#) – US Endowment for Forestry & Communities, Inc.
- [North American Wetlands Conservation Grants](#) – US Fish and Wildlife Service
- [Virginia Department of Forestry funding programs](#)

# BMP Funding

- Practices for preventing nonpoint source pollution
- Used in the treatment of agricultural and urban stormwater
- Funding Sources:

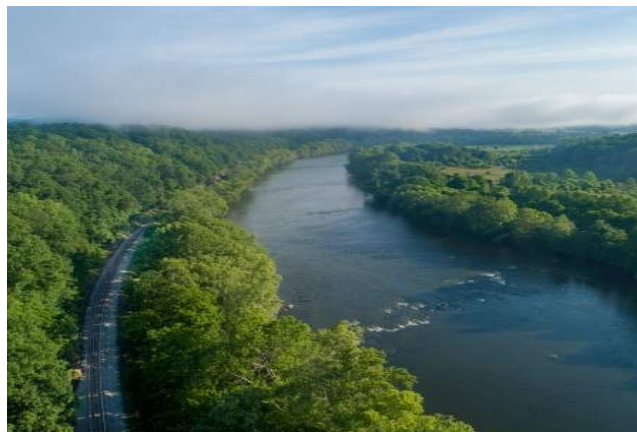


- [Nonpoint Source Management Implementation Grant Program](#) – DEQ
- [Clean Water SRF Stormwater Program](#) – DEQ
- [Stormwater Local Assistance Fund](#) – DEQ



# Other SWP Funding Opportunities

- [Urban Waters Small Grants Program](#) – EPA
- [Regional Conservation Partnership Program](#) – US Department of Agriculture
- [Five Star and Urban Waters Restoration Grants](#) – National Fish and Wildlife Foundation
- EPA - [Water Finance Clearinghouse](#)







## **Scott R McNally**

Source Water Technician

Virginia Rural Water Association

2138 Sycamore Avenue

Buena Vista, VA 24416

(908)-642-1579

[smcnally@vrwa.org](mailto:smcnally@vrwa.org)



For further questions or information on  
source water protection assistance,  
contact:

Raven Jarvis  
Special Projects Engineer  
[Raven.Jarvis@vdh.Virginia.gov](mailto:Raven.Jarvis@vdh.Virginia.gov)



# Contractor Resources for Source Water Protection Program

October 24, 2024



# CHA Project Team and Region

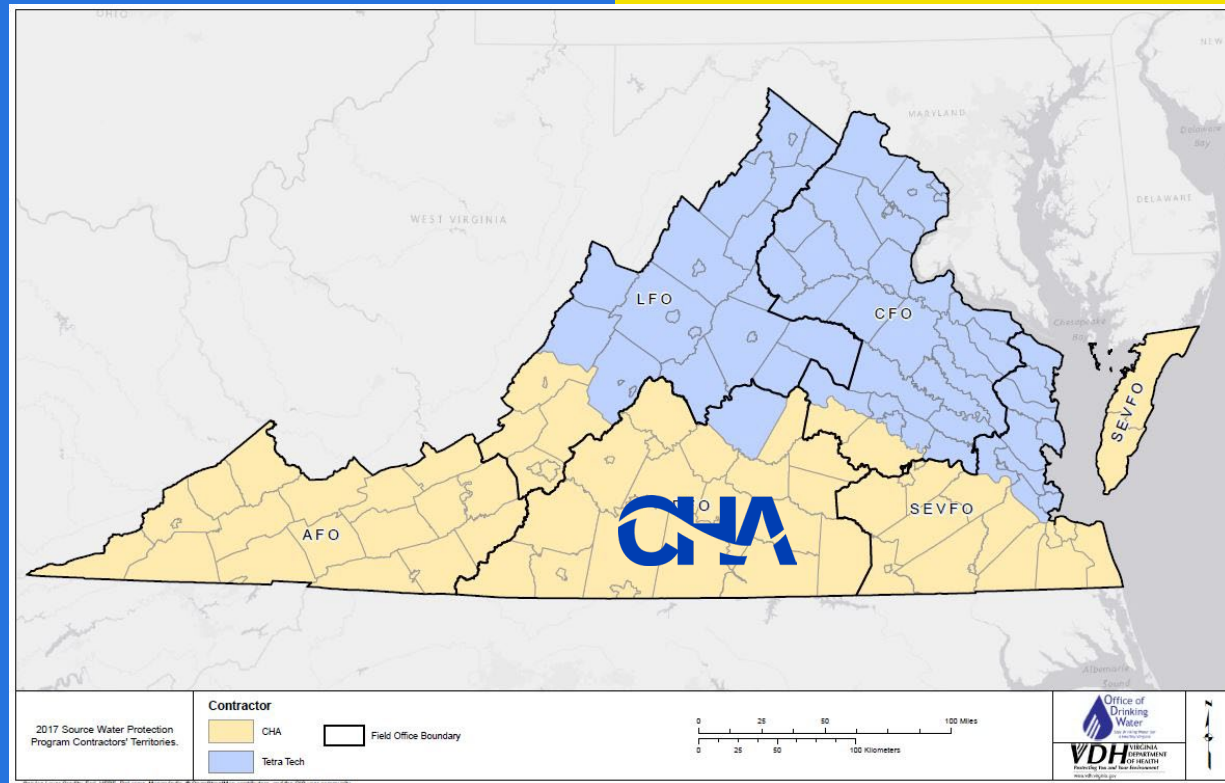
CHA Consulting, Inc.

Sandra Warner  
540-552-5548

swarner@chasolutions.com

Ashley Ruble  
540-259-8813

Aruble@chasolutions.com



## CHA provides contractor assistance to southern half of state:

- Free to community waterworks serving <50,000 that process drinking water

# Role of Contractor

- Facilitate Identification of the local advisory committee;
- Participate in committee meetings;
- Provide education and technical support;
- Assist in the preparation of the source water protection plan, and;
- Provide guidance for the implementation of the program.

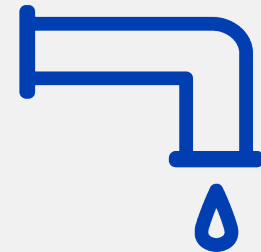


EXAMPLE IMPLEMENTATION STRATEGIES THAT  
CONTRACTORS CAN ASSIST WITH

# Public/Residential Awareness

Promote general source water protection education for residents within the source water protection area

- Informative Pamphlets and Brochures that address:
  - Importance of water protection
  - Nature of surface/groundwater recharge
  - Concerns with local geology
  - List of Dos and Don'ts
  - Safe management of pesticides/fertilizers
- Information along with water bills
- Provide information on your website



# Targeted Public Outreach/Education



- Outreach can be targeted to specific groups
  - Industries with Chemical Storage
  - Timber Tract Owners
  - Homeowners
  - Septic system owners
- Coordinate efforts with other stakeholders in the community



# Contingency Plan

- Provide strategies for supplying safe drinking water to the customer in the event of contamination or physical disruption
- Review and Identify what is already in place (i.e. drought contingency plans or other ERP) and what gaps exist – specifically for contamination events



# Other Source Water Protection Measures to Implement



Acquisition of easements



Proposing/approving ordinance or zoning



Installation of signs



Hiring an employee dedicated to source water protection



Fencing cattle out of waterways



Well Abandonment

# Success Story: City of Salem

- Technical Assistance through VDH program to develop SWPP for surface water intake
- Developed website to provide source water protection info to residents in addition to mailings
- City teamed with USGS to build upstream monitoring station which began operation in early October 2020
- On October 30, 2020, a train derailment occurred over the Roanoke River, west of the City of Salem and upstream of the Roanoke River at Salem monitoring site. This monitoring site was able to capture data on the impacts of the coal spill on water quality.



October 24, 2024



# Source Water Protection Assistance



# Tetra Tech Project Team & Region

## Tetra Tech Project Team

- Aileen Molloy: Project Manager
- Cori Edwards: Technical Lead, GIS

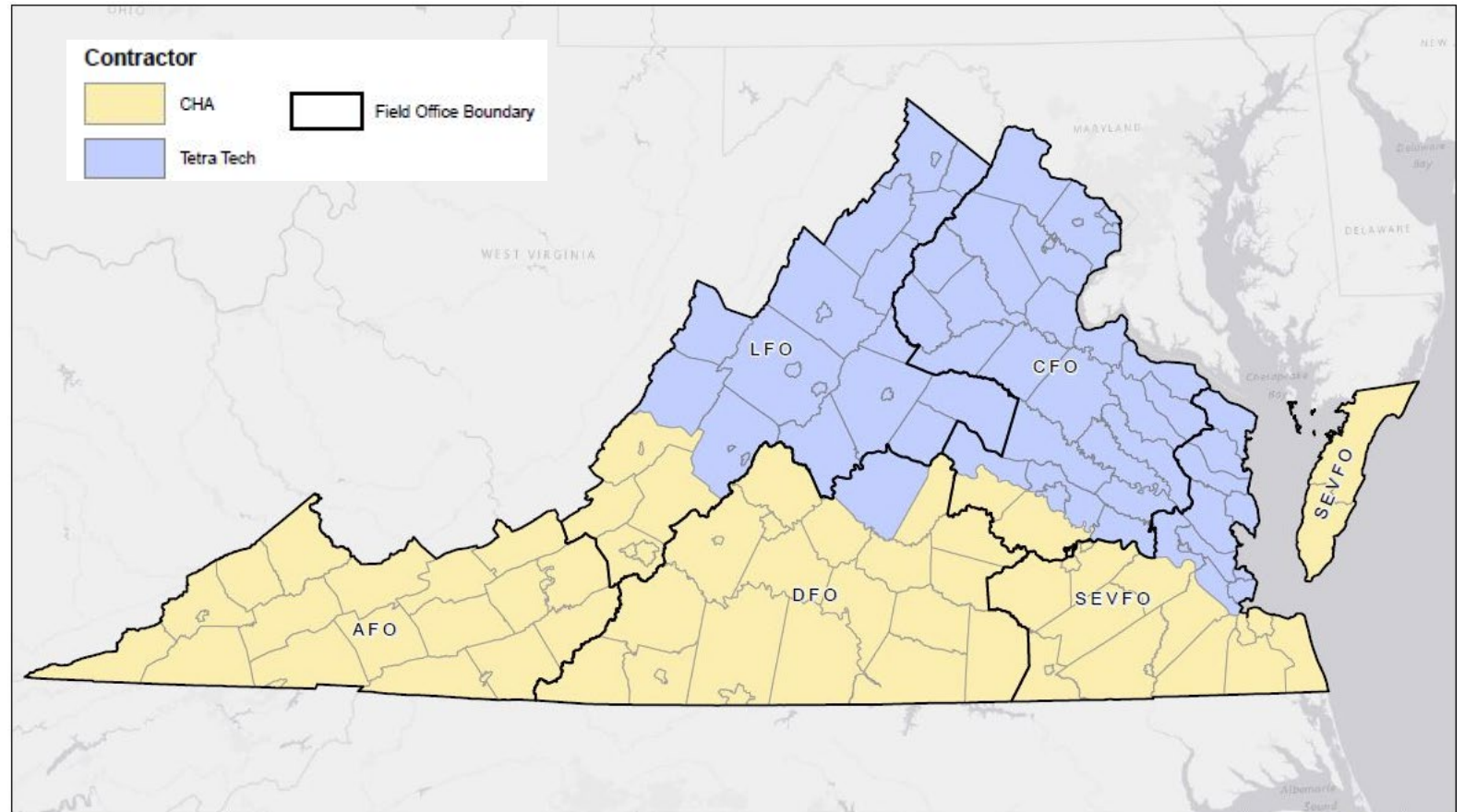


Image credit: <https://www.vdh.virginia.gov/drinking-water/source-water-programs/source-water-protection-assistance-funding-opportunities/>

# Referral Process & Assistance

## Referrals to access assistance

- Direct referral from VDH ODW
- Annual survey request
- System outreach

## Recent assistance provided

- Source Water Protection Plan Creation & Update
  - ODW SWA request
  - Windshield survey
  - Updated potential contaminate source mapping
  - Management and educational strategy development
- Implementation
- Interagency coordination
- Important deadline and opportunity reminders

# Recent SWPP Example: Town of Luray

## Town of Luray SWPP Update 2024



Action Number	Recommended Action	Planned or Actual Completion Date
1	Seek grant funding for Hite Spring back-up pump for increased resiliency to mechanical failures.	Yearly during source water grant cycle until funded
2	Update the Town of Luray Comprehensive Plan to include source water protection. PowerPoint drafted for presentation to Town council and Comprehensive plan drafting stakeholders.	Planned update: 2024
3	Promote education of the residents within the Source Water Protection Area (SWPA). The Town has distributed source water brochures to customers via the Town website, Town office, chamber of commerce, and town kiosks. Brochures were mailed to all residents in their water bill in 2019. The brochures describe the importance of source water protection with a list of general do's and don'ts. See Appendix C for the brochure or visit the Town website: <a href="https://www.townofluray.com/services-2/water-sewer">https://www.townofluray.com/services-2/water-sewer</a> . The Town intends to reprint and redistribute the brochure in 2024.	Completed: 12/2019  Planned progress: 12/2024
4	Grant support to complete water and sewer projects in Appendix B for the 2019 Luray Comprehensive Plan.	Planned progress: 2024
5	Studies to determine the Luray system recharge areas and time of travel may be especially beneficial to the system. It is recommended that, once completed, the Town of Luray use the results of these investigations to update Zone 1 and Zone 2 critical areas.	Grant application 2024-2026

# Recent Implementation Example: Town of Luray

## Educational Outreach Implementation

**What is source water?**  
Everyone lives in a watershed. As water travels over or through the ground, it collects minerals and contaminants which may affect the purity of water resources. Source water comes from streams, rivers, lakes, or groundwater aquifers and supplies drinking water to public utilities and private wells.



**Why protect the source water when we can treat it before drinking?**  
Not all drinking water is treated. Source water protection is especially important for rural residents or those relying solely on private well water without access to industrial treatment and expensive testing used by public suppliers. Additionally, treatment of public water is less costly when the source water is clean, and those savings directly impact user rates.



We all play a part in protecting the health of our water resources. Contaminants may come from various sources including:

- ◆ Storm water runoff
- ◆ Wastewater treatment discharges
- ◆ Agricultural and farming activities
- ◆ Mining and industrial activities
- ◆ Leaking chemical storage tanks



For additional information about your drinking water, please contact us at:  
**Town of Luray**  
(540) 743-1974 • <http://www.townofluray.com/>  
P.O. Box 629  
45 East Main Street  
Luray, VA 22835

For more information on the Town's source water protection plan please visit our website:  
[http://townofluray.com/assets/luray\\_swpp\\_draft\\_08\\_02\\_2018\\_public-version.pdf](http://townofluray.com/assets/luray_swpp_draft_08_02_2018_public-version.pdf)



Town of Luray | PWSID # 2139330

### Source Water Protection

*The responsibility for clean water belongs to everyone!*



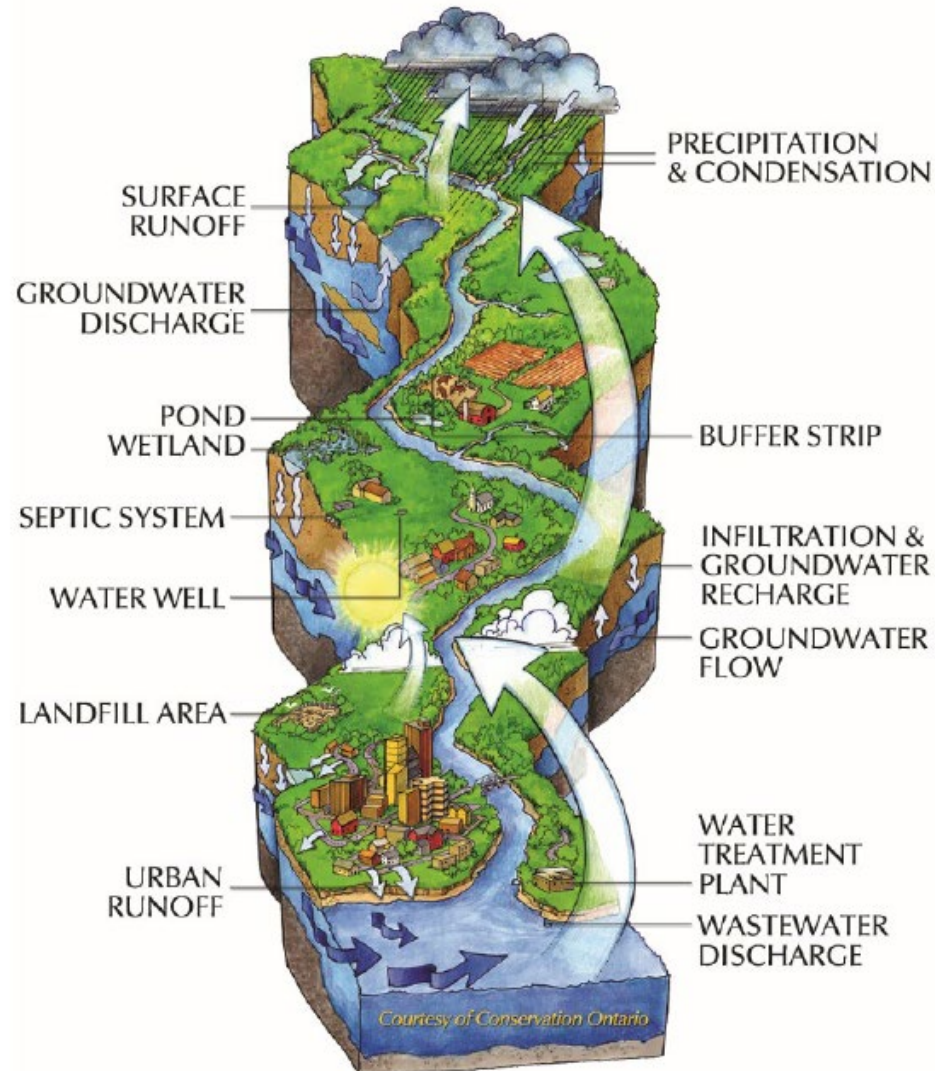
Prepared in cooperation with:





# Watersheds:

*Where does my drinking water come from?*



## Source Water Protection

### What is source water protection?

Activities and land uses conducted in the watershed potentially impact the source water. Protecting source water from contamination reduces risk to public health and may decrease treatment costs. The Virginia Department of Health has established source water protection areas (SWPAs) for public water sources, indicated in the map below. Responsible land use within these areas is critical.



### What is risk identification?

It is important to identify threats to water resources and their likelihood to impact source water. The Town of Luray has developed a Source Water Protection Plan documenting specific risks in the SWPAs and developing management strategies based on potential threats.

### How can you protect source water?

Your public drinking water comes from Hite Spring, Hudson Spring, and a drilled well.

To protect and ensure the sustainability of your drinking water, follow these simple suggestions:

- ◆ Keep animals, livestock and their waste, out of local streams or away from wells.
- ◆ Plant buffer strips where appropriate.
- ◆ Never pour motor oil, hazardous chemicals, or prescription medicines onto the ground, storm sewer, or other drains.
- ◆ Minimize the use of fertilizers, pesticides, and herbicides on your lawn and farm.
- ◆ Do not dump trash or waste near sink holes, well heads, springs, or streams.
- ◆ Do not store or spray chemicals or house livestock near well heads.
- ◆ Participate in cleanup activities in your neighborhood or join a local watershed organization.
- ◆ Learn about your drinking water supply and conserve water at home.

# Additional Assistance Examples

## New Kent Department of Public Utilities

- Educational brochure development and direct to customer printing
- SWPP update
- Private well abandonment investigation, survey, and assistance
- Public well abandonment

## Purcellville Management and Educational strategy goals

- Well fencing
- Asset management plan
- Agricultural runoff diversion
- Drought response plan
- 93-acre nutrient bank establishment
- Well security monitoring

Thank You!

Questions?

Cori Edwards

[Cori.Edwards@tetrattech.com](mailto:Cori.Edwards@tetrattech.com)

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# Town of Middleburg

Source Water Protection Grants

October 24, 2024

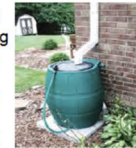


# OVERVIEW

- In 2008 developed first Source Water Protection Plan (SWPP)
- 2013 Major Overhaul of SWPP - TetraTech
- 2018 Update - TetraTech
- Implementation
- VDH Grants, DEQ Grants, Local Funding, ARPA Funds



- ✓ Don't use your toilet to flush trash.
- ✓ Fix leaking faucets, toilets and lines. Consider installing toilets, faucets and appliances designed to save water.
- ✓ Water your lawn and garden in the morning to avoid evaporation of the water. Consider installing a rain barrel at your downspouts to collect rain to water your landscape, instead of using treated water.
- ✓ Use native plants in landscape that don't need extra watering. Use mulch to hold moisture.
- ✓ Don't let your hose run while washing your car.
- ✓ If you are asked to conserve during a drought, don't panic. The Town responds to water shortages based on normal water use. Running extra water during a



<http://deq.virginia.gov/Programs/WaterSupply/WaterQuantity/GroundwaterProtectionSteeringCommittee/WellheadProtection.aspx>

#### For Kids

[www.epa.gov/safewater/kids/index.html](http://www.epa.gov/safewater/kids/index.html)  
[www.epa.gov/watersense/kids/index.html](http://www.epa.gov/watersense/kids/index.html)  
[www.groundwater.org/kc/kc.html](http://www.groundwater.org/kc/kc.html)



#### Contacts

For information about our source water contact:

Town of Middleburg  
P. O. Box 187  
10 W. Marshall Street  
Middleburg, Virginia 20118

Phone: (540) 687-5152

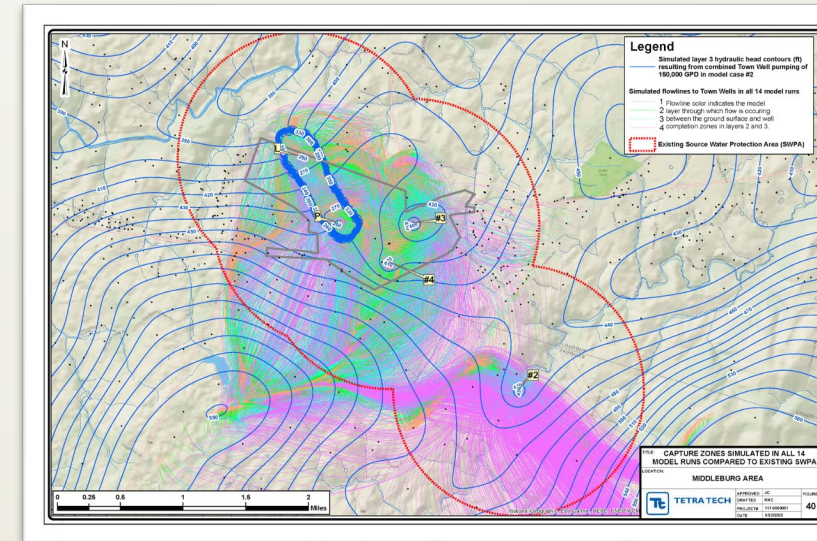


*Protect Our Drinking Water  
Protect Your Health*



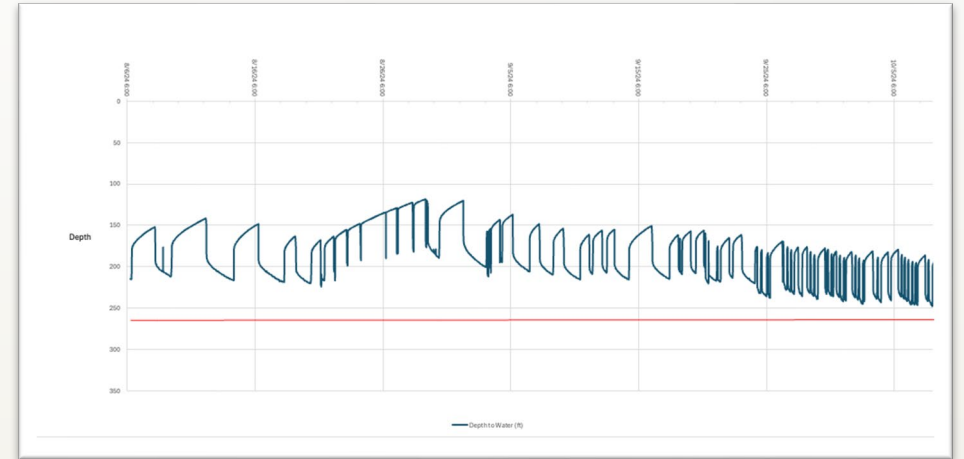
# EXAMPLES

- Fencing of Well Sites
- In-Town Well Closures
- Well Recharge Study



# EXAMPLES

- Septic Conversion Project
- Well Integrity and Data Logging
- Inspection of Sewer Mains
- Future Projects:
  - Well Enhancement
  - Long-Term Water Supply
  - Reducing PSCs



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# Town of Middleburg

Questions?







SOUTHEASTERN PARTNERSHIP FOR  
**FORESTS & WATER**

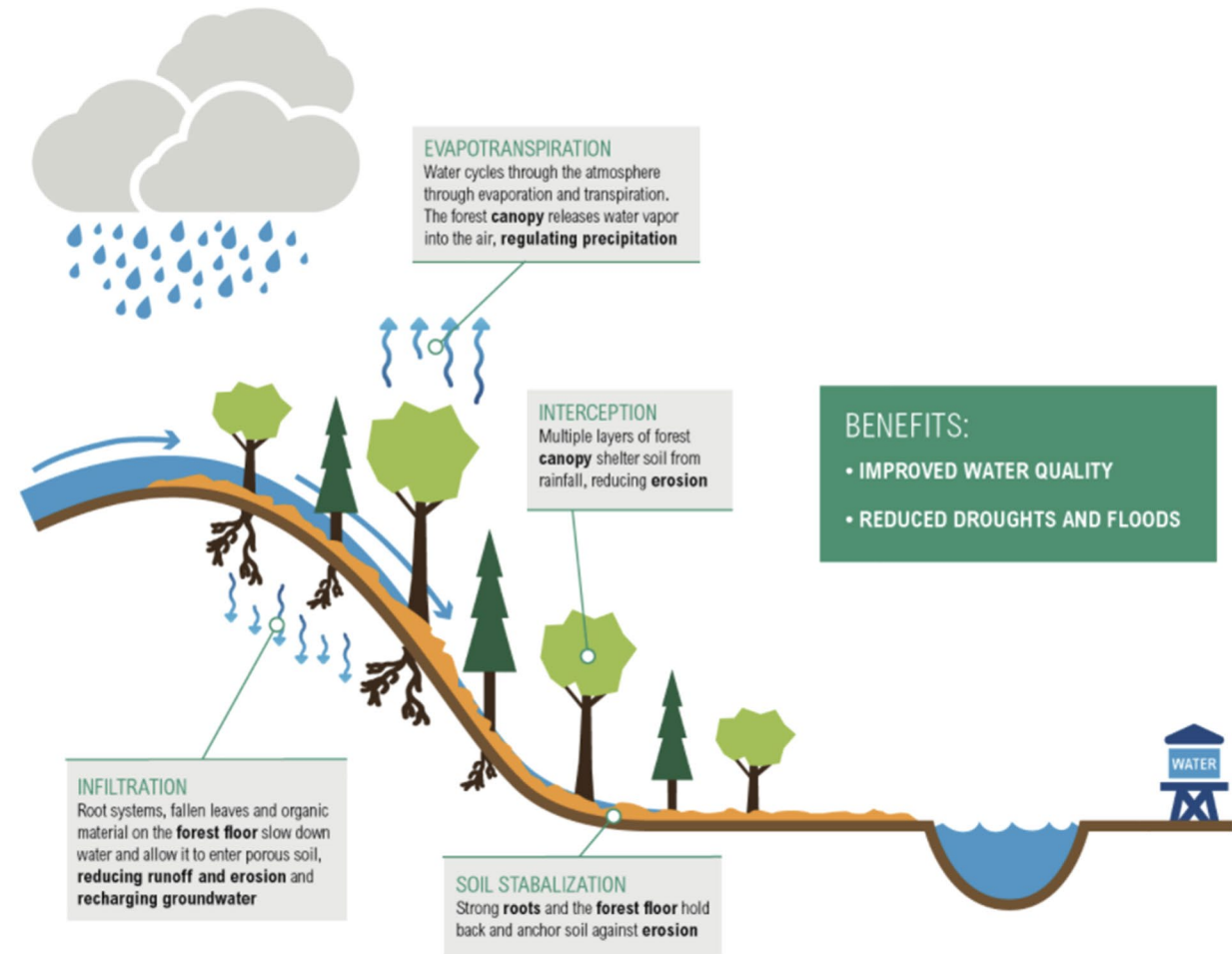
VA SWP Funding Webinar | October 24, 2024



# HEALTHY FORESTS:

- Regulate precipitation
- Reduce flooding
- Reduce erosion
- Filter pollutants
- Recharge groundwater

## How Natural Infrastructure Improves Water Security



water.globalforestwatch.org

 WORLD RESOURCES INSTITUTE



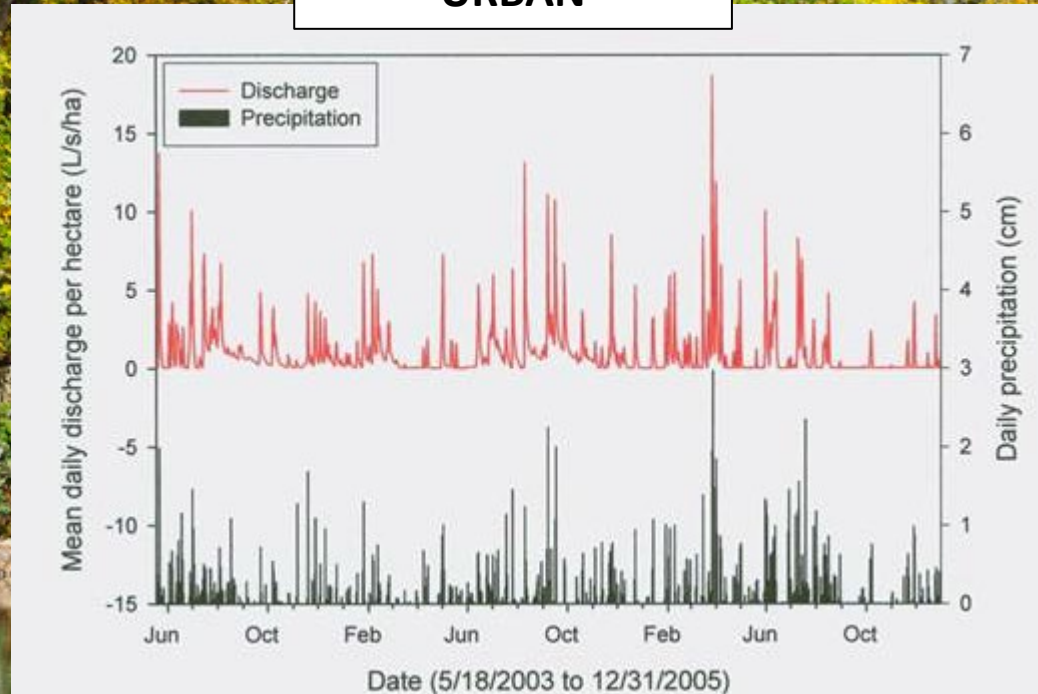
SOUTHEASTERN PARTNERSHIP FOR  
**FORESTS & WATER**

SoutheasternPartnership.org  
Kathy Hawes, [info@southeasternpartnership.org](mailto:info@southeasternpartnership.org)

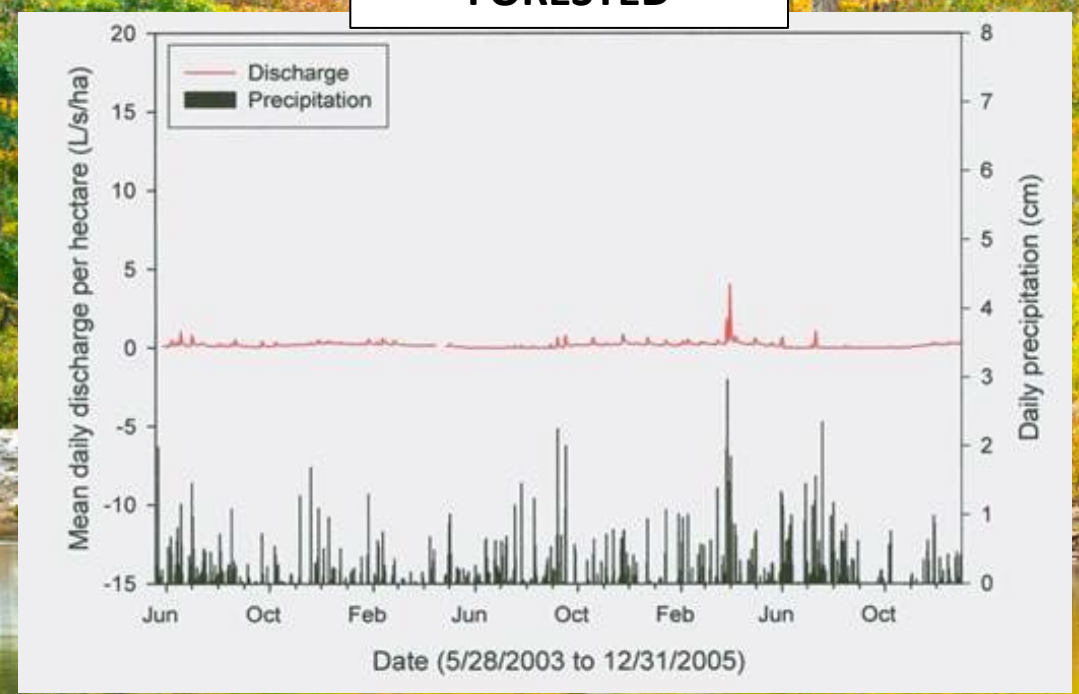
October 24, 2024

# PRECIPITATION vs DISCHARGE

## URBAN

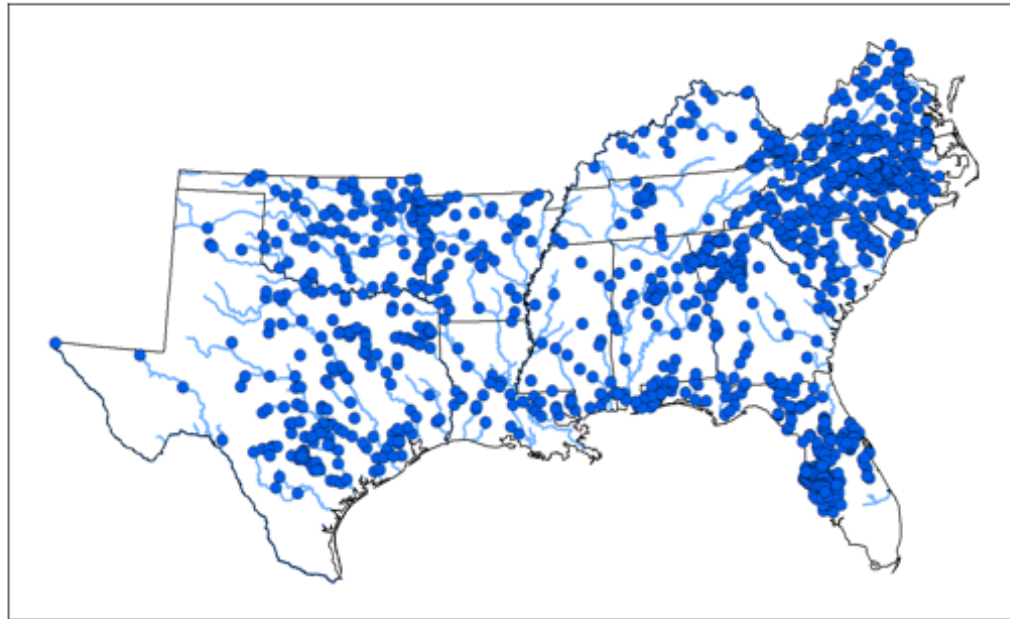


## FORESTED



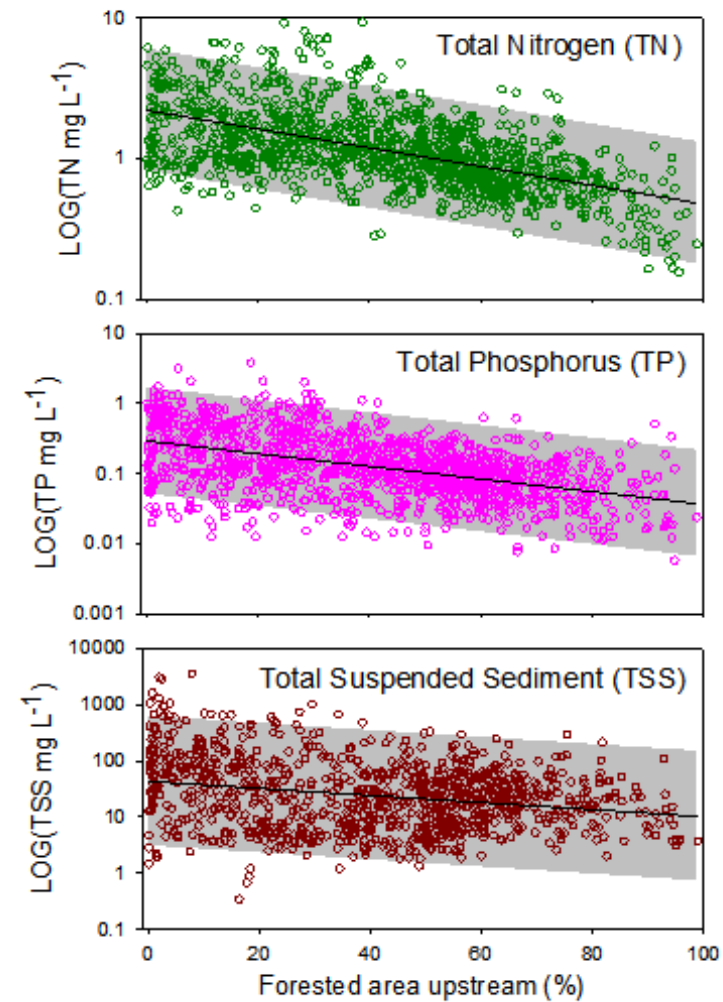
# Observed water quality increases with increasing upstream forest

Water quality monitoring sites

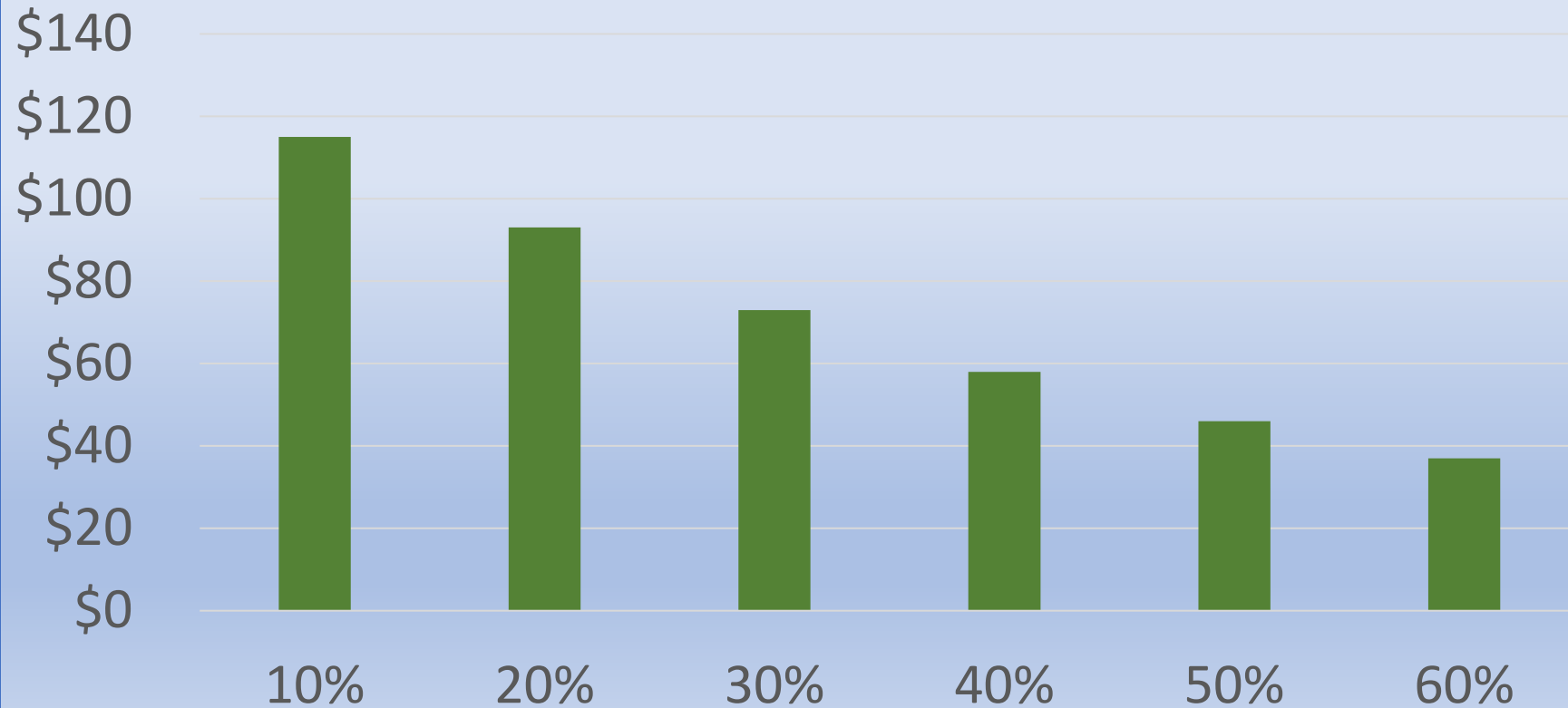


[Caldwell, et al., 2023](#)

1999-2014 mean  
TN, TP, and TSS concentration



## Treatment and Chemical Costs Based on Percent of Watershed Forested



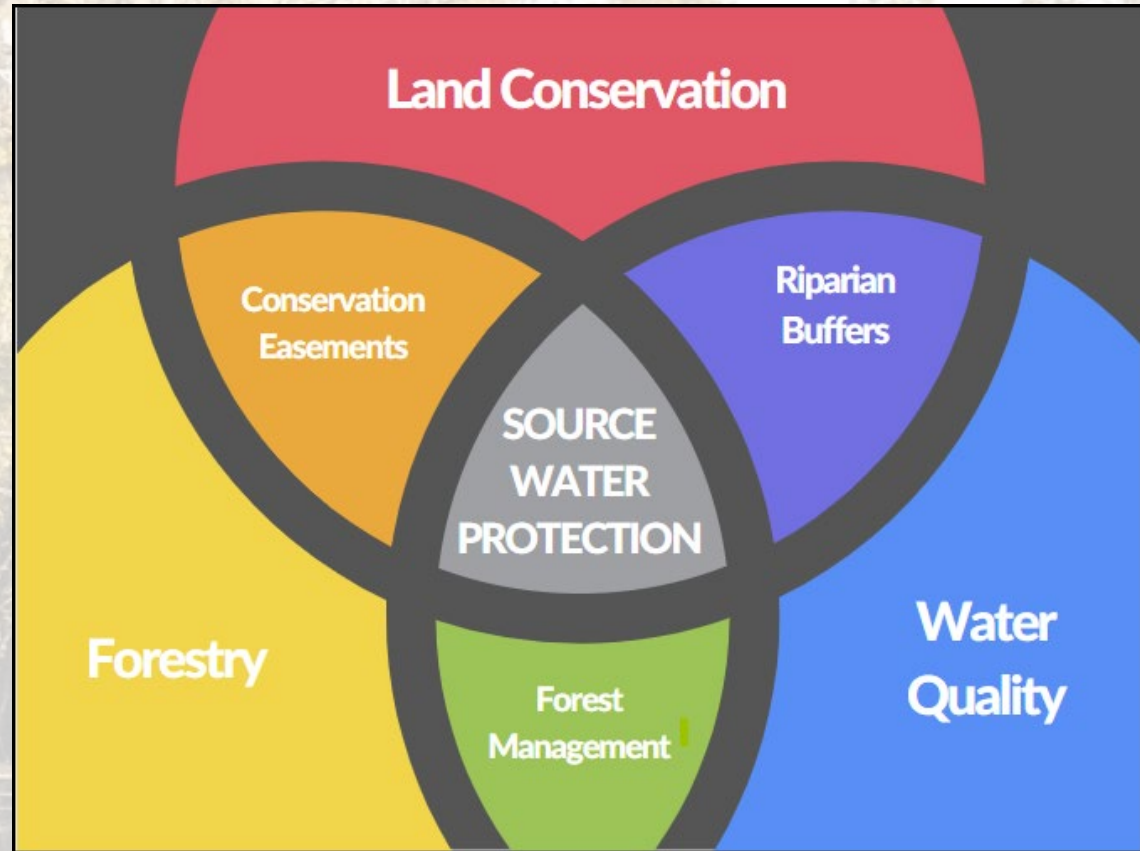
Treatment and Chemical Costs Based on Percent of Watershed Forested. Source: Ernst, C., Gullick, R. and Nixon, K. (2004), *Conserving Forests to Protect Water*. *Opflow*, 30: 1-7. <https://doi.org/10.1002/j.1551-8701.2004.tb01752.x>





SOUTHEASTERN PARTNERSHIP FOR  
**FORESTS & WATER**

**CONSERVE THE  
FORESTS THAT  
PROTECT THE  
DRINKING WATER.**



SOUTHEASTERN PARTNERSHIP FOR  
**FORESTS & WATER**

SoutheasternPartnership.org  
Kathy Hawes, [info@southeasternpartnership.org](mailto:info@southeasternpartnership.org)

October 24, 2024

## Focus: **FORESTS** and **FOREST LANDOWNERS**

To achieve maximum benefit to water quality/quantity:

- Maintain at least 60% forest cover in a watershed
  - ***What % of your watershed is forested?***
- Keep forests as forests (no development)
- Keep forests managed and conserved (forest management plans/conservation easements)



# STRATEGY:

- Host **Forests & Water Forums**
  - To begin **Conversations**
    - And form **Partnerships**
      - That seek **Funding**
        - To **Manage and Conserve Forested Watersheds**

Since 2014, Southeastern Partnership has facilitated  
**18 Forest & Water Forums in 8 States.**





# FLORIDA FORESTS & WATER FORUM 2023

TUESDAY & WEDNESDAY  
OCTOBER 10 & 11, 2023  
UF | IFAS AUSTIN CARY FOREST  
CAMPUS | GAINESVILLE, FLA.

Welcome to the Florida  
Forests & Water Forum  
in Gainesville, Florida!

This event brings together partners from across the state to discuss the connection between healthy, managed forests and clean, reliable drinking water. Join forest landowners, utilities, conservation groups, state agencies, and others as they plan for a safe, secure future for all Floridians.



## DAY 1: FORUM AGENDA

8:30 A.M. - 9:10 A.M. • OPENING

8:30 A.M. REGISTRATION AND NETWORKING  
Stern Learning Center Conference Room  
(breakfast on your own)

9:00 A.M. WELCOME  
Gary Williams, Florida Rural  
Water Association

9:10 A.M. - 10:15 A.M. • SETTING THE STAGE  
*Understand the impact of healthy, managed forests on safe, reliable drinking water in unique Florida landscapes.*

9:10 A.M. FORESTS & WATER PARTNERSHIPS  
Kathy Hawes, Southeastern Partnership  
for Forests & Water

9:30 A.M. THE STATE OF FORESTS IN FLORIDA  
Jarek Nowak, Florida Forest Service

9:45 A.M. THE STATE OF WATER IN FLORIDA  
TBD

10:00 A.M. THE SCIENCE BEHIND THE  
FOREST-WATER CONNECTION  
Katie Glodzik, University of Florida

10:15 A.M. - 10:30 A.M. • BREAK

10:30 A.M. - NOON • PARTNER PANEL  
*Engage in a facilitated Q&A session to identify the differences - and similarities - among partners working on forest/water issues in Florida.*

10:30 A.M. PERSPECTIVES

Jeremy Olson, St. Johns River Water  
Management District

Paul Owens, 1,000 Friends of Florida

Gregory Marshall, Florida Forest Service

Robin Holland, Florida Forest Service

Chris Demers, University of Florida

Ben Williams, 2021 Florida Outstanding  
Tree Farmer of the Year

Ben Lewis, Florida Rural Water Association

Jenn McElroy, Gainesville Regional Utilities

Jami Nettles, Weyerhaeuser Co.

Tyler Macmillan, Tall Timbers

NOON - 1:00 P.M. • LUNCH

Catered by Adam's Rib Co.

FORUM AGENDA CONTINUED ON BACK

# 2023 FLORIDA FORESTS & WATER FORUM

October 10 | Gainesville, FL



## Partner Perspectives

A vast array of organizations and job functions closely related to forests provides a pool of potential new partners for your next project. Additionally, the consideration of diverse stakeholder perspectives, needs, and obligations



01

## Setting the Stage



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Management for  
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Presentation |

02

Management Practices  
recommended  
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impact to ecosystems.  
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(DEP) has scientifically  
BMPs and verified their  
ss at protecting  
ater resources.

ive Water Management  
(MDS) are actively  
cosystem restoration,  
response, recreation  
nt, security, and forest  
nt in pursuit of their  
of Florida's water supply.

rapid population growth means  
in urban areas with costing  
it away from natural lands to  
is. Paul Owens explained why this  
is message. | Presentation |

MORE

## Key Takeaways

Two important audiences that need to hear the messages about protecting forests for the sake of drinking water are legislators and unengaged landowners.

Companies like Weyerhaeuser tree engineers such as forest

Gainesville Regional Utilities strives for 100% beneficial reuse, which means utilizing reclaimed water for continually benefits, such as using it for irrigation to reduce the amount of groundwater withdrawn. It continually seeks solutions through green infrastructure projects.

Managed and protected forestlands are extremely valuable for ecosystems, aesthetic/recreation,

Both financial and technical assistance is available to forest landowners for land management activities and conservation easements, and organizations such as NRCS, Tall Timbers, The Longleaf Alliance, and Alachua Conservation Trust work directly with landowners to take advantage of these programs. The amount of funding is expected to increase dramatically over the next few years as part of the Inflation Reduction Act.

## Tag Team Tools

Inspiration to develop projects or breathe new life into old challenges

04



Resources

Florida Forests & Water

Data Center

Public

Protection

Forest 2.0

Water Administrators

Source

Water Funds Toolbox

Landowner Resources

Protection

Management

Partners for Florida's

Forest Investment Partnerships

Forest & Water

Water Collaborative

& Water Initiative

Watershed Protection Fee

Fee

Watershed Protection

Water Fund

03

## Stewardship Solutions

and Conservation  
management and protection  
ies, achieve outcomes on a  
length and resources of multiple  
approach at Alachua

ection

rapid population growth means  
in urban areas with costing  
it away from natural lands to  
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SOUTHEASTERN PARTNERSHIP FOR  
**FORESTS & WATER**

SoutheasternPartnership.org  
Kathy Hawes, [info@southeasternpartnership.org](mailto:info@southeasternpartnership.org)

October 24, 2024

**TEXAS:**  
Texas A&M  
Forest Service



TEXAS PARTNERSHIP FOR  
**FORESTS & WATER**

**ARKANSAS:**  
AR Forestry  
Division



**Arkansas Forests &  
Drinking Water  
Collaborative**

**SOUTH  
CAROLINA:**  
SC Rural Water  
Association



**SOUTH CAROLINA**  
FORESTS & WATER INITIATIVE

**FLORIDA:**  
FL Rural Water  
Association



FLORIDA PARTNERSHIP FOR  
**FORESTS & WATER**

**GEORGIA:**  
GA Forestry  
Foundation



GEORGIA PARTNERSHIP FOR  
**FORESTS & WATER**



SOUTHEASTERN PARTNERSHIP FOR  
**FORESTS & WATER**

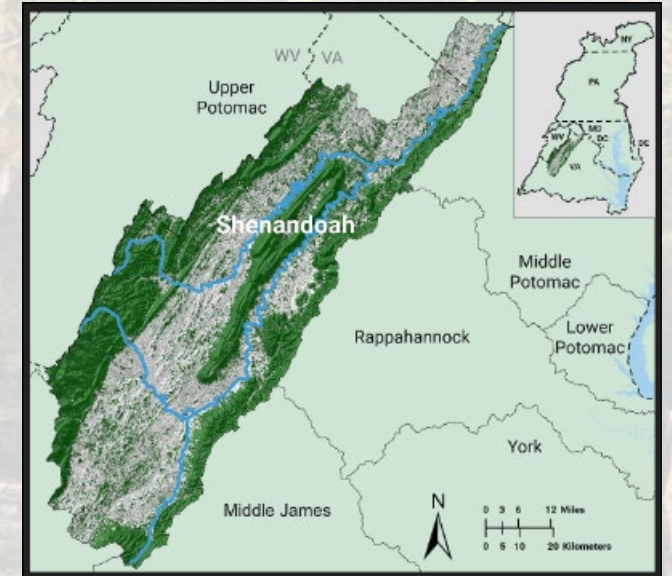
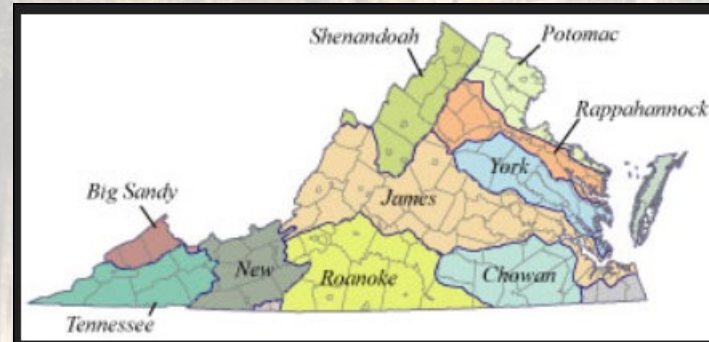
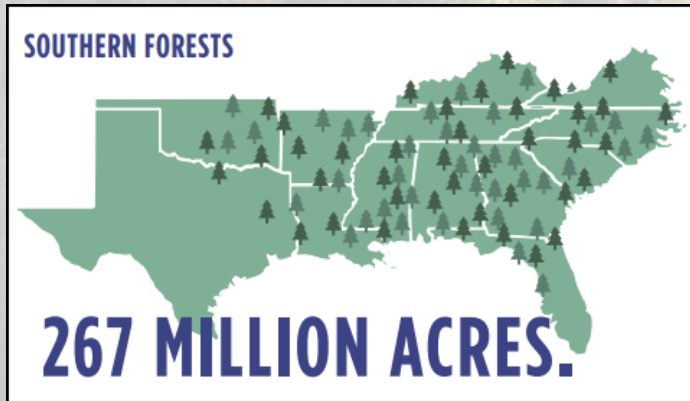
SoutheasternPartnership.org  
Kathy Hawes, [info@southeasternpartnership.org](mailto:info@southeasternpartnership.org)

October 24, 2024

# WATERSHED PROTECTION



# WHERE



## SOUTHEAST

## STATE

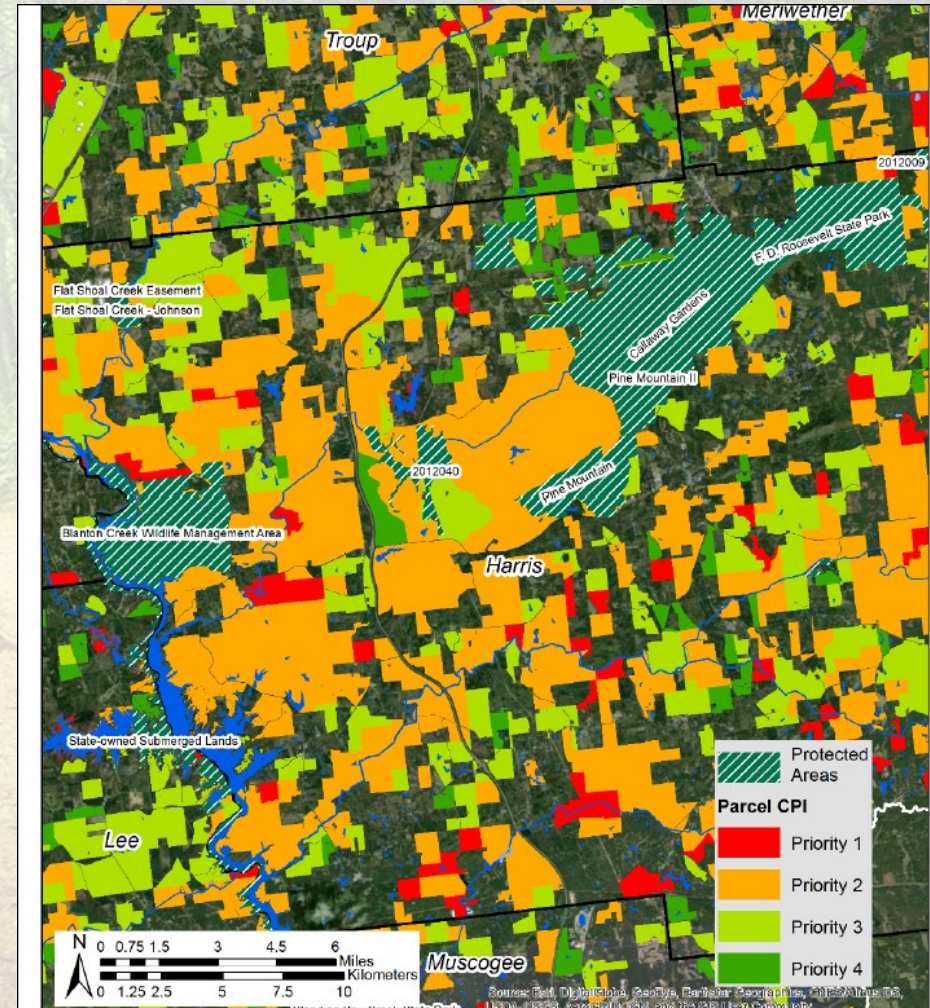
## WATERSHED



# Watershed Management Priority Index

7 Factors:

- Slope
- Proximity to Streams
- Proximity to Ponds/Wetlands
- 100-Year Floodplain
- Soil Erodibility Factor
- Soil Group
- Soil Depth
- Land Use



DIVISION OF WATER: Maps / evaluates priority DW watersheds

CONSERVATION GROUPS: Plan tree plantings and riparian buffer projects

LAND TRUSTS: Purchase/manage key parcels or easements

AG EXTENSION: Writes watershed plan

SOURCE WATER

UTILITY: Adds \$0.10 per meter to bills

WATERSHED GROUP: Conducts landowner outreach

PAPER COMPANY: Contributes money to buy key parcels

DIVISION OF FORESTRY: Writes management / stewardship plans

NRCS: Provides landowner funds through EQIP, CSP...



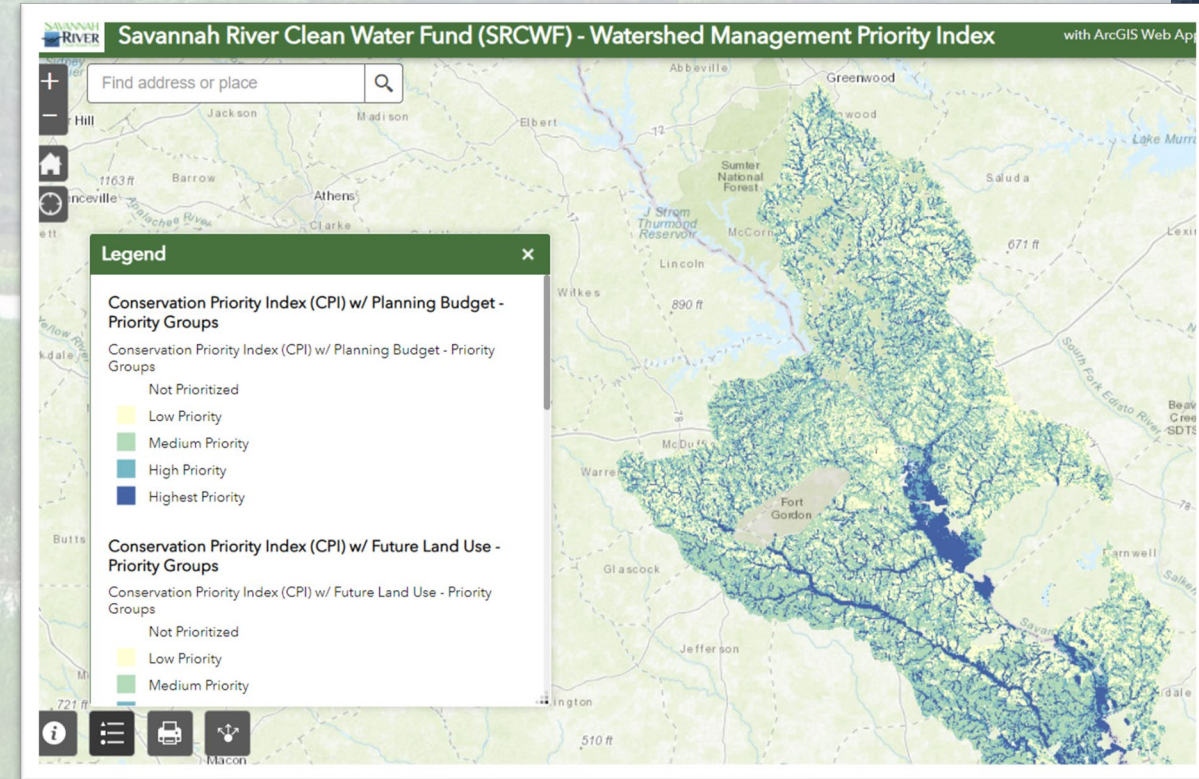
# SAVANNAH RIVER CLEAN WATER FUND

- Forest/Water Collaboratives:
  - Identify **priority forests** within priority watersheds
  - Identify **priority parcels** within priority forests
  - Target specific **forest landowners**

**EXAMPLE:** Savannah River Clean Water Fund's [Conservation Planning Priority Toolkit](#)

## Weighted Factors:

- Forest Index (proximity to streams, soil erodibility, slope, floodplain, etc.)
- Future Land Use Projection (ICLUS data)
- Planning Budgets (using forest land values)



# SEBAGO CLEAN WATERS (Portland, ME Water District)

## COLLABORATION

Utility + land trusts +  
conservation groups +  
companies

- Formed in 2017
- Operates as water fund
- Raised \$10m
- Permanent Protections
- Land Management



**Only 15%** of the Sebago Lake watershed is currently conserved. To maintain the **purity of the water**, we need your help to permanently protect **25% of the forestland**.

**Conserving the forests  
that filter the flow.**



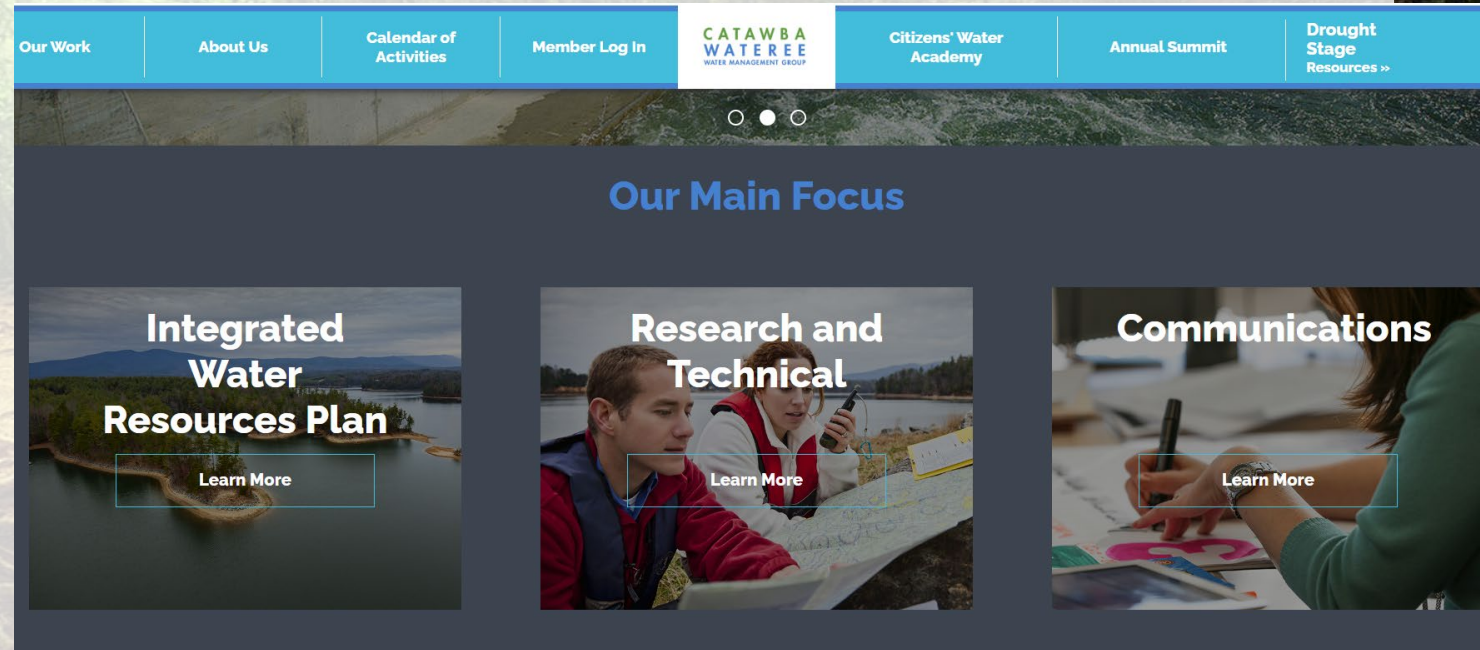


# CATAWBA-WATEREE WATER MGMT GROUP (NC)

## UTILITY BUDGETS

Utilities pay dues to join group. Some funds are used for watershed projects.

Land acquisitions and easements are bought with grants and donations from land trusts.

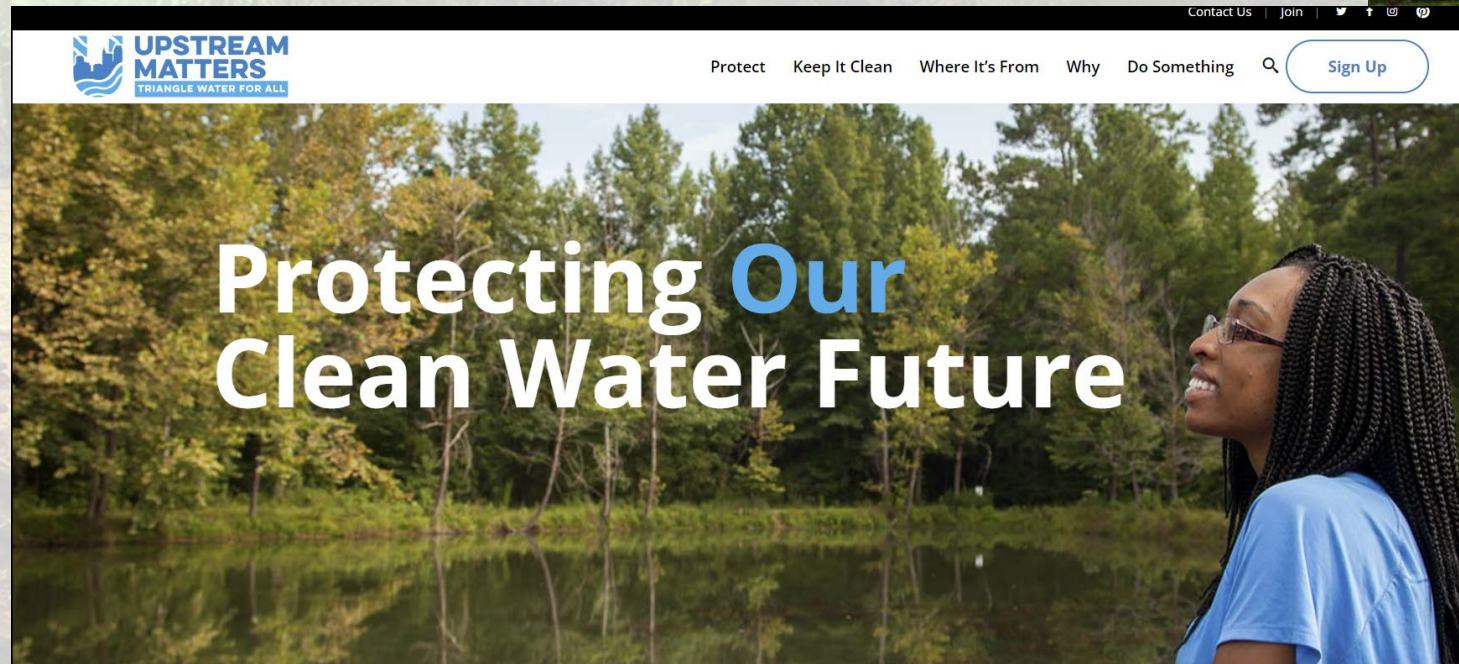


## City of Raleigh Watershed Protection Program

Approx. \$0.40/meter/month  
Generates \$2m+

**Competitive Grant Program:**  
Land Trusts Compete  
for Annual Grants  
For Upstream Land  
Protection Projects

[UpstreamMatters.org](https://UpstreamMatters.org)



# HOW

## CENTRAL ARKANSAS WATER (Lake Maumelle)

### UTILITY

Watershed Protection Fee

\$0.90/meter/month

Generates \$2m+

Green Bond

Used for

Forest Management  
(Prescribed Burns)

Land Acquisition

Conservation Easements



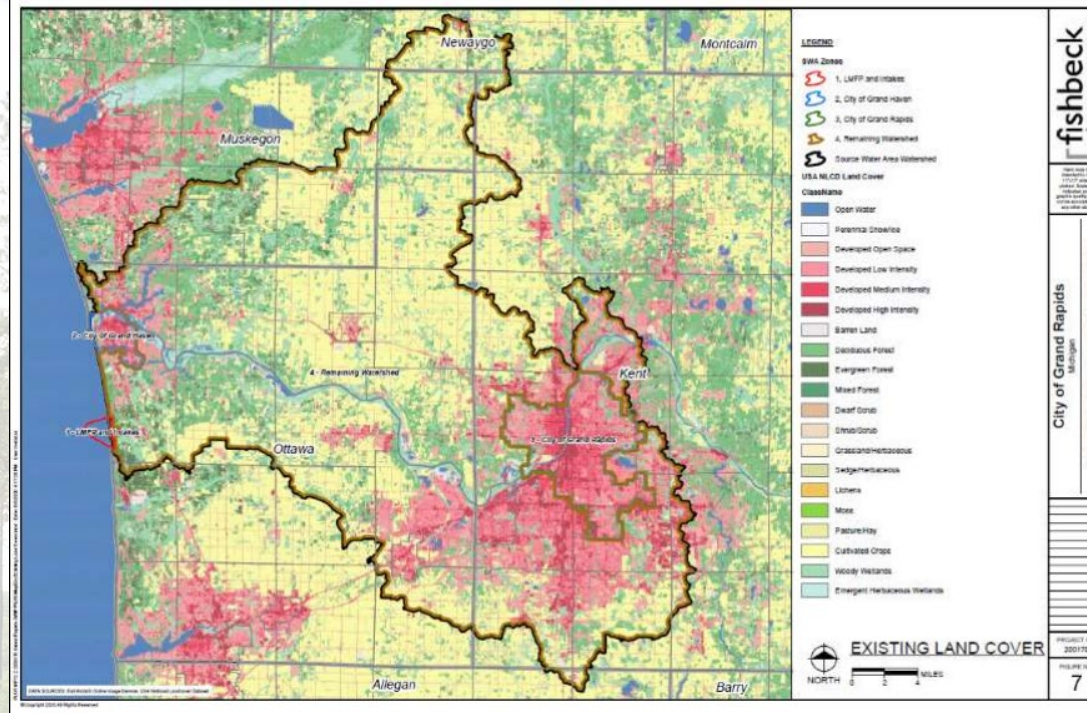
# SOURCE WATER PROTECTION PLANS:

Is land conservation or forest management currently considered?

## FOREST TO MI FAUCET:

(Michigan State University and Michigan DNR)

### Does your source water protection plan ignore land use?



- Grand Rapids SWIPP
- Pretty map!
- No land use analysis...
  - Urban? ~30%
  - Agriculture? ~50%
  - Forest? ~20%
  - Wetland?
- No management...
- What can you do?



# SOURCE WATER PROTECTION PLANS:

TX: Texas Commission on Environmental Quality

FL: Florida Rural Water Association

VA: Office of Drinking Water (and contractors)

## Includes:

- Forest-Water Connection
  - Data
  - Treatment Cost Impact
- Tools/Resources
- Recommendations

**FOREST & WATER MANAGEMENT & CONSERVATION**  
**CHAPTER 4**

Healthy, managed forests protect water supplies by filtering pollutants, managing precipitation, absorbing runoff, and preventing erosion. It is in the best interest of drinking water utilities to evaluate their watersheds for forest cover and to invest in forest management and conservation around and upstream of source water intakes.

Higher percentages of forest cover upstream of groundwater wells directly correlate to reduced levels of Total Nitrogen (TN), Total Phosphorus (TP), and Total Suspended Solids (TSS). This also aids in the reduction of bacterial constituents such as coliform, salmonella, and vibrio. (See image.) Investments in managing and conserving forests upstream can result in savings in filtration and treatment costs as well as reduced need for infrastructure upgrades.

**Observed water quality increases with increasing upstream forest**

Caldwell, et al., 2023

**Tools/Resources**

- Florida Rural Water Association's Source Water Protection Technical Assistance Program provides practical assistance to rural and small communities with the development and implementation of local source water protection plans. These plans are designed to prevent the deterioration of source water such as streams, rivers, lakes or underground aquifers that are used to provide public and private drinking water
- EPA's Water Contaminant Information Tool (WCIT) is a secure database of information on priority contaminants for drinking water and wastewater security. It contains data that will assist in planning for and responding to drinking water contamination threats and incidents. As a planning tool, WCIT is meant to support vulnerability assessments, emergency response plans, and site-specific response guidelines. As a response tool, WCIT is designed to provide real-time information on water contaminants to inform response decisions.
- The interactive online US Forest Service mapping tool called Forests to Faucets provides crucial data by revealing forested lands most critical for drinking water protection.  
<https://storymaps.arcgis.com/collections/4e450a6c7ed24f0c8ae4abc1c07843b7?theme=>
- SWAPP stands for Source Water Assessment and Protection Program. This program is meant to ensure that your drinking water is safe, not just at the tap, but at its source. The Florida Department of Environmental Protection



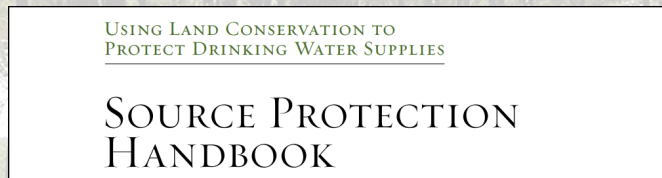
# [SoutheasternPartnership.org/Resources](https://SoutheasternPartnership.org/Resources):

## Videos

[AWWA: Protecting Drinking Water at the Source:  
Working with the USDA Forest Service \(2019\)](#)



[Source Protection Handbook:  
Using Land Conservation to Protect Drinking  
Water Supplies \(2014\)](#)



FOREST WATER RELATIONSHIP  
VIDEO SERIES



FORESTRY AND LAND  
CONSERVATION VIDEO



WILDFIRE IMPACT ON DRINKING  
WATER QUALITY



PREScribed FIRE IMPROVES  
DRINKING WATER QUALITY



SOUTHERN REGION



49% of Southern land is forested.



# Clean water grows on these trees.

Okay, not technically, but forests do provide the cleanest water of any land use to keep drinking water safe and reliable.

## TOTAL SOUTHERN WATER SUPPLY

State & Private forests provide

# 44.3%

of the total water supply.

That's equal to **97.8 trillion gallons.**

HOW MUCH LIQUID IS THAT?  
That's enough water to fill a stack of five gallon buckets that would extend all the way to the sun & back **24 TIMES.**



## SOUTHERN FORESTS



## POPULATION SERVED

ALL FORESTS  
**113 MILLION PEOPLE**



STATE AND PRIVATE FORESTS  
**57 MILLION PEOPLE**



FEDERAL FORESTS  
**56 MILLION PEOPLE**



## THE CHALLENGE

Population is expected to increase more than **30%** over the next **40 years** compared to 2012 levels.

2052

POPULATION INCREASE OF 30%

2012

## THE THREAT

**UP TO 23 MILLION ACRES** of our forests are forecasted to be converted to other uses by **2060.**



## HEALTHY FORESTS ARE CRITICAL TO DRINKING WATER

Healthy, managed forests provide the cleanest water of any land use, and help keep drinking water safe, reliable, and affordable.

TO SUM THINGS UP...



## FOREST STEWARDSHIP AND BMPs

Foresters work with landowners to develop forest stewardship plans and implement Best Management Practices that protect soil and water resources.



**"Our investments in healthy forests today lead to higher quality drinking water in our communities tomorrow."**

David LaFrance, CEO of American Water Works Association  
Learn more by watching our video! <https://bit.ly/316jTko>

## DRINKING WATER DEPENDS ON HEALTHY FORESTS

Contact for more information

Wib Owen | [wib@southernforests.org](mailto:wib@southernforests.org)

Kitty Weisman | [kitty.weisman@icloud.com](mailto:kitty.weisman@icloud.com)



Lee, Ning; Dobbs, G. Rebecca; Caldwell, Peter V.; Minial, Chely Fort; Bobstad, Paul V.; Nelson, Stacy; Sun, G. 2020. Quantifying the role of State and private forest lands in providing surface drinking water supply for the Southern United States. Gen. Tech. Rep. SRS-248. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 405 p. Caldwell, P., Mukboon, C., Ford-Minial, C., Cohen, E., Krieger, S., Sun, G., McNulty, S., and Bobstad, P.V. 2014. Quantifying the role of National Forest system lands in providing surface drinking water supply for the Southern United States. General Technical Report SRS-197. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 105 p.



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[Clean Water Act and Your Drinking Water](#)

[Map/Collaboratives Near You](#)

[Member Links & Resources](#)

[▼ Events](#)

[News](#)

# Where Safe Water Begins





SC



# Thank you!

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[SoutheasternPartnership.org](https://SoutheasternPartnership.org)  
[info@southeasternpartnership.org](mailto:info@southeasternpartnership.org)

Kathy Hawes