State of Tennessee's Clean Water Act (CWA) Section 319 Nonpoint Source Grant Program Annual Report—FY2022

TN Department of Agriculture

TENNESSEE DEPARTMENT OF AGRICULTURE
LAND & WATER STEWARDSHIP SECTION

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Flat Creek in Knox County

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Byrd Lake at Cumberland Mountain State Park, Cumberland County

Acronyms

Ac	Acre
AMD	Abandoned Mineland Drainage
ARC	Appalachian Regional Commission
ARCF	Agricultural Resources Conservation Fund
BFEC	Brushy Fork Environmental Consulting
BMP	Best Management Practice
CRC	Cumberland River Compact
CWA	Clean Water Act
E. coli	*Escherichia coli*
EQIP	Environmental Quality Incentives Program
FFY	Federal Fiscal Year
ft	Feet
FTE	Full Time Equivalent
GEEE	Girls Experiencing Environmental Engineering
GESA	Governor's Environmental Stewardship Award
GRTS	Grants Reporting and Tracking System
HUC	Hydrologic Unit Code
K-12	Kindergarten Through 12th Grade
LiDAR	Light Detection and Ranging
NPS	Nonpoint Source
NRCS	Natural Resources Conservation Service
NWQI	National Water Quality Initiative
Ph	Phase
RC&D	Resource Conservation and Development Council
RFP	Request for Proposals
SE TN RC&D	Southeast Tennessee Resource Conservation & Development
SFY	State Fiscal Year
SNA	State Natural Area
STEM	Science, Technology, Engineering, and Mathematics
STEPL	Spreadsheet for Estimating Load Reduction
STS	Strategic Technology Solutions
SWCD	Soil and Water Conservation District
TDA	Tennessee Department of Agriculture
TDEC	Tennessee Department of Environment and Conservation
TEC	Tennessee Environmental Council
TMDL	Total Maximum Daily Load
TN	Tennessee
TN-NPS	Tennessee Nonpoint Source Program
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
UT	University of Tennessee
UTC	University of Tennessee—Chattanooga
yr	Year

Executive Summary

Introduction

The Tennessee Department of Agriculture (TDA) manages the Nonpoint Source Program (aka, 319 Program) in Tennessee with approval and oversight of the US Environmental Protection Agency (USEPA). This federal program provides funds to states, territories and Indian tribes for installing Best Management Practices (BMPs) to stop NPS pollution; providing training, education, and demonstrations; and monitoring water quality.

The Tennessee Nonpoint Source Program (TN-NPS) is non-regulatory and promotes voluntary, incentive-based solutions. The program is a cost-share program, meaning that it pays for 60% of the cost of a project. It is the responsibility of the grantee to provide the remaining 40%, usually in cash and "in-kind" services. While the 319 Grant is the primary focus of this Annual Report, it is important to note that the TN-NPS extends beyond the USEPA grant; Tennessee funds additional projects under State-funded programs such as the Agricultural Resources Conservation Fund (ARCF). Together, the goal of the TN-NPS program is restore impaired waterbodies, prevent decline of high-quality waterbodies, and promote education of non-point source issues.

Notable Accomplishments

A total of 140 BMPs were implemented by Section 319 grantees in federal fiscal year (FFY) 2022. Practices installed by TDA partners include septic system repairs, cover crops, streambank and shoreline stabilization, and riparian forest buffers. In FFY2022, $1,341,100 was awarded to watershed projects, and $178,273 was awarded to education/outreach projects, which was over double the previous year's investment. Although fewer practices were implemented in FFY2022, the overall estimated load reduction for nitrogen, phosphorus, and sediment exceeded last year's estimates.

During FFY2022, a new reimbursement system was developed, and debuted in the FFY2023 Request for Proposals (RFP) that was released on September 14, 2022. The new system will allow for higher reimbursement of "targeted" agricultural practices, as well as an increased cost-share for projects in Tennessee's economically distressed counties.

A Success Story for McCutcheon Creek was developed for McCutcheon Creek, and submitted to USEPA in August, 2022. A copy of the approved Success Story can be found in Appendix C.

Also in FFY2022, TN-NPS began coordinating with the State of Tennessee's Division of Strategic Technology Solutions (STS) to develop a new, comprehensive grants management system (SmartSimple). Upon launch of the new system, the proposal submittal process for applicants will be streamlined, as well as project milestone tracking and facilitating reimbursement request processing.

The TN-NPS attempted to conduct the Annual Participant Survey in the Summer of 2022; unfortunately, uncharacteristically low responses were received. A brief summary of the results of the Annual Participant Survey can be found in Appendix D.

Tennessee's ARCF, which is administered by TN-NPS staff, had a record-breaking year. The ARCF program provided over $9 million in assistance to Tennessee farmers to install agricultural BMPs such as cover crops, alternative watering facilities, exclusion fencing, and heavy use areas during the State's FY22 (July 1, 2021—June 30, 2022). One ARCF cooperator, Sam Pleasants Cattle Farm in Fayette County, won the Governor's Environmental Stewardship Award (GESA) for Agriculture and Forestry. The farm was provided with assistance in the installation of grade stabilization structures and critical area plantings to combat erosion.

Tennessee has experienced several challenges in FFY2022 that impacted conservation efforts, including inclement weather, residual effects of the COVID-19 epidemic, quickly rising supply costs, and labor shortages.

FFY2022 Program Highlights

- ***Funded $1,341,100 in watershed projects and $178,273 in statewide/education/outreach projects for FFY2021.***
- ***140 BMPs were implemented in FFY2022.***
- ***One Success Story was submitted and approved by USEPA.***
- ***Development of a new grants administration software commenced which will streamline applications and project tracking.***
- ***Nitrogen, phosphorus, and sediment loads were reduced by an estimated 34,206.6 pounds, 14,294.8 pounds, and 3,323.0 tons, respectively.***

Overview and Authority

The Tennessee Department of Agriculture (TDA) manages the 319 Nonpoint Source Program with approval and oversight of the US Environmental Protection Agency (USEPA). The Tennessee—Nonpoint Source Program (TN-NPS) applies for and is awarded a grant from the USEPA each year in order to implement this program. This Annual Report is required under a provision of each year's grant award. Specifically, the report fulfills the requirements of Section 319(h)(11) of the federal Clean Water Act. This report is written each year to inform the public, the USEPA, and ultimately the U.S. Congress of the state's progress in the area of reducing nonpoint source pollution in Tennessee. While this report should not be construed to be a complete description of all TN-NPS program activities, it does describe the most important features of the program within the federal fiscal year (FFY) 2022 (i.e., October 1, 2021–September 30, 2022).

Today, nonpoint source (NPS) pollution is the nation's largest source of water quality problems. It's the main reason that approximately 40 percent of our surveyed rivers, lakes, and estuaries are not clean enough to meet basic uses such as fishing or swimming. NPS pollution occurs when water runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, and coastal waters or introduces them into ground water. NPS pollution is widespread because it can occur any time activities disturb the land or water.


Example of a Watershed Restoration Project—Rain garden, Davidson County.

To address this diffuse type of pollution, congress established the Nonpoint Source Program, funded by the USEPA through Section 319 of the Clean Water Act. The Tennessee Department of Agriculture administers the Nonpoint Source Program in Tennessee on behalf of USEPA. This program provides funds to states, territories and Indian tribes for installing Best Management Practices (BMPs) to stop NPS pollution; providing training, education, and demonstrations; and monitoring water quality.

The TN-NPS is non-regulatory and promotes voluntary, incentive-based solutions. The program is a cost-share program, meaning that it pays for 60% of the cost of a project. It is the responsibility of the grantee to provide the remaining 40%, usually in cash and "in-kind" services. It primarily funds two types of projects:

1. **Watershed Restoration Projects** improve an impaired waterbody, or prevent a non-impaired water from becoming placed on the *Lists of Impaired and Threatened Waters* (formerly the 303(d) List). Projects of this type receive highest priority for funding. All projects involving BMPs must be based on an approved "Watershed Based Plan".

2. **Educational Projects** funded through TN-NPS raise awareness of practical steps that can be taken to eliminate NPS pollution. Projects funded can either have a statewide, general public aim or can focus in on local, targeted audiences with specific messages.

Example of an Educational Project—Goodlettsville WaterFest, Sumner County.

No funds from the TN-NPS are given directly to individual landowners. All grant money is awarded to organizations/entities that administer and oversee the local project. Eligible applicants include non-profit organizations, local governments, state agencies, soil conservation districts, and universities. These organizations then can enter into work agreements with individual landowners to reimburse them for work done on their land. All payments made with grant funds are on a reimbursement basis.

Program Highlights from FY2022

The Tennessee Department of Agriculture (TDA) relies on the cooperation of stakeholders, partnerships, and local landowner support to implement many components of the Tennessee Nonpoint Source Program (TN-NPS) statewide. The information contained in this Annual Report highlights many of the accomplishment that have been collectively achieved by these collaborative efforts during FFY2022.

SIGNIFICANT PROGRAM MILESTONES IN FISCAL YEAR 2022:

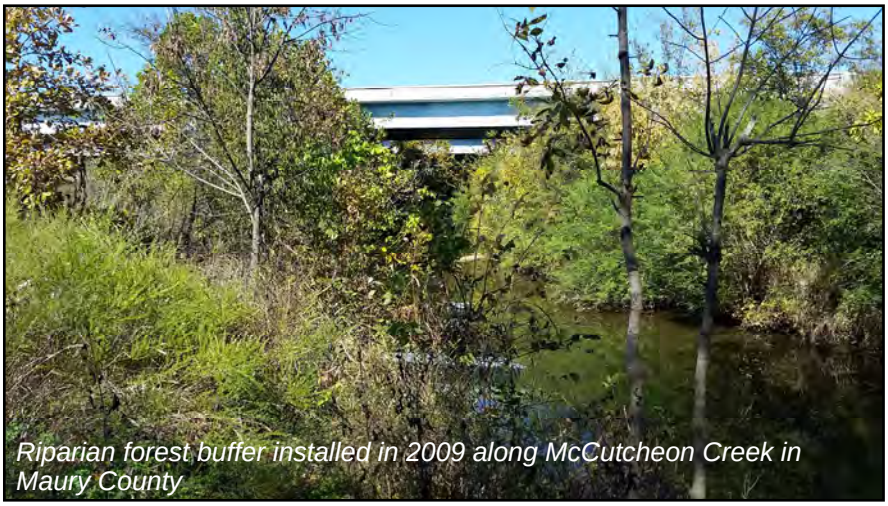
Best Management Practices Installation for FFY2022

In FFY2022, 140 BMPs were installed with assistance from grant funds (from all open grants). The top five BMPs, in order of decreasing frequency, were infiltration basins, alternative watering facilities, septic system repairs/ replacements, cover crops, and streambank/shoreline protection. Although the number of practices installed for FFY2022 was less than FY2021, the estimated pollutant load reduction for nitrogen, phosphorus, and sediment resulting from the BMPs exceeded last year's totals. High inflation, and the rising cost of labor likely limited our partners' ability to complete additional projects.

New Reimbursement Strategy for Cooperators

In FFY2022, a new system of determining cost share rates using 319 grant funds was developed for cooperators abd was announced in the FFY23 Request for Proposals (RFP) released on September 14, 2022. This new system is referred to as a "Prescribed Rate" system. The new system is based largely on the USDA-NRCS Environmental Quality Incentives Program's (EQIP) payment schedule. However, the TN-NPS system offers higher reimbursement rates (compared to EQIP rates) in many situations by providing additional incentives for priority practices (including livestock exclusion fencing, riparian forest buffers, and streambank protection among others) and work done in economically distressed counties as designated by the Appalachian Regional Commission (ARC). The intent of the new system is to target areas of the most need, and steer agricultural project towards desired BMPs.

Success Stories / Impaired Waters Delistings



Riparian forest buffer installed in 2009 along McCutcheon Creek in Maury County

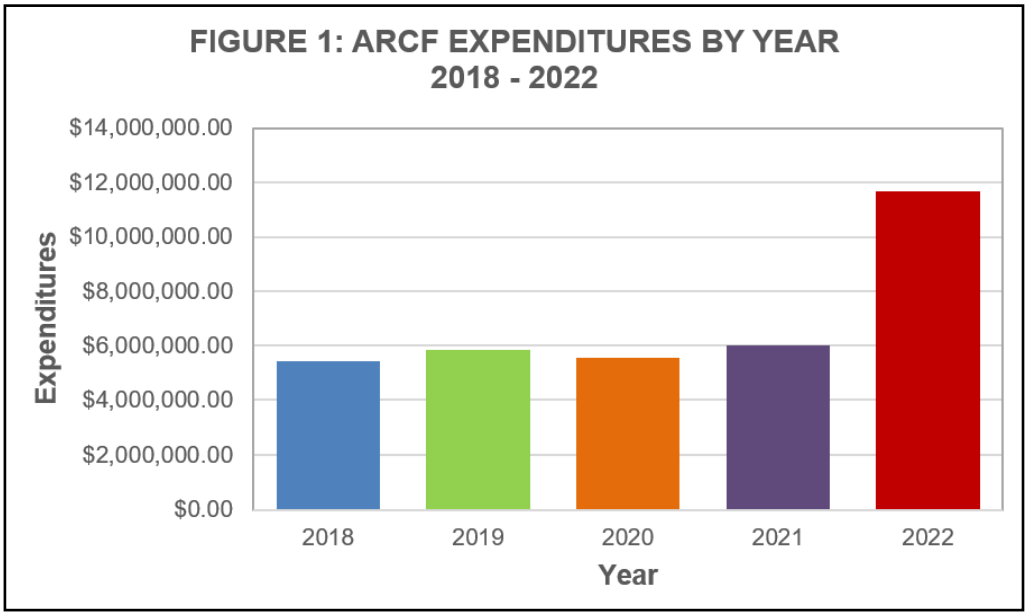
A Nonpoint Source Success Story for McCutcheon Creek in Williamson County was developed and submitted to USEPA in August, 2022, and accepted by USEPA in October, 2022. McCutcheon Creek was added to Tennessee's Clean Water Act (CWA) section 303(d) list in 2002 for siltation after a bioreconnaissance survey in 1999 yielded ambiguous results, and Tennessee Department of Environment and Conservation (TDEC) staff observed sand, silt, and high levels of turbidity. Multiple partners in the Rutherford Creek Upper Watershed identified and mitigated pollutant sources. Using private donations of time and money, as well as funding from CWA section 319 and the Tennessee's Agricultural Resources Conservation Fund (ARCF), the habitat improved. After a 2019 survey indicated a healthy habitat, all 12.27 miles of McCutcheon Creek were delisted for siltation/sedimentation on Tennessee's 2022 List of Impaired and Threatened Waters. The final draft story (approved, but not published, as of the date of this report), can be found in Appendix C.

Annual Participant Survey

The TN-NPS program attempted to conduct the Annual Participant Survey in the Summer of 2022 to evaluate our performance managing the 319 Grant program. Unfortunately, despite a reminder being sent several weeks after the initial survey was sent, very few recipients responded to the survey. Only seven participants completed the survey (fewer than half compared with FFY2021. The limited number of results rendered the Annual Participant Survey impractical for evaluating the Section 319 Grant program (Appendix D). Moving forward, TN-NPS staff will re-assess the survey process to identify ways to increase engagement.

Record Year for the Agricultural Resources Conservation Fund

In 1991, the State of Tennessee's 97th General Assembly established the Agricultural Nonpoint Water Pollution Control Fund (Tennessee Code, Annotated §67-4-409(l)) for the purpose of implementing a program for the abatement and prevention of nonpoint source pollution that may be caused by agricultural activities. Revenue for the program (ARCF) is derived from the Recordation Tax on the transfer of real property, from which ARCF receives 1.5 cents per $100 of property value, and from appropriations of the General Assembly (depending on the year). The ARCF program has long been a companion to the Section 319 Grant—much of the work funded through ARCF is similar to the Section 319 Grant, but it is limited to the agricultural sector. Assistance is facilitated primarily through Soil and Water Conservation Districts (SWCD), Resource Conservation and Development Councils (RC&Ds), universities, and other agricultural associations. State Fiscal Year (SFY) 2022 (July 1, 2021—June 30, 2022) saw record revenues for the fund, which translated to record expenditures supporting nonpoint pollution reduction in agriculture through BMPs, education/outreach, and research (Figure 1).



ARCF-Funded Project Wins Governor's Environmental Stewardship Award

In past years, several TN-NPS-funded projects have won Governor's Environmental Stewardship awards (GESA). In FFY2022 there was another winner as ARCF cooperator (Sam Pleasants Cattle Farm) won a GESA for Agriculture and Forestry. The farm received financial assistance from ARCF to make improvements to mitigate erosion/reduce sediment.

Newspaper article for Sam Pleasants Cattle Farm


THE FAYETTE FALCON
OLDEST NEWSPAPER IN WESTERN TENNESSEE
Prestigious 2022 Governor's Environmental Award was Awarded to Mr. & Mrs. Sam Pleasants of Rossville

Grade stabilization structure and critical area treatment installed at Sam Pleasants Cattle Farm in Fayette County, supported by ARCF

The Rising Cost of Conservation in Tennessee

With the COVID-19 transmission ebbing, many of our partners began to resume activities to near pre-pandemic levels. Calendar year 2022, however, has seen some of the highest inflation in last 40 years (U.S. Bureau of Labor Statistics, 2022). In the Southeast Region, of which Tennessee is a part, inflation for some goods and services have risen 7.9 percent in the last year alone (U.S. Bureau of Labor Statistics, Southeast Consumer Price Index Card, December, 2022). The increase in the price of materials has limited the number and size of projects partners are able to install. In addition, housing and industrial development are continuing to grow, with the Chattanooga, Tennessee housing market projected to be one of the Top 10 housing markets in 2023 (Realtor.com). Anecdotally, cooperators in the Section 319 Grant program have indicated increasing difficulty in getting bids for earthwork and trouble scheduling contractors for work varying from septic repairs to pipeline installations. Cooperators, especially those with relatively small projects, are having trouble competing for contractors against larger, more lucrative subdivision developments. With the increased competition for labor, not only has the cost of supplies risen, but the cost of installation has soared, as well.

Attendance at National and Regional Nonpoint Source Meetings

- John McClurkan attended the Tennessee Stormwater Association Annual Conference on October 19, 2021.
- John McClurkan presented at the Tennessee Association of Conservation Districts on November 19, 2021.
- John McClurkan attended (virtually) the USEPA Region 4 Agriculture Commissioners Meeting on December 1, 2021.
- John McClurkan presented (virtually) the Tennessee Nutrient Taskforce meeting on December 9, 2021.
- John McClurkan attended (virtually) the Gulf Hypoxia Taskforce meeting on December 14, 2021.
- John McClurkan met with the Ohio River Valley Water Sanitation Commission on May 26, 2022 to discuss the nonpoint portion of the Ohio River Restoration Initiative.
- John McClurkan presented at the Tennessee Agricultural Production Association meeting on July 19, 2022 in Gatlinburg, Tennessee.
- John McClurkan presented at the Tennessee Association of Conservation Districts Annual Meeting on August 7—9, 2022 in Knoxville, Tennessee.
- Heidi McIntyre-Wilkinson presented (virtually) at the Tennessee Environmental Council's Policy and Practice Forum on October 1, 2021.
- Heidi McIntyre-Wilkinson presented (virtually) at the Tennessee Environmental Conference on October 25, 2021 with Tennessee State University and the Tennessee Department of Health.
- Heidi McIntyre-Wilkinson presented (virtually) at the Greater Nashville Regional Council Environmental Round Table on November 10, 2021.
- Heidi McIntyre-Wilkinson hosted the Greater Nashville Regional Council Environmental Round Table on February 2, 2022.
- Heidi McIntyre-Wilkinson presented at the Environmental Show-of-the-South Conference on May 13, 2022 in Chattanooga, Tennessee.
- Heidi McIntyre-Wilkinson presented at the Tennessee Conservation District Employee Association Fall Meeting on September 26—28, 2022 at the Discovery Park of America in Union City, Tennessee.
- Sam Marshall attended (virtually) a series of meetings of the Hypoxia Task Force Coordinating Committee meetings throughout the fiscal year.
- Sam Marshall created and met with (virtually) an advisory committee of NRCS staff, local SWCD staff, and 319 grant partners to discuss and refine the newly proposed Prescribed Rate payment system to be unveiled for ARCF in FFY2022.
- Sam Marshall spoke to a University of Tennessee, Knoxville graduate class on February 2, 2022 about developing 9-element Watershed Based Plans. The class later produced such a plan that has now sought funding for implementation.
- Sam Marshall and John McClurkan attended the United States Army Corps of Engineers (USACE) "Partners Meeting" on April 28, 2022.
- Sam Marshall represented TDA-LWSS at three meetings of the Governor's Humphries County/City of Waverly Flood Mitigation Task Force in June, July, and August 2022.
- Sam Marshall spoke at the Cold Creek Restoration Project Field Day hosted by the Lauderdale County SWCD on June 16, 2022.
- Sam Marshall and Macee Fredlake attended the 1st Annual "National Stream Restoration Conference" in Nashville, TN on August 1-3, 2022.

FFY2017 Grant Closeout

In 2021, the TN-NPS officially requested that their FFY 2017 319 grant with USEPA be extended by a year, due to continuing impacts to our partners from the COVID-19 pandemic. The request was granted, and resulted in the FFY2017 grant being extended until September 30, 2022. The FFY2017 Closeout Report was submitted to USEPA on December 28, 2022, with a remaining balance of $20,871.12.

FFY2018 Grant Closeout

The FFY2018 was also closed-out in FFY2022. All funds were expended from the FFY2018 grant prior to the end of the contract, with the Closeout Report submitted to USEPA on December 28, 2022.

FFY2022 Grant Awarded

The TN-NPS released an RFP on September 9, 2021 to solicit applicants for the 319 Grant award expected for FFY2022. Proposals were due by December 1, 2021, and a total of 13 applications were received. All together, applicants requested a total of $2,656,706 in grant funding, which far surpassed the amount of funding available ($1,519,273). Funding was provided for 10 of the 13 project proposals submitted in FFY2022. As is often the case, many of the projects that received funding were not awarded the requested amount, due to budget limitations. The FFY2022 grant, totaling $2,681,800 was awarded on September 22, 2022. The following table provides a list of projects funded from the FY2022 grant and how much grant funding each received.

Table 1: FFY2022 Grant Awards

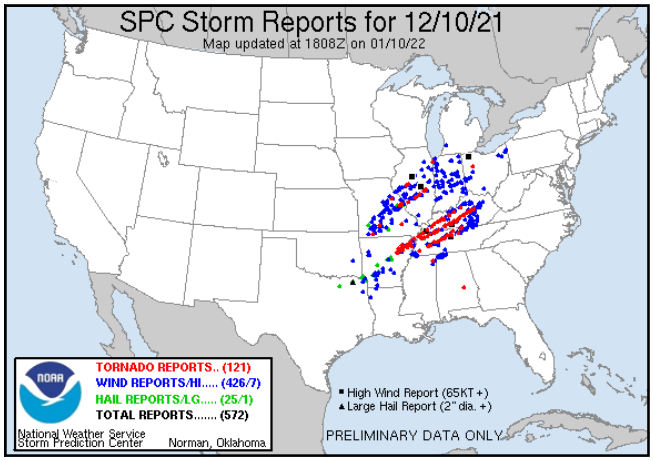
Name of Applicant	Name of Project	319 Grant Money Allocated	Funding Type
Blount County Soil and Water Conservation District	Baker and Centenary Creek Restoration Initiative, Phase IV	$172,000	Watershed
Blount County Soil and Water Conservation District	Pistol Creek Watershed Restoration Initiative, Phase II	$462,000	Watershed
City of Tullahoma	Upper Rock Creek Restoration Project	$55,000	Watershed
Green Interchange	Spring Creek Restoration Plan Implementation	$104,000	Watershed
Monroe County Soil and Water Conservation District	Reduction of NPS in Sweetwater Creek Watershed	$243,000	Watershed
Southeast Tennessee Resource Conservation and Development Council	Conasauga River Tributaries Project, Phase III	$155,000	Watershed
Tennessee Aquarium	Rivers to Ridges Gallery: Interactive Watershed Education	$67,500	Program
Tennessee Department of Environment and Conservation	Water Quality Monitoring on NPS-Impaired Streams 2022	$150,000	Watershed
Tennessee Resource Conservation and Development Council	Envirothon 2022	$20,500	Program
Tennessee Tech University	Watershed-Based NPS Environmental Justice in Tennessee	$92,273	Program
	TOTAL	**$1,519,273**	

Volunteer clean-up at North Creek Park in Davidson County

Total NPS Spending in FFY2022

In FY2022. TN-NPS again increased the utilization of 319 grant money as compared with FFY2021. Spending was increase in all three categories (program management, watershed restoration, and education/outreach). The increase is partly due to an overall rebound of activities due to fewer pandemic restrictions (especially outreach). Another possible reason for the increased spending is the extremely high inflation, which caused the cost of watershed restoration projects to skyrocket (despite approximately 40 fewer BMPs being installed during FFY2022). The total amount of 319 grant funds spent in FFY2022 was $2,765,972.75, up from $2,341,800.30 last year. Education and outreach spending more than doubled since the last fiscal year, rising to $40,293.06 (from $18,525.90).

Additional challenges we and our partners faced in FFY2022 include two federally declared natural disasters. In December of 2021, thunderstorms and tornadoes impacted West and Middle Tennessee (FEMA-4637-DR-TN, declared in February, 2022). In February of 2022, a severe winter storm struck West Tennessee (FEMA-4645-DR-TN, declared in March, 2022), including many of the same counties still trying to recover from damage from the month prior.



Right: Storm reports for December 10, 2021, courtesy of the National Weather Service, Storm Prediction Center

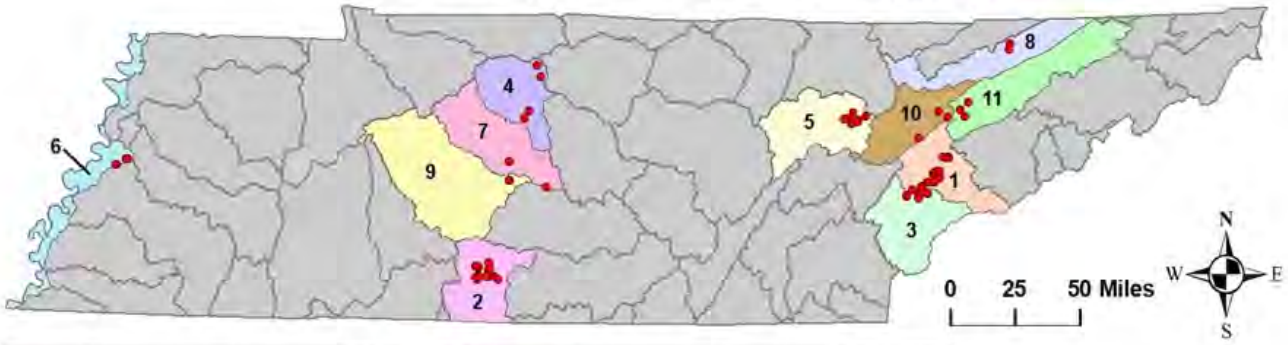
Program Management expenditures consist of salaries and benefits for 12.96 Full-Time Equivalents (FTEs), travel, supplies, and indirect costs originating from the TN-NPS program.

Table 2: 319 Program Spending in Tennessee – FFY2022

Nature of Expense	Amount of 319 Dollars Spent
NPS Program Management	**$1,272,283.86**
Watershed Restoration Projects	**$1,453,395.83**
Educational Projects	**$40,293.06**
TOTAL:	**$2,765,972.75**

The following two figures illustrate the spending from FFY2022. Figure 2 is a geographical representation of where Section 319 grant funds were spent in FFY2022 across the state on best management practices from watershed restoration projects by watershed (8-digit hydraulic unit code). Please note that each marker may represent more than one BMP on a particular site.

FIGURE 2: 319 FUNDS SPENT FOR BMPs PER WATERSHED IN FFY2022 (OCTOBER 1, 2021 – SEPTEMBER 30, 2022)



WS No.	Watershed Name	HUC8 No.	Total Incentive Payments in WS
1	Fort Loudon Lake	06010201	$194,836
2	Lower Elk River	06030004	$105,328
3	Lower Little Tennessee River	06010204	$69,317
4	Cheatham Lake	05130202	$40,120
5	Emory River	06010208	$39,821
6	Lower Mississippi River - Memphis	08010100	$35,573

WS No.	Watershed Name	HUC8 No.	Total Incentive Payments in WS
7	Harpeth River	05130204	$28,000
8	Upper Clinch River	06010205	$26,759
9	Lower Duck River	06040003	$21,026
10	Lower Clinch River	06010207	$17,025
11	Holston River	06010104	$13,338

LEGEND

- BMPs (Please note: each marker may indicate more than one BMP installed at that location)
- HUC8 Watershed Boundaries for Watersheds with 319 BMPs installed in FFY2022
- HUC8 Watershed Boundaries (no 319 BMPs installed in FFY2022)

Tennessee Department of Agriculture
December 13, 2022

Norris Reservoir at Big Ridge State Park, Union County

Figure 3 below shows a number of things related to 319 spending. The red bars show the amount of grant money spent in FFY2021 from each of our active grants. The green bars show the cumulative amount spent or drawn-down from each of our active grants. Each subsequent grant year has less and less money spent as each year is more and more recent, but the TN-NPS program has a strong history of spending all of the money from each grant before it is closed out. Blue bars represent the original amount of each grant award.

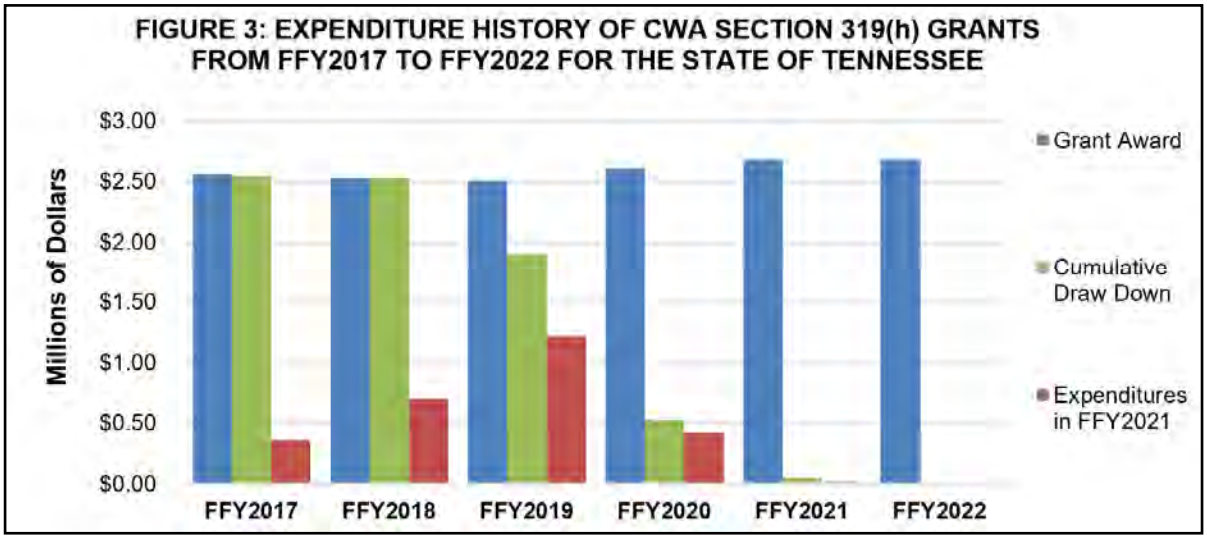
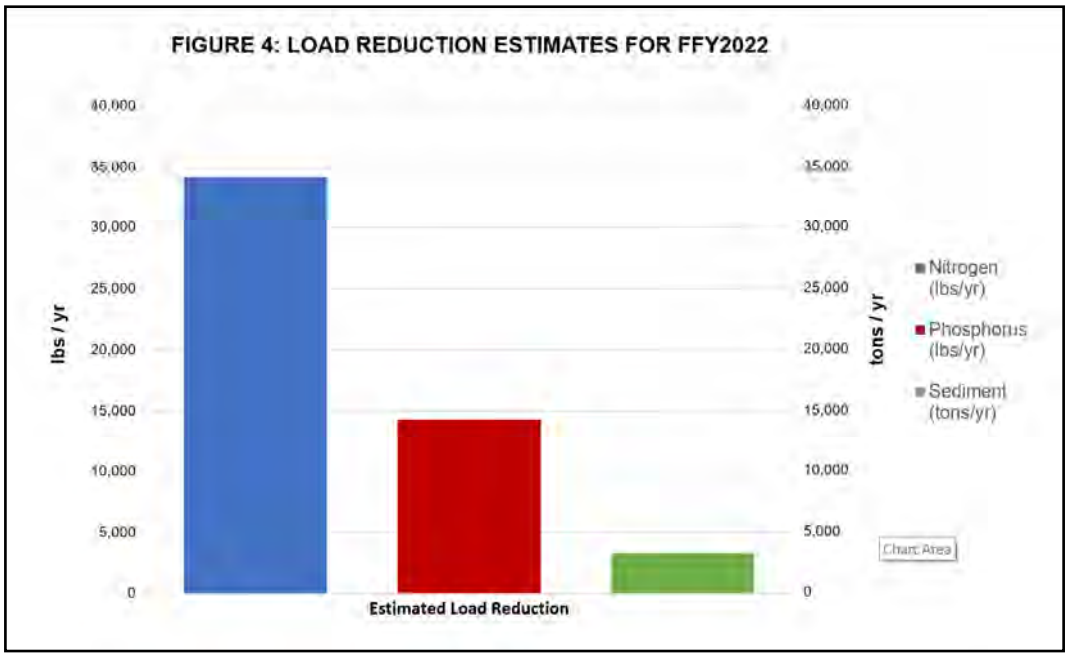


Figure 4 shows our estimated load reductions for nitrogen, phosphorus, and sediment from all projects with BMPs for FFY2022. Estimates were derived using the Spreadsheet Tool for Estimating Pollutant Loads (STEPL) Model. In FFY2022, despite fewer BMPs being installed by partners, load reduction for all three pollutants increased slightly over FFY2021. This result is likely due to larger projects, impacting greater areas compared to the previous year's BMPs. The load reduction estimates for FFY2022 are 34,206.6 pounds of nitrogen, 14,294.8 pounds of phosphorus, and 3,323.0 tons of nitrogen.

In FFY2022, payments were made to partners for 140 BMPs statewide. Load reduction estimates are indicated in Figure 4 below. Nitrogen, phosphorus, and sediment are three of the most common impairments for Tennessee; thus, pollutant load reductions are key to removing stream reaches and bodies of water from the *Lists of Impaired and Threatened Waters*. Since delisting streams is the top priority of the Tennessee NPS program, these estimates help track interim progress towards that goal. Overall success is determined by the number of stream miles or lake acreage that is removed from the *Lists of Impaired and Threatened Waters* as they again meet the State standards for their designated uses.

The data was derived from Grants Reporting and Tracking System (GRTS) entries and the State of Tennessee's, Land & Water Stewardship database query, based on the date of payment, dating from October 1, 2021 to September 30, 2022. **NOTE: Data units for sediment are in tons/year (yr).**



GUIDING PRINCIPLES

The successful administration of any program requires some level of planning and the establishment of goals. The TN-NPS's new Management Program Document is part of that process, and one significant aspect of that plan is the goals that have been set. Both long term goals and annual goals have been identified, all of which correspond to the four elements of TN-NPSs overriding mission statement.

TN-NPS Program Mission Statement

The mission of the TN-NPS is to: measurably reduce nonpoint source pollution in Tennessee, measurably improve Tennessee's water quality, continuously strengthen and expand partnerships, and increase the water resources stewardship of Tennessee's citizens.

The specific long and short term goals will be the basis of all future NPS program projects in Tennessee. The TN-NPS will tie each future project to specific long term goals and annual milestones. These goals are fully described in Section 3 (*Strategy for Addressing Nonpoint Source Pollution Issues*) of the new Management Program Document.

2020 - 2024 TN-NPS Long Term Goals

Long Term Goal No. 1:
Restore impaired water bodies (i.e., those on the *Lists of Impaired and Threatened Waters**) by implementing best management practices (BMPs) that address nonpoint source pollution.

Long Term Goal No. 2:
Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.

Long Term Goal No. 3:
Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.

Long Term Goal No. 4:
Track interim progress towards restoration of impaired water bodies.

Long Term Goal No. 5:
Protect unimpaired/high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.

Long Term Goal No. 6
Fulfill all obligations under grant award agreement with USEPA annually.

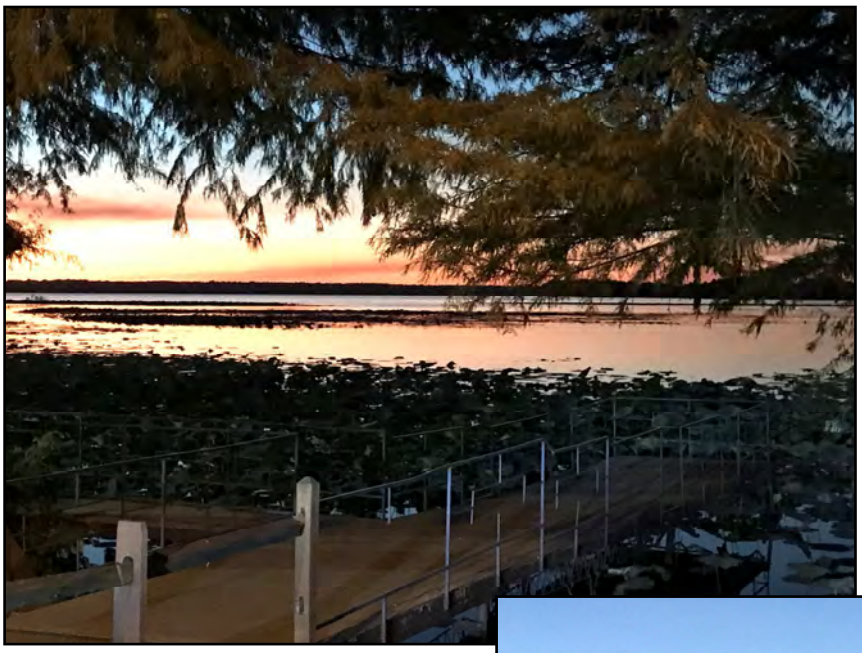
* *The State of Tennessee's* List of Impaired and Threatened Waters *is now used in lieu of the 303(d) list, as it includes all impaired waters, not only those waters for which a Total Maximum Daily Load (TMDL) still requires development.*

Status of All Projects Active in FFY2022—as of 11/18/22 (balance)

Grantee Name—Project Name	Amount Awarded ($)	Balance ($)	Expiration Date
Appalachian RC&D—*Gap Creek-Watauga River Restoration Project*	$475,000.00	$475,000.00	07/31/2025
Austin Peay State University—*Project WET*	$16,500.00	$16,500.00	12/31/2022
Blount County SWCD—*Baker & Centenary Creeks Restoration , Phase (Ph.) III*	$213,000.00	$35,195.83	07/31/2022
Blount County SWCD—*Pistol Creek Watershed Restoration Initiative*	$330,000.00	$0.00	07/31/2022
Blount County SWCD—*Watershed Learning Laboratory*	$15,090.00	$15,090.00	07/31/2025
Caribbean SEA (WaterWays!)—*Reducing Non-point Source Pollution in Mountain Creek Watershed Phase 2*	$200,000.00	$0.00	07/31/2022
Caribbean SEA (WaterWays!)—*Reducing Non-point Source Pollution in Shoal Creek and Middle Creek Watersheds*	$280,000.00	$257,660.78	07/31/2023
Claiborne County SQCD—*Davis Creek/Cawood Branch Watershed Restoration Project*	$115,000.00	$97,953.00	07/31/2025
Clinch-Powell RC&D—*Clinch-Powell Rivers Restoration*	$205,500.00	$173,326.63	07/31/2024
Cocke County Soil SWCD—*Del Rio Restoration*	$79,000.00	$79,000.00	07/31/2024
Cumberland River Compact—*Brown's Creek Restoration, Ph. I*	$103,000.00	$0.00	07/31/2022
Cumberland River Compact—*Bank Stabilization at Moss Wright Park and Mansker Creek Watershed Restoration Project: Phase II*	$160,000.00	$0.00	07/31/2022
Cumberland River Compact—*Harpeth River-Spencer Creek Watershed Restoration Project, Ph. I*	$163,000.00	$163,000.00	07/31/2025
Cumberland River Compact—*Oak Grove/West Fork Red River Restoration Project*	$157,500.00	$149,264.06	07/31/2024
Cumberland River Compact—*River Friendly Farms*	$42,130.00	$25,335.94	07/31/2023
Giles County SWCD—*Pigeon Roost Creek Watershed Project*	$325,000.00	$83,566.94	07/31/2023
Knox County—*Beaver Creek, Ph. III*	$115,100.00	$68,448.58	07/31/2024
Knox County—*Stock Creek Restoration, Ph. II*	$115,000.00	$171.22	07/31/2022
Knox County SWCD—*Flat Creek Restoration, Ph. II*	$95,000.00	$84,172.00	07/31/2024
Lauderdale County SCD—*Cold Creek Restoration Project, Ph. II*	$345,000.00	$27,732.31	07/31/2022
Morgan County SCD—*Crooked Fork Restoration Project*	$224,000.00	$90,902.98	07/31/2024
Obed Watershed Community Association—*Pistol Creek Project*	$80,000.00	$30,385.43	07/31/2023
Obed Watershed Community Association—*Wilkerson Creek Restoration Project*	$60,000.00	$47,668.25	07/31/2023
Southeast Tennessee RC&D—*Hiwassee River Tributaries Project, Ph. I*	$245,000.00	$0.00	07/31/2022
Southeast Tennessee RC&D—*Hiwassee River Tributaries Project, Ph. II*	$200,000.00	$200,000.00	07/31/2025
Southeast Tennessee RC&D—*Sequatchie Cave State Natural Area and Owen Spring Branch*	$155,000.00	$2,110.00	07/31/2024
TN Dept of Environment & Conservation/Water Resources—*Water Quality Monitoring of NPS Impaired Streams 2020*	$150,081.00	$1,977.85	07/31/2024
TN Dept of Environment & Conservation/Water Resources—*Water Quality Monitoring of NPS Impaired Streams 2021*	$180,000.00	$180,000.00	07/31/2025
TN Dept of Environment & Conservation/Water Resources, West TN River Basin Authority—*Turkey Creek and Sugar Creek*	$230,000.00	$28,586.84	09/30/2022
Tennessee Environmental Council—*Lytle Creek Phase 3 Restoration Project*	$63,100.00	$63,100.00	07/31/2025
Tennessee Environmental Council—*Rutherford Creek Phase IV Restoration Plan Implementation – Grassy Branch Restoration Project*	$81,000.00	$1,468.80	07/31/2022

Continuation of Status of All Projects Active in FFY2022

Grantee Name—Project Name	Amount Awarded ($)	Balance ($)	Expiration Date
Tennessee Environmental Council—*Rutherford Creek Phase V Restoration Plan Implementation – Grassy Branch Restoration Project*	$145,000.00	$145,000.00	07/31/2025
Tennessee RC&D—*Tennessee Envirothon 2019*	$40,000.00	$0.00	07/31/2022
Tennessee State University—*Habitat Improvements in Urban Wetland*	$9,650.00	$9,650.00	07/31/2024
University of Memphis—*Educate Teachers and Inspire Students to Protect Tennessee Watersheds*	$24,400.00	$23,325.29	07/31/2024
The University of Tennessee, Institute of Agriculture—*Bat Creek Restoration Project*	$210,000.00	$141,286.19	07/31/2023
Wolf River Conservancy—*Educational Signage and Outreach for the Wolf River Greenway*	$26,000.00	$26,000.00	07/31/2025



Left: Reelfoot Lake in Lake County.

Right: Pollinator garden at the Discovery Park of America in Obion County.

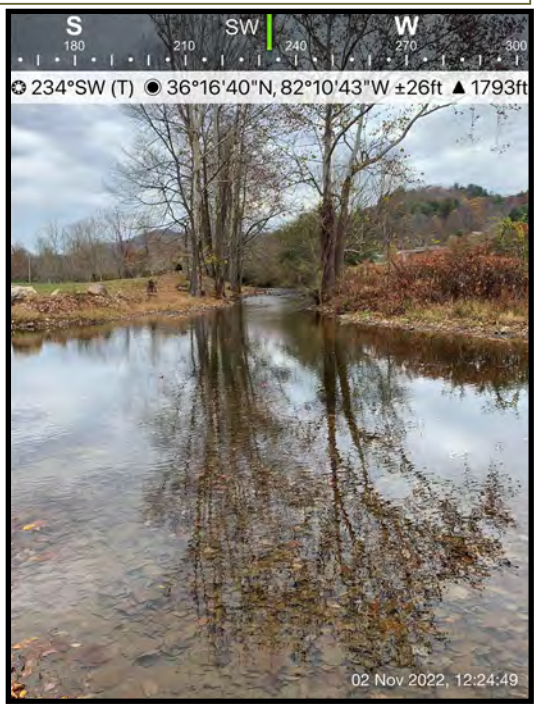
Project Summaries for FY2022

(In alphabetical order, by grantee)

GRANTEE: Appalachian RC&D Council
PROJECT NAME: Gap Creek—Watauga River Restoration
GRANT YEAR: FY2021
WEBSITE: www.arcd.org

Left: Downstream on the Doe River Hampton site

Right: Upstream on the Doe River Hampton site

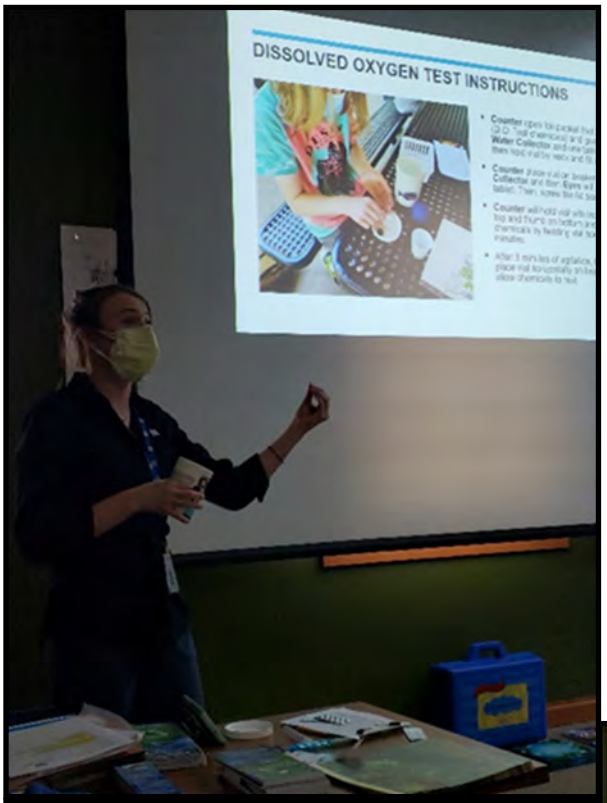


The Gap Creek project kicked off with a stakeholder meeting involving the project landowner, Carter County (representative) and the project designer, Brushy Fork Environmental Consulting, Inc. (BFEC) on November 2, 2022. Four sites were visited: Gap Creek Park, Doe River Hampton, Campbell Branch, and Doe River Roan Mountain. Gap Creek Park is the larger of the projects involving 1,600 +/- linear feet of project reach which is 303(d) listed. The other 3 sites are small, involving ~2-300 linear foot erosive reaches near county parks.

Gap Creek Aerial Map

BFEC is currently working towards on project assessment/survey and toward project design and permitting. The Gap Creek Park project will be the showcase of this 319 project. The project will be used to enhance water quality via reduction in sediment loads and to educate local park-goers as to eco-friendly methods to use on semi-urban streambanks (riparian buffer establishment, etc.). Once the project is designed, the 401 TDEC individual permit will be applied for in the summer/fall of 2023.

GRANTEE: Austin Peay State University
PROJECT NAME: Project WET
GRANT YEAR: FY2019
WEBSITE: https://www.apsu.edu/wet/



A total of 76 educators were trained during this period in 9 Project WET Workshops. Fifteen individuals participated in hybrid workshops, partially online with an in-stream opportunity that was in-person. All other workshops were in person. Some of the workshop locations included an Oak Ridge Laboratory professional development for teachers, the Tennessee National Wildlife Refuge Visitor's Center, and the Memphis Agricenter.

An exhibit is being constructed for use at the November 2022 Tennessee Science Teachers Association annual conference. The exhibit will share activities teachers can use in their classrooms to teach students about the importance of nonpoint source pollution and how communities can help prevent it.

All photos from 7/25/22 Workshop at Tennessee National Wildlife Refuge

GRANTEE: Blount County Soil and Water Conservation District
PROJECT NAME: Baker and Centenary Creek Restoration Initiative—Phase III
GRANT YEAR: FY2018
WEBSITE: http://www.blounttn.org/soil/

I. Implementation of Agricultural Best Management Practices:
Eight individual operators (seven, in Blount County and one, in Loudon County) representing ten contracts completed their planned practices for this reporting period.

Implemented practices included:

Practice:	NRCS Code #:	Quantity Installed:
Cross-fencing	382(d)	7894 Feet
Access Control Fence	382(a)	1351 Feet
Alternative Watering System	614	13 Tanks
Pipeline	516	7260 Feet
Heavy Use Area Protection (Tank)	561	8632 square feet
Heavy Use Area Protection (Sensitive Areas)	561	1732 square feet
Stream Crossing	578	1 Crossing
Animal Trail & Walkway	575	100 Feet

II. Septic System Repair and Restoration for Low-income Households:
No progress this reporting period. Outreach for this aspect of grant funding has included notification to septic system installers in regard to opportunities for grant funding and installation thereof.

III. Correct Eroded Steep Banks along U.S. Highway 411:
The restoration of eroded steep banks (Sections II and III of a 1500 linear foot segment) along U.S. Highway 411 has been completed. This work was approved and supported by the Tennessee Department of Transportation Maintenance Department (Region 1) who assisted in completing the work.
Total acres affected = 1.49 acres.

IV: Conduct Homeowner Outreach Workshops:
Two workshops were conducted for this reporting period.
A summary of each workshop is as follows:

A homeowner workshop on the 'Care & Transport of Native Bare Root Plants' was conducted from March 3 through March 5 of 2022.
Number of Workshop Attendees = 14

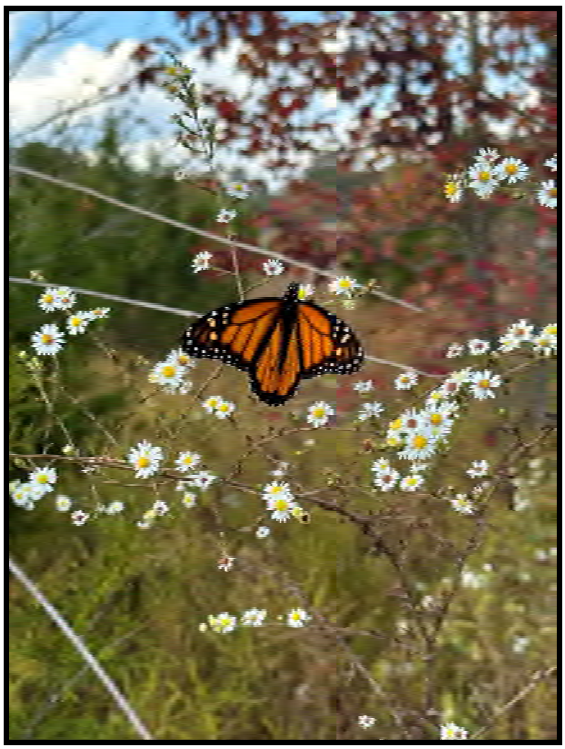
A workshop was conducted on July 11, 2022 to teach volunteers and interested community members about rain garden design, establishment, and maintenance.
Number of Workshop Attendees = 6

V: Implement Riparian/Stormwater Practices:

A herbaceous riparian buffer located on Centenary Creek at the outdoor learning area of Carpenters Elementary School has been completed. 2.2 acres were planted to native herbaceous plants allowing for the additional stabilization of 580 linear feet of streambank.

V: Implement Riparian/Stormwater Practices--<u>Continued</u>:

A native meadow was completed at the outdoor learning area of Carpenters Middle School.
This project included the conversion of an unmanaged area to a native meadow 0.75 acres in size.
The meadow area serves as a buffer habitat to slow, capture, and filter stormwater runoff. The meadow is positioned and designed specifically to filter nonpoint source pollutants from adjacent impervious surfaces, and to reduce flooding on school sport fields.



Above (left and right): Native Meadow in outdoor learning area at Carpenters Middle School

VI. Grant Management:

All aspects of grant programming are reviewed on a monthly basis by the Board of Supervisors of the Blount County Soil & Water Conservation District as part of an adaptive management policy to ensure project integrity.

GRANTEE: Blount County Soil and Water Conservation District
PROJECT NAME: Pistol Creek Watershed Restoration Initiative—Phase 1
GRANT YEAR: FY2018
WEBSITE: http://www.blounttn.org/soil/

This project came to a close in October 2022, with all funds being spent and all objectives being met. Funds allocated to the Highway 321 roadside rehabilitation milestone were redirected to other milestones as road bank issues were addressed by other entities. Salary funds were reallocated to support additional project implementation. As a result, goals for riparian/stream buffer, urban stormwater, and outdoor learning area milestones were exceeded.

Milestones & Project Implementation:

Septic System Assistance

One failing septic system was replaced for a low-income household.

Stream & Riparian Buffer Habitat

In this year alone, 28.5 acres of riparian buffer habitat were enhanced and at least 885 linear feet of streambank was stabilized. This was accomplished through six notable projects. Two streambank stabilization projects addressed medium-scale erosion issues that presented a threat to public infrastructure. These projects employed the use of several bioengineering stream stabilization techniques and will serve as demonstration sites for these practices. Two smaller streambank stabilization projects address more local issues related to stormwater runoff into the stream. One of these projects employed the use of Flexamat as a hard armoring technique that also allows for herbaceous riparian buffer establishment. Finally, two other projects focused on enhancing riparian forest habitat through invasive plant species control and addressing erosion issues.

Above: After photo of Streambank restoration and stabilization on Pistol Branch in Elsborn Ridge Community

Agricultural BMPs

Agricultural best management practices were completed at the Tim McNutt property. Implemented practices included: Animal trail/walkway (359 ft), Stream Crossing (1), 2 Access Roads (80 ft. & 100 ft.), 2 Heavy Use Areas (each 1,456 sq. ft.), and Structures for water control (3 rock waterbars).

Urban Stormwater BMPs

This grant reporting year seven projects were completed which included enhancing and installing various stormwater features including rain gardens, a stormwater ditch conveyance, a bioswale, and native pollinator stormwater buffer strips. Many of these projects are in public spaces and serve as demonstration sites. Additionally, beaver pond levelers were installed at two different sites to alleviate beaver-related flooding issues in urban spaces. The beaver pond levelers have been great projects for demonstrating how to coexist with wildlife that significant affect the watershed and how allowing these animals to stay can benefits stream health. Finally, engineering designs were completed that will integrated green infrastructure and more advance stormwater management practices at two county project sites that will be implemented at a community scale (Eagleton community).

Above: Volunteer event

Community Outreach/Homeowner Workshops

Two homeowner workshop events were conducted regarding stormwater features, such as rain gardens and bioswales. The workshops focused on design, establishment, and maintenance of these features as both stormwater management practices and aesthetic features in public spaces.

Right: Aerial image of installed rain garden

GRANTEE: Claiborne County Soil and Water Conservation District
PROJECT NAME: Davis Creek/Cawood Branch Watershed Restoration Project
GRANT YEAR: FY2021
WEBSITE: http://tnacd.org/

This contract started on 6/13/22, Claiborne County SWCD has all funds obligated with plans and estimates in the hands of eight participants, with three of those completed. The remaining unfunded six applicants were switched over to TDA's ARCF cost share waiting list.

Completed BMPs consisting of the following:

- Two watering systems (one spring development & one city water including a pumping plant, four watering tanks, one storage tank, 4296 feet of livestock pipeline & four 676 square foot watering tank heavy use areas, and
- 2486 feet of fencing.

Left: Completed alternative waterer, heavy use area, and cross fencing

Below: Completed cross fencing

Above: Completed cross fencing

Right: Completed alternative waterer and heavy use area

GRANTEE: Clinch-Powell Resource Conservation & Development Council
PROJECT NAME: Clinch-Powell Rivers Watershed Restoration Project
GRANT YEAR: FY2020
WEBSITE: https://www.clinchpowell.net/

Above: 1,800 square feet heavy use area protection was installed to allow the landowner to manage his animal waste during winter feedings and prevent NPS pollutants from entering Little Sycamore Creek .

Above: Proposed location for a new feeding area awaiting engineer design and approval for a splash pad (for roof run-off) and water diversions.

In this first 2 years of the project, the Council has spent time working with NRCS and the local SWCD's to implement a plan to make the most of its work. The watersheds that are being worked in have lots of great projects and willing landowners. One of Clinch-Powell's goal is to use the USEPA Section 319 grant funds to supplement other funds being used in the two counties. When possible other funds are used to implement projects. This is allows the use the 319 funds to take a whole watershed approach to conservation.

There are currently active landowner negotiations in the works, with one project approved for funding. Engineering is underway on a few projects, and this will dictate the schedule. It is envisioned that this program will be as successful as the ones in past years and Clinch-Powell feels confident about reaching their goals.

GRANTEE: Cumberland River Compact
PROJECT NAME: Bank Stabilization at Moss Wright Park & Mansker Creek Restoration Project, Phase II
GRANT YEAR: FY2018
WEBSITE: http://cumberlandrivercompact.org/

The summer of 2022 marked the end of the Mansker Creek Phase II 319 project, which saw the completion of several BMPs and educational events within the watershed.

In the Fall of 2021, the Compact hosted two Rivertalks to educate watershed residents about the project, best management practices, and water quality. The first talk, “Stream Restoration Across the Cumberland River Basin,” was held in-person at the Goodlettsville City Hall on November 4th, 2021 and reached eight attendees. The second talk, “Innovative Stream Restoration in Mansker Creek,” was hosted as a podcast in partnership with KCI Technologies. This podcast covered the stream restoration techniques utilized by KCI as part of this project and has reached 129 listeners since its posting on November 23rd, 2021. As part of these educational activities, a stream cleanup was held in North Creek Park along Mansker Creek on November 6th, 2021. Approximately 40 bags of trash were removed from the stream with the help of 24 volunteers.


Rain garden constructed at Millersville Elementary School

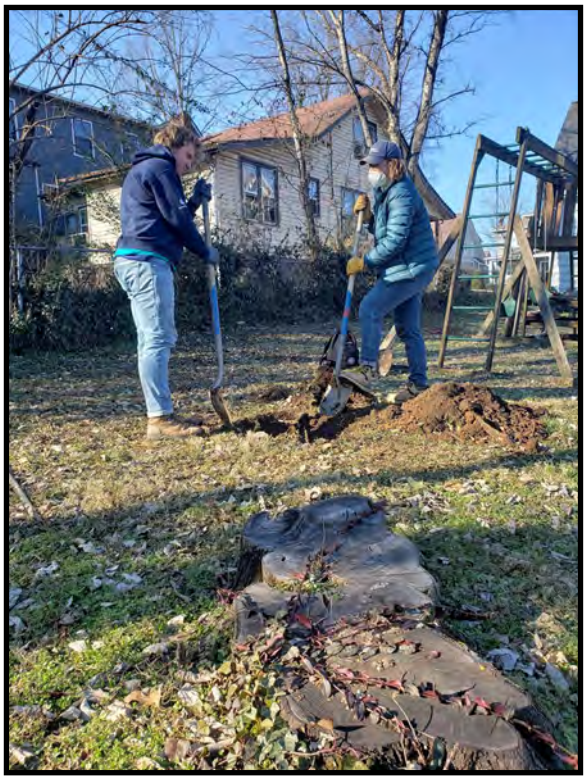
The Compact started off the spring season of 2022 with a rain barrel event at the City of Goodlettsville Visitor’s Center. On March 12th, 2022, the Compact delivered 29 rain barrels, disseminated information on installation and maintenance, and answered specific questions that people had regarding their barrels. Information via this event was disseminated to 20 people in total. Later in the spring, the Compact worked with Millersville Elementary School to construct a rain garden and stormwater retrofit of an area behind the school. An 800 square-foot rain garden was built on April 21st, 2022 to capture stormwater runoff from the school and from a nearby pavilion. Due to the slope of the area, the pavilion was upgraded with new gutters on June 21st, 2022, and a downspout was directed into the constructed rain garden to ensure all runoff from the pavilion was captured. As of August, 2022, the rain garden plants have flourished despite the dry, hot summer, and the maintenance crews have done well to respect the no-mow signs placed throughout the garden. The Compact also partnered with the Goodlettsville Parks Department to extend a 900 linear-foot riparian area in North Creek Park, which the Compact planted with the help of 20 Calvert Street Group volunteers on April 28th, 2022. The Compact and the Parks Department also worked to site and install five pet waste stations within the project area, and bags were purchased to keep the stations stocked for an extended period of time. Events like the Goodlettsville Waterfest and stream cleanups have and will continue beyond the life of Phase II with funding from the City of Goodlettsville.

GRANTEE: Cumberland River Compact
PROJECT NAME: Browns Creek Restoration Project, Phase 1
GRANT YEAR: FY2018
WEBSITE: http://cumberlandrivercompact.org/

CUMBERLAND RIVER COMPACT
OUR WATER. OUR FUTURE.

This past year marks the final term of the Browns Creek 319 Phase 1 restoration project, which was granted an extension to continue work in the project area. During this period, the Compact and Metro Water Services worked to fully remediate the depave site along 1800 Nolensville Pike, Nashville, TN, 37210. After depaving, this site's soil was 'ripped' to remove compaction and improve infiltration, which was completed on May 11th, 2022. In addition to ripping, soil amendments were added to enhance the composition of the soil and support establishment of vegetation. These soil improvements made conditions conducive to pioneer species of herbaceous and woody plants, which have started to colonize the site when they previously were unable to establish. Shortly after, 20 native tree species were planted in these ripped areas to facilitate infiltration and improve local habitat. After planting, the Compact began routine maintenance to care for the trees, which revealed the need for staking to prevent tree upheaval. The Compact watered and performed other maintenance activities at the site on a weekly basis throughout the summer of 2022, with the exception of weeks that received adequate rainfall.

Above: Compact staff member loading trees for the 2021-2022 planting season.



In addition to the planting and maintenance of the depave site trees, the Compact planted 303 native trees (greater than one inch caliper) during the 2021-2022 planting season within the watershed. These trees were planted to enhance the watershed's tree canopy, helping to improve stormwater infiltration and habitat. Species planted included Nuttall Oak, Star Magnolia, Eastern Redbud, Sweetbay Magnolia, Tulip Poplar, Sugar Maple, American Elm, and Red Maple. Planting dates varied throughout the season and were either carried out by Cumberland River Compact staffed events or by homeowners provided with trees and tree planting guidance from the Compact.

Left: Volunteers and Compact staff planting a replacement tree.

GRANTEE: Cumberland River Compact
PROJECT NAME: Harpeth River - Spencer Creek Watershed Restoration, Ph. I
GRANT YEAR: FY2021
WEBSITE: http://cumberlandrivercompact.org/

CUMBERLAND RIVER COMPACT
OUR WATER. OUR FUTURE.

Above: Proposed Ralston Branch Restoration Project in Pinkerton Park

The Harpeth River - Spencer Creek Watershed Restoration Project officially started in August of this year. As such, most of the current work has involved primarily working with the City to solicit bids and approve a contractor for the restoration work planned for Ralston Branch in Pinkerton Park. The stream is incised near its confluence with the Harpeth River, and eroding banks are introducing high amounts of sediment into the City of Franklin's waterways Shortly before the start of this project, the Compact spoke with the City of Franklin regarding grant management, contractor selection, and a memorandum of understanding between the Compact and the City regarding 319 grant duties. Discussion between both parties is ongoing and will likely finish in early 2023.

In September, the City of Franklin provided an update regarding their internal discussion and review of contractor bidding and selection. The previous bid from Stantec is currently under review by the City, and costs are being reevaluated to take into consideration inflation and other increased costs since the bid was originally submitted in November of 2020. The City provided an update in early November that some additional review and approvals were needed internally prior to contractor selection, and that they were optimistic about moving forward soon.

Above: Threatened sewer infrastructure in Ralston Branch

GRANTEE: Cumberland River Compact
PROJECT NAME: Oak Grove / West Fork Red River Restoration: Phase One
GRANT YEAR: FY2020
WEBSITE: http://cumberlandrivercompact.org/

This phase is primarily focused on the northern Tennessee section of the HUC 12 watershed and included a major stream bank stabilization project in Billy Dunlop Park. As part of this bank stabilization project, the Cumberland River Compact (CRC) signed a Memorandum of Understanding with the City of Clarksville (City) on August 13th, 2021 and worked with the City to solicit three bids for the project from KCI Technologies, Inc., Barge Design Solutions, Inc., and Blueway, LLC. After evaluation of the three bids, KCI Technologies, Inc. (KCI) was selected as the contractor for the bank stabilization project, and a Professional Services Agreement was signed with the company on May 9th, 2022. Meetings were held between CRC, the City, and KCI on January 27th, 2021, February 2nd, 2021, September 24, 2021, and April 13th, 2022 to discuss the project scope, timeline, and design plans. The bank stabilization project is in the permitting process for ARAP and Section 106 permits and is slated for construction in winter of 2022 or early spring of 2023.

Other riparian buffer plantings, structural BMPs, agricultural BMPs, and education projects were included in the project to complement this stream bank stabilization. Site outreach and identification is currently underway for installation of applicable BMPs. CRC is currently discussing a rain garden installation with Barkers Mill Elementary School. On August 10th, 2022, CRC sent over rain garden information and site maps for the school to begin their approval processes. To source additional locations for BMPs, the Compact tabled at Billy Dunlop Park on August 27th, 2022 and at Riverfest at McGregor Park & Cumberland Riverwalk on September 10th, 2022. Five teacher training events were hosted in Clarksville to provide training and support needed by teachers to engage their students and bring STEM education into their classrooms. These trainings provided classroom educational kits and covered topics regarding water quality and monitoring, stream ecosystems, and stream restoration. Finally, CRC's stream adopter, the Sierra Club, hosted a cleanup on October 2nd, 2021 and garnered support from 34 volunteers to remove 20 bags of trash from the West Fork Red River.

Group Cleanup of West Fork River

GRANTEE: Cumberland River Compact
PROJECT NAME: River Friendly Farms
GRANT YEAR: FY2019
WEBSITE: http://cumberlandrivercompact.org/

Above: Reggie's Veggies Certification

This year, the Compact expanded the River Friendly Farms program through several new River Friendly Farm certifications, the completion of a program website, and a plethora of educational events and publications through local media. During this year, the Compact certified three new farms: Reggies Veggies, Heniscity Farm, and Harpeth Moon Farm. The program has a total of five farms as part of the program, all of which have demonstrated the best management practices (BMPs) they adopt to protect soils and prevent pollutants from entering local streams. As part of the certification process, the Compact provided signage for each farm and published a public profile on the River Friendly Farm website to showcase each farm and its river friendly practices. This website was recently completed this summer and details the River Friendly Farm certification process, BMP education, and funding sources for BMPs. To complement these profiles, each farm was featured in a local magazine to showcase BMPs and educate readers about the positive impact they have on water quality. By Faith Farm, Green Door Gourmet, Reggie's Veggies, Heniscity Farm, each had a full page advertorial featured in printed issues of Edible Magazine in the months of February, March, June, and September, respectively. Each monthly addition has between 10,000 - 12,500 copies distributed throughout the Middle Tennessee area.

Finally, the Compact partnered with local organizations to host three farm field days in 2022 to educate local farmers about BMPs. On January 27th, a field day was hosted at the Robertson County Fairgrounds and covered topics regarding soil health practices, the benefits of soil health, and how to make a profit using cover cropping and no-till BMPs. March 28th featured a farm field day at the River Friendly Farm, Green Door Gourmet, teaching locals about sustainable agriculture implementation. Finally, on June 7th, another farm field day was hosted in partnership with a River Friendly Farm, By Faith Farm, this time reviewing cover cropping techniques, weed control methods, and less intensive livestock management. After these field days, the Compact worked with local River Friendly Farms to create educational river friendly farm videos, which have been filmed and are currently undergoing edits. The Compact anticipates completion and release of these videos in early 2023.

Above: Filming Day with Robertson County Partners

GRANTEE: Giles County Soil and Water Conservation District
PROJECT NAME: Pigeon Roost Creek Watershed Project
GRANT YEAR: FY2019
WEBSITE: http://www.gcscd.com/

Employees from the Giles County SWCD met with clients in the Pigeon Roost Creek (PRC) Watershed area promoting Best Management Practices (BMPs) that were to be funded through the PRC Watershed Grant. The BMP Practices funded under the project include:

- Exclusion fencing;
- Cross fencing;
- Filter strips;
- Field borders;
- Forested riparian buffer;
- Pipeline;
- Watering facilities;
- Heavy use areas;
- Stream crossing;
- Clearing and snagging;
- Pumping plant;
- Spring development; and,
- Cover crops.

Also, reminder flyers were mailed to landowners living in the watershed. The contract and cost share payment process were explained to the landowner.

From October 2021 to September 2022 the Giles County SWCD worked with landowners within the PRC Watershed Project completing BMPs and receiving cost share. The results of all completed practices were:

- 1,731 acres of cover crops;
- 12,109 feet of fencing;
- 2,304 square feet of heavy use area;
- 5,507 feet of pipeline;
- 1 pumping plant;
- 1 water well; and,
- 4 water facilities.

Top right: Four ball watering system for rotational grazing

Center right: Cross fencing for rotational grazing

Bottom right: Cover crops for soil health

GRANTEE: Grainger County Soil and Water Conservation District
PROJECT NAME: Richland Creek
GRANT YEAR: FY2020
WEBSITE: www.graingercountytn.com/county-officials/soil-conservation/

Grainger County SWCD has been working with landowners to implement best management practices and help to repair old or failing septic systems in an effort to prevent or reduce nonpoint source pollution. During the course of this project one source was identified as a cause of the loss of biological integrity of Richland Creek, *E. coli* which comes from manure sources. Therefore the Grainger County SWCD concentrated on fencing cattle out of the streams that feed Richland Creek and also repairing septic systems. Currently there are seven project obligated, two of which are septic system repairs.

There were several outreach events that took place, one the annual farm tour where BMP's and the Richland Creek Grant were discussed. There were 60 people in attendance with a fence demo and 3 speakers from University of Tennessee (UT) Extension. There was also a grazing demo that was set up by the local staff under the guidance of the NRCS State Grazing Specialist. There was a mail out to all the certified septic contractors in Grainger County to make them aware of the Grant. Letters were mailed to Richland Creek Watershed landowners to make them aware of the Grant. Posters were place in local businesses to announce the beginning of the Grant availability. Students in the 4-H program were given a presentation by the Grainger County Technician and an Americorp student intern about watersheds and the water cycle.

Above: Fence demonstration

Bottom Left: 4-H agriculture education camp

Bottom Right: Farm Tour

GRANTEE: Knox County
PROJECT NAME: Beaver Creek Initiative— Phase 3
GRANT YEAR: FY2020
WEBSITE: http://www.knoxcounty.org/

The focus this year was spreading awareness about the grant and completing septic projects, with 5 projects completed. Two agricultural projects are currently in process.

This was the initial year of the grant, therefore education efforts included updates to the Knox County Stormwater website, several social media posts, a mailer to 2,100 septic and agricultural properties in the upper Beaver Creek sub-basins, and a targeted letter to 240 agricultural properties throughout the watershed to advertise for a grazing field day. Additionally, fliers to advertise the grant were posted at libraries and businesses in the watershed, and at nine different community events (including farm field days and other agriculture-related or community-wide events). Educational events the past year included a farm field day about rotational grazing and one about soil health, tabling at the Beaver Creek Flotilla and Karns Community Fair, and two articles in Knox County Stormwater's Strong Streams e-newsletter.

Above: Beaver Creek Flotilla, where Knox County Stormwater had an educational booth

Above: Septic repair in Upper Beaver Creek

Below: Field Day about rotational grazing and pasture health

Below: Tabling at the Karns Community Fair

GRANTEE: Knox County Soil and Water Conservation District
PROJECT NAME: Flat Creek Watershed Restoration Project—Phase 2
GRANT YEAR: FY2020
WEBSITE: http://www.knoxcounty.org/

Above: Critical area planting

In the past fiscal year, the Knox County Flat Creek Watershed Restoration Project–Phase II completed one septic repair and three agricultural projects. The three agricultural projects consisted of installing a total of 1,429 ft of exclusion fence along sensitive areas, 1,236 sq ft of mulching-erosion control blanket, and 0.35 acres of critical area planting to control erosion.

Above: Exclusion fencing

The three agricultural projects treated a total of 294 acres and received $5,328.00 in cost-share reimbursements. The septic repair project consisted of installing 300 ft of new drain field to repair an existing septic system. A total of 22 acres were treated by this project, and the landowner received $5,500.00 of cost-share reimbursement.

Above: Exclusion fencing

Below: Farmer of the Year Presentation

GRANTEE: Knox County Soil and Water Conservation District
PROJECT NAME: Stock Creek Initiative—Phase II
GRANT YEAR: FY2018
WEBSITE: http://www.knoxcounty.org/

In the past fiscal year, the Knox County Stock Creek Phase II Initiative completed 3 septic repairs for a total of twenty-two septic repairs and one sewer connection for the grant cycle. Several educational signs were developed and made for the Marble Springs Historic Site explaining the history of Marble Spring and the land and water animals that may be seen in the area around the spring. Also, more septic postcards were mailed out to property owners to further educate the public on signs of septic failure. Knox County also had a "booth" at the Fall Craft Fair at Marble Springs where families participated in educational activities and learned about water quality in Stock Creek.

All grant funds and $50,000 in match money from Knox County were exhausted except for $265.94 of the "Indirect Cost" line item in the grant budget.

Top right: Fall Craft Fair at Marble Springs (family education and outreach)

Right: Marble Springs historical marker with spring house

Bottom right: Educational booth at the Fall Craft Fair

Below: Septic postcard example

GRANTEE: Morgan County Soil and Water Conservation District
PROJECT NAME: Crooked Fork Restoration Project, Ph. IV
GRANT YEAR: FY2020
WEBSITE: https://www.tn.gov/agriculture/article/ag-scd-morgan

conserving natural resources for our future

During this period there were seven septic-related projects completed, impacting 20 acres, for a total cost share of $40,878.00. The District supported two reseeding practices, impacting 16 acres, for a total cost share amount of$3,351.38. A total of $14,0891.00 was requested for the administrative work that was done by the District Secretary. At the end of the fiscal year, a total of $59,255.38 was remaining in the budget for additional practices. Several projects are currently in development including 5 active septic repairs and 1 streambank restoration.

The Morgan County SWCD remained committed to sharing with the communities within the Crooked Fork Creek Watershed about the availability of resources to them.

Morgan County SWCD also placed signs in the communities, and passed along information during outdoor events and activities to educate the public on the resources available to them.

The 2021 poster contest winner was selected for 2nd place in the state contest and was recently awarded with a certificate, and earnings from the state and the board. The 2022 contest has completed and the winners will be submitted to the state, with contest winners being met with in the near future to be presented with certificates and monetary earnings from the board.

GRANTEE: Southeast Tennessee Resource Conservation & Development Council
PROJECT NAME: Hiwassee River Tributaries Project, Ph. 2
GRANT YEAR: FY2021
WEBSITE: http://setnrcd.org/

Above: Ben Sander's Farm

This year the Southeast Tennessee Resource Conservation & Development District has been working with agricultural producers in the Chatata Creek watershed to implement BMPs on farm properties. Currently, there are signed applications and agreement forms for two landowners for cover crop plantings. One will also be partnering Southeast Tennessee RC& D on crop conversion to perennial grass in the spring, with additional discussions about future installation of waterlines to prevent cattle access to mainstem Chatata Creek.

The cost-share program to repair failing septic systems has been slow to progress. Communications with several landowners for repairs have been delayed by contractor availability. The septic repair cost-share program has been advertised in the Cleveland Banner, through Facebook, and through flyers at community centers. Mark Dillard, who permits and inspects septic repairs in Bradley County, has been informed about the program and shared the watershed map and program guidelines with him.

Right: Bridge over Chatata Creek

GRANTEE: Southeast Tennessee Resource Conservation & Development Council
PROJECT NAME: Sequatchie Cave State Natural Area and Owen Spring Branch
GRANT YEAR: FY2018
WEBSITE: http://setnrcd.org/

Sequatchie Cave State Natural Area (SNA) has undergone significant site improvements over the past year. All of the earthwork and installation of the bioretention areas is now complete and the design is functioning as intended. The area was seeded with a native seed mix which included some showy flowering species to provide visual interest to the site during the growing season. A variety of native trees and shrubs were planted at the site and a split rail fence was installed along the road edge from Valley View Highway to the parking area.

KCI has invoiced and been paid for the monitoring, design, and installation costs at Sequatchie Cave SNA. Recently, David Withers and the Natural Areas staff expressed the need for a cleaning of the pervious pavement in the parking area. Though this was not written into the original work plan for this grant, SE TN RC& D hopes to find a way to fund the maintenance to make sure that the BMP continues to function properly. There will be designed, printed, and installed educational signage at the site in the future.

Above: Rock-lined waterway and replaced culvert at "the boils"

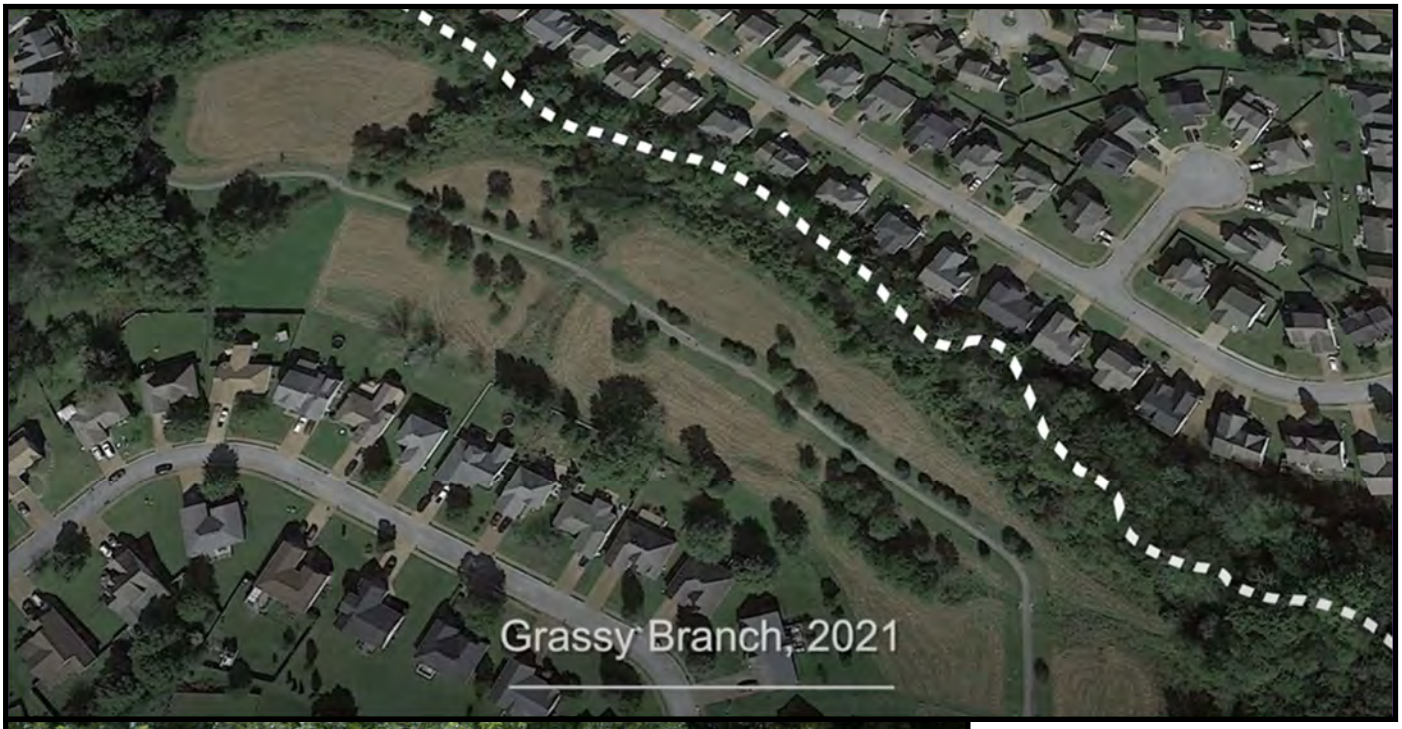
Below: Outlet of replaced culvert and view of seeded area and split rail fence

Below: Outlet of bioretention area along Valley View Highway

GRANTEE: Tennessee Environmental Council
PROJECT NAME: Rutherford Creek Restoration, Phase IV
GRANT YEAR: FY2018
WEBSITE: https://www.tectn.org/

TENNESSEE ENVIRONMENTAL COUNCIL

The Tennessee Environmental Council continued to improve the Duck River watershed and Grassy Branch Creek through sustainable infrastructure installation along the stream bank, riparian reforestation and rain garden installations. Grassy Branch creek is impaired due to alterations in stream-side or littoral vegetation and sedimentation/siltation. The Council used cedar revetments and coir logs, a sustainable bioengineering method, to stabilize eroding banks, add roughness to the stream channel, capture silt and provide aquatic habitat. All trees used to expand and enhance the existing riparian buffer zone are native to the region, as are the plants in the rain gardens. Council staff, with the help of volunteers, have restored and maintained ~600 linear feet of Grassy Branch Creek.



Above: Riparian Buffer Zone 2021

The location of the Grassy Branch Creek Restoration Project is in the Wyngate Estates subdivision in Spring Hill, Tennessee. The creek flows through a 17 acre common area owned and managed by Wyngate Estates and is the only subdivision with such an area in Spring Hill.

Left: Staff and volunteers planting native trees

Right: TEC CEO with thriving rain garden

Bottom Right: Attracted wildlife to newly planted flowers

The Grassy Branch Creek Restoration Project is a grant through the Tennessee Department of Agriculture. Phase IV, of the project, concluded on July 30, 2022. At that time Tennessee Environmental Council began phase V of the restoration efforts.

Left: Volunteer planting native trees

GRANTEE: University of Memphis
PROJECT NAME: Educate Teachers and Inspire Students to Protect the Tennessee Watersheds
GRANT YEAR: FY2020
WEBSITE: https://www.memphis.edu/

This project was conducted to raise awareness of K-12 teachers and educators, and students about non-point sources pollution (NPS), aiming to better protect the Tennessee water resources. The specific learning objectives were to (1) understand the basic water quality parameters, (2) identify the sources of NPS pollution in Tennessee, (3) describe the appropriate practices to reduce the impacts of NPS on water streams, and (4) develop students' projects on NPS. For this purpose, some class materials including the presentations and lesson plans were prepared about the general stormwater quality parameters, nonpoint sources pollution in Tennessee, and structural and nonstructural best management practices (BMPs). The developed hands-on activities demonstrated water flow and infiltration through the land and described different types of pollution within the aquatic environment. Furthermore, the student project was designed by asking the students to explore their schools and (1) identify the water flow and infiltration through the land, (2) identify the sources of stormwater pollution, and (3) develop a mitigation plan to control the stormwater pollution within their schools.

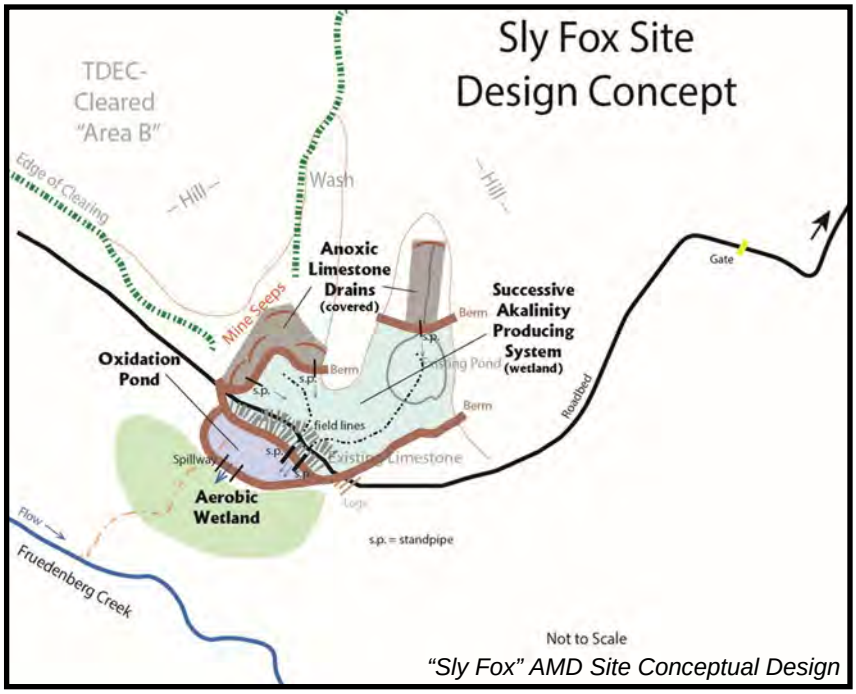
Right: teacher training on conducting the hands-on activity on water pollution at the University of Memphis campus

Left: hands-on activity on water pollution with the teachers who attended the workshop at the University of Memphis—Lambuth campus

One in-person teachers' workshop was conducted on June 14th at the University of Memphis campus for the K-12 teachers in the Memphis area, and the second in-person teacher's workshop was conducted on July 11th at the University of Memphis, Lambuth campus at Jackson, Tennessee for the teachers in Jackson area. The pre- and post-assessments revealed the effectiveness of workshops in promoting educators' knowledge regarding nonpoint sources and stormwater best management practices. Moreover, PI Salehi has conducted a week of a summer camp called "Girls Experiencing Environmental Engineering (GEEE)" for middle and high school female students at the University of Memphis campus, from June 20th to 24th. In addition to the other component of environmental pollution presented in this summer camp, the students learned about nonpoint sources pollution and prevention practices.

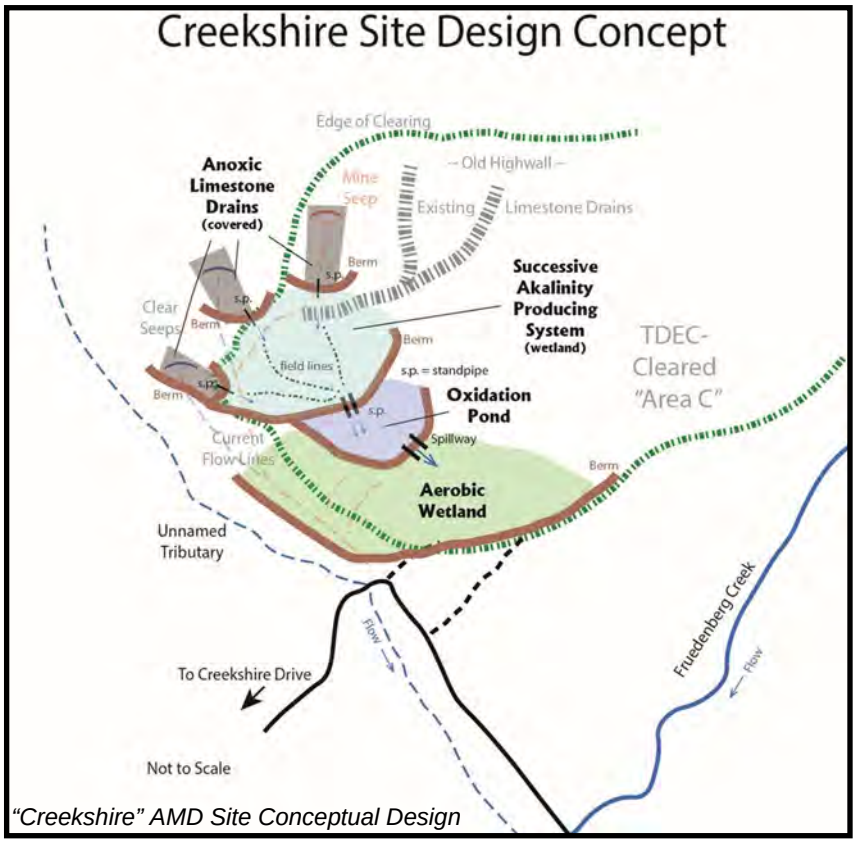
GRANTEE: WaterWays! (formerly TenneSEA and Caribbean SEA)
PROJECT NAME: Reducing Non-point Source Pollution in Shoal Creek and Middle Creek Watersheds
GRANT YEAR: FY2019
WEBSITE: https://www.caribbean-sea.org/

The main focus this year was on Bee Branch *E. coli* levels, and Waterways' sampling program identified one improperly installed septic tank near an unnamed tributary. The homeowner repaired the system without any contribution from the program. Lower than average rainfall in the past 12 months severely reduced flow in much of the upper Bee Branch drainage, making follow-up sampling impossible. Additional samples are planned this Fall as evapotranspiration slows. Moreover, Waterways is currently working with light detecting and ranging (LIDAR) data to pinpoint potential septic systems contributing *E. coli* to Bee Branch.



"Sly Fox" AMD Site Conceptual Design

With COVID restrictions easing, Waterways was active in community education. In the Middle Creek watershed, one Community Creek Day was conducted, and seven yards for RainSmart qualification were assessed, five of which achieved the Bronze certification and helped Waterways win the NoogaKnox challenge. Local community members assisted with a tree planting to aid in erosion control along the slope of Area B of the TDEC Timesville Road reclamation area above Fruedenberg Creek. Twenty-five American Chestnut hybrids, obtained through donation from UT-Chattanooga (UTC)/Dr. Craddock Hill, and 30 white pine saplings were planted. Conceptual designs for wetland remediation systems of acid mine drainage (AMD) seepage have been completed for the previously identified "Creekshire" and "Sly Fox" locations along Fruedenberg Creek. A graduate student intern from UTC was hired, and conducted weekly chemical and flow sampling at these sites. This data will be used to design the most effective treatment systems for the locations.



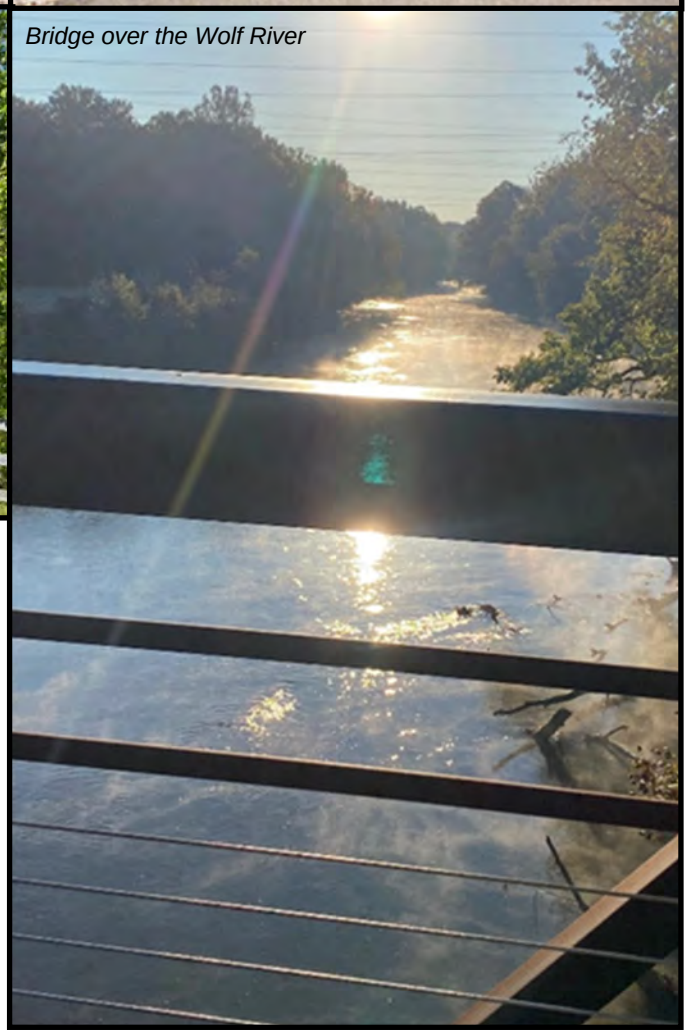
"Creekshire" AMD Site Conceptual Design

GRANTEE: Wolf River Conservancy
PROJECT NAME: Educational Signage and Outreach for the Wolf River Greenway
GRANT YEAR: FY2021
WEBSITE: www.wolfriver.org


Greenway Bridge over a Tributary


Wolf River Greenway at Mud Island


Pond adjacent to the Greenway


Bridge over the Wolf River

The Wolf River Conservancy has coordinated the construction of the Wolf River Greenway trail project in Memphis, Tennessee. Approximately 14 miles of the total 26 mile long greenway have been constructed. The construction of phase 12A-1 began, and phase 6 is scheduled to begin. The Wolf River Conservancy Education Committee has discussed options for the placement of the non-point source stormwater education signage at various points along the trail, including the information, design, and verbiage. The most likely locations for stormwater education signs are at pedestrian bridges across the Wolf River, and its urban tributary streams where they intersect with the Wolf River Greenway. Conservancy staff has identified a possible contractor for producing the signage in the future.

APPENDIX A

LONG TERM GOALS—
CURRENT PROGRESS SUMMARY

LONG TERM GOALS - CURRENT PROGRESS SUMMARY

Introduction

The table below summarizes the long term goals set for the Tennessee Nonpoint Source Program (TN-NPS). The table was adapted from the *Tennessee Department of Agriculture Nonpoint Source Program Management Document* as approved by the U.S. Environmental Protection Agency (EPA) in 2014, and updated in 2019. The intent of the table below is to be evaluated and populated annually during the preparation of the Annual Report, in order to determine if the long term goals set forth in 2014 are on-track to be completed by the end of this second 5-year Planning Period (2020 – 2024). The overall progress of the program, as well as the sector-specific goals, will be monitored; and, management of the program and/or specific sectors will be adapted as needed if adequate progress is not being made. The annual evaluation will assist with making necessary changes to the program as soon as issues are identified, as opposed to only discovering challenges towards the end of the Planning Period (when too little time remains to correct the program's path). The progress for each aggregate and sector-specific goal is provided as:

- **On track to achieve outcomes** - adequate progress has been made towards the long term goal such that there is a high likelihood of being reached by the end of the Planning Period.
- **Exceeded expectations** - exceptional progress has been made towards reaching the long term goal such that there is a high likelihood of being reached prior ahead of schedule.
- **Insufficient progress** - the pace of output achieved must improve in order to ensure that the long term goal can be reached by the end of the 5-year Planning Period.

While many of the annual goals are quantitative in nature, the outcomes are somewhat qualitative. TN-NPS staff used their best judgment while populating the table in order to gauge the overall progress of the program. Additional, detailed information about the Measures of Success used (in part) to determine the annual progress of the long term goals can be found on the Measures of Success Checklists in Appendix B.

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
Long Term Goal No. 1: Restore impaired water bodies (i.e., those on the 303(d) list) by implementing best management practices (BMPs) that address nonpoint source pollution.	Aggregate	• Restore 2 water bodies every other year, on average. • Reduce N load by 5,000 lbs/year; P_2O_5 load by 5,000 lbs/year; and sediment load by 200 tons/year (minimum reductions)	• Improve water quality by reducing water quality impacts from nonpoint sources.	**Exceeded expectations.** *All aggregate goals were met or exceeded.*	**Exceeded expectations.** *All aggregate goals were met or exceeded.*	**Exceeded expectations.** *All aggregate goals were met or exceeded.*		
	Agriculture	• Fund no less than 3 projects each year that address agricultural sources of NPS pollution, depending on the number and quality of proposals received. • Fund the implementation of no less than 65 agricultural BMPs per year. • Staff Watershed Coordinators will perform no less than 200 site visits each year to inspect BMPs pre-, during-, and post-construction.		**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*		
	Forestry	• Fund no less than 1 forestry-based project each year, depending on the number and quality of proposals received. • Fund the implementation of no less than 5 forestry BMPs each year, depending on the number of active forestry restoration projects.		**Insufficient progress.** *No BMP-related forestry proposals were received; 1 forestry BMP was installed.*	**Insufficient progress.** *No BMP-related forestry proposals were received; three forestry BMPs were installed.*	**Insufficient progress.** *No BMP-related forestry proposals were received; only two forestry BMPs were installed.*		

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
	Urban	• Fund no less than 2 projects focused on stormwater issues in developed areas each year, depending on the number and quality proposals received. • Fund no less than 12 stormwater BMPs each year, depending on the number of active urban/suburban restoration projects. • Staff Watershed Coordinators will perform no less than 15 site visits each year to inspect various stormwater BMPs pre-, during-, and post-construction.		**On track to achieve outcomes.** *While the BMP was exceeded, additional site visits to urban project areas need to be made.*	**On track to achieve outcomes.** *While the number of BMPs and projects funded was exceeded, additional site visits to urban project areas need to be made.*	**On track to achieve outcomes.** *The number of urban BMPs increased sharply, but additional site visits to urban project areas need to be made.*		
	Failing Septic	• Fund the repair/replacement of no less than 20 failing septic systems each year, depending on the number of active projects that address failing septic systems. • Staff Watershed Coordinators will perform no less than 20 site visits each year to inspect work on repair/replacement of failing septic systems.		**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Insufficient progress.** *Only 14 septic system repair/replacements were made in FFY2022.*		
	Legacy Mining	• Fund no less than 1 project addressing legacy mining concerns each year, depending on the number and quality of proposals received. • Fund no less than 1 BMP addressing legacy mining concerns each year, depending on the number of active legacy mining projects. • Staff Watershed Coordinators will perform no less than 1 site visit each year to inspect legacy mining BMPs pre-, during-, and post-construction, depending on the number of active legacy mining projects.		**Insufficient progress.** *No legacy mining-related proposals were received, and no BMPs were completed this fiscal year.*	**Insufficient progress.** *No legacy mining-related proposals were received, no BMPs were completed this fiscal year, and no site visits were conducted for this sector.*	**Insufficient progress.** *No legacy mining-related proposals were received, no BMPs were completed this fiscal year, and no site visits were conducted for this sector.*		
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various	Aggregate	• TN-NPS staff will attend/participate in at least 10 educational events each year. • Fund at least 20 educational events each year, depending on the number of active NPS pollution educational projects funded. • Document at least 2,000 citizens	• Improve relations with stakeholders, potential applicants, and partners. • Increase awareness of nonpoint source impacts.	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*		

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
audiences.		presented with messages addressing NPS pollution sources, problems, and solutions each year. • Develop a general evaluation form to be completed by all participants at the conclusion of each educational event.						
	Agriculture	• TN-NPS staff will attend/participate in at least 4 educational events each year targeting an agricultural audience. • Fund at least 5 educational events targeting an agricultural audience. • Document at least 600 citizens presented with messages addressing NPS pollution sources, problems, and solutions. • Respond to 100% of Animal Feeding Operations complaints . • Direct AFO owner/operators to NRCS for mitigation, as necessary.		**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*		
	Forestry	• TN-NPS staff will attend/participate in at least 1 educational event each year targeting a forestry audience. • Fund at least 1 educational events each year targeting a forestry audience, depending on the number of active projects aimed at forestry issues. • Document at least 200 citizens presented with messages addressing NPS pollution concerns stemming from forestry-related activities.		**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*		
	Urban	• TN-NPS staff will attend/participate in at least 3 educational events each year targeting an urban/suburban audience. • Fund at least 10 educational events each year targeting an urban/suburban audience, depending on the number of active projects aimed at urban/suburban issues. • Document at least 1,000 citizens presented with messages addressing NPS pollution concerns stemming from stormwater in urban/suburban areas.		**On track to achieve outcomes.** *While the goal of 1,000 citizens reached with urban NPS messaging was exceeded, more educational events are needed.*	**On track to achieve outcomes.** *The number of educational events funded was exceeded; however, the total number of citizens reached failed to reach our goal.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*		

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
	Failing Septic	• TN-NPS staff will attend/participate in at least 1 educational event each year targeting an audience with failing septic concerns. • Fund at least 1 educational event each year targeting an audience concerned with NPS pollution from failing septic systems. • Document at least 100 citizens presented with messages addressing NPS pollution concerns stemming from failing septic systems.		**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*		
	Legacy Mining	• TN-NPS staff will attend/participate in at least 1 educational event each year targeting an audience dealing with legacy mining concerns. • Fund at least 1 educational event each year targeting an audience concerned with NPS pollution from legacy mining activities. • Document at least 100 citizens presented with messages addressing NPS pollution concerns stemming from legacy mining activities.		**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*	**Exceeded expectations.** *All short term goals for this segment were met or exceeded.*		
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	Aggregate	• TN-NPS staff will attend at least 8 stakeholder meetings each year to promote the TN-NPS program and recruit and cultivate new partners for future projects. • TN-NPS program will conduct an annual survey of partners, seeking their input for ways our program can improve and better meet existing needs. • TN-NPS staff will provide assistance (as requested) in writing Watershed Based Plans; particularly map-making and load reduction estimates. • TN-NPS program will improve information and tools available on our website to aid in the writing of Watershed Based Plans. • TN-NPS staff will attend at least 3 workshops to promote the 319 program	• Improve relations with stakeholders, potential applicants, and partners. • Increase awareness of nonpoint source impacts. • Educate citizens regarding management practices to prevent or minimize nonpoint source pollution.	**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector except for the development of online Watershed Based Planning tools.*	**On track to achieve goals**. *All goals met for this sector.*		

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
		each year.						
	Agriculture	• TN-NPS staff will attend at least 3 stakeholder meetings or workshops to promote the 319 program each year.		**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*		
	Forestry	• TN-NPS staff will attend at least 1 stakeholder meeting (e.g., TN Forestry Association or the TN Urban Forestry Council) each year to promote the TN-NPS program.		**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*		
	Urban	• TDA-NPS staff will attend at least 2 stakeholder meetings each year to promote the TN-NPS program. • TN-NPS staff will attend the annual meeting of the Tennessee Stormwater Association (TNSA) each year.		**Exceeded expectations.** *All applicable short term goals for this segment were exceeded.*	**On track to achieve goals.** *Although the number of stakeholder meeting attended was exceeded, no urban-specific regional meetings were attended.*	**Exceeded expectations.** *All applicable short term goals for this segment were met or exceeded.*		
	Failing Septic	• TN-NPS staff will attend at least 1 stakeholder meeting each year to promote the TN-NPS program.		**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*		
	Legacy Mining	• TN-NPS staff will attend at least 1 stakeholder meeting each year to promote the TN-NPS program.		**Insufficient progress.** *No legacy mining stakeholder meetings were attended by staff.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*	**Exceeded expectations.** *All short term goals for this segment were exceeded.*		
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies.	Aggregate	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	• Increase knowledge of effective and efficient sector-specific BMPs and improve measures of success tracking.	**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*			
	Agriculture	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities,		**On track to achieve goals**. *All goals met for*	**On track to achieve goals**. *All goals met for*			

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
		pollutant load reductions, and capacity building efforts.		*this sector.*	*this sector.*			
	Forestry	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.		**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*		
	Urban	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.		**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*		
	Failing Septic	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.		**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*		
	Legacy Mining	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.		**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*	**On track to achieve goals**. *All goals met for this sector.*		
Long Term Goal No. 5: Protect unimpaired/high quality waters (i.e., those not on the 303(d) list) by implementing appropriate BMPs where warranted.	Aggregate	• Consider funding at least 1 project proposal aimed at protection of unimpaired water body each year, dependent upon nature of proposals received.	• Research possible avenues to increase the funding of protective projects.	**On track to achieve goals**. *All goals met for this sector.*	**Not applicable.** *No protection-based proposals were received this fiscal year.*	**Not applicable.** *No protection-based proposals were received this fiscal year.*		
	Agriculture	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Forestry	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Urban	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Failing Septic	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Legacy Mining	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	Aggregate	• TN-NPS program will do everything necessary to achieve "Satisfactory Progress" determination by USEPA each year. • TN-NPS program will submit an Annual Report by December 31 each year. • TN-NPS program will submit a Grant Application by September 30 each year. • TN-NPS program will submit an Annual Workplan by May 31 each year. • All grant data will be entered in the Grants Reporting and Tracking System (GRTS) by the various deadlines given each year. • All grant funds received will be obligated within one year of the date the grant is received. • Each grant received from USEPA will be matched my no less than 40% by a combination of state and local funds. • TN-NPS staff will attend the annual GRTS users meeting each year. • TN-NPS staff will attend the National Nonpoint Source Managers meeting as often as it is held. • TN-NPS staff will attend the Regional Nonoint Source Managers meeting as often as it is held. • TN-NPS program will revise the Management Program Document every 5 years, or as required by USEPA.	• Continue to receive 319 grant funds for statewide disbursement.	**On track to achieve goals**. *Most goals were met for this sector; however, the revisions to the Management Program Document still need to be finalized and the FFY21 Grant Application is currently pending.*	**Insufficient progress.** *The Management Program Document is still pending, and two deadlines were not met.*	**Insufficient progress.** *The Management Program Document is still pending, and one contract from FFY2021 was pending (as of the date of this document.*		
	Agriculture	• Not Applicable - grant award obligations are not defined by pollutant sector.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Forestry	• Not Applicable - grant award obligations are not defined by pollutant sector.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Urban	• Not Applicable - grant award obligations are not defined by pollutant sector.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		
	Failing Septic	• Not Applicable - grant award obligations are not defined by pollutant sector.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		

LONG TERM GOALS, ANNUAL GOALS, and OUTCOMES								
Long Term Goal (5 year)	**Sector**	**Annual Goals (outputs; Annual Goal x 5 = Long Term Goal measure)**	**Outcomes**	**Progress Made in Year 1 (FFY2020)**	**Progress Made in Year 2 (FFY2021)**	**Progress Made in Year 3 (FFY2022)**	**Progress Made in Year 4 (FFY2023)**	**Progress Made in Year 5 (FFY2024)**
	Legacy Mining	• Not Applicable - grant award obligations are not defined by pollutant sector.		**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*	**Not applicable.** *This goal does not apply.*		

Note: The table above will be populated each year as the program is evaluated. Annual tracking will assist with adaptive management measures needed for keeping the TN-NPS program moving in the right direction.

Conclusion

As in previous years, the forestry and legacy mining sectors continue to be challenging. Uncharacteristically for our program, we also had fewer septic system projects completed, while experiencing a large increase in the number of urban projects completed. Anecdotally, the septic system sector may have suffered from a shortage of contractors; several partners have indicated that limited availability and higher costs have stymied their efforts to repair/replace more septic system. More attention to meeting internal deadlines need to be a focus as we go forward.

APPENDIX B

MEASURES OF SUCCESS CHECKLISTS

Measures of Success Checklist

Aggregate/Statewide Goals

Prepared for FFY2022 Annual Report

Measures of Success			
Long Term Goal	**Short Term Measure(s) of Success**	**Status**	**Comments**
Long Term Goal No. 1: Restore impaired water bodies by implementing best management practices (BMPs) that address nonpoint source pollution.	• Restore 2 water bodies every other year, on average (based on the biennial *List of Impaired Waters* as developed by TDEC).	☒ Met □ Exceeded □ Needs improvement	One Success Story, for McCutcheon Creek, was submitted and approved in August, 2022.
	• Reduce N load by 5,000 lbs/year; P_2O_5 load by 5,000 lbs/year; and sediment load by 200 ton/year (minimum reductions).	□ Met ☒ Exceeded □ Needs improvement	All load reduction goals for nitrogen, phosphorus, and sediment were exceeded.
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.	• TN-NPS staff will attend/participate in at least 10 educational events each year.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff participated in 32 educational workshops in FFY22.
	• Fund at least 20 educational events each year, depending on the number of active NPS pollution educational projects funded.	□ Met ☒ Exceeded □ Needs improvement	In FFY22, the grant funded a total of 23 in-person partner educational outreach efforts, as well as webinars, podcasts, and virtual stakeholder meetings.
	• Document at least 2,000 citizens presented with messages addressing NPS pollution sources, problems, and solutions each year.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff reached over 4,000 citizens during presentations in FFY2022.
	• Implement a general evaluation form to be completed by all participants and the conclusion of each educational event.	☒ Met □ Exceeded □ Needs improvement	

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	• TN-NPS staff will attend at least 8 stakeholder meetings each year to promote the TN-NPS program and recruit and cultivate new partners for future projects.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff presented at 100 stakeholder meetings in FFY2022
	• TN-NPS program will conduct an annual survey of partners, seeking their input for ways our program can improve and better meet existing needs.	☒ Met □ Exceeded □ Needs improvement	The annual participant survey was conducted May - June, 2022; unfortunately, too few responses were received to analyze.
	• TN-NPS staff will provide assistance (as requested) in writing Watershed Based Plans; particularly map-making and load reduction estimates.	☒ Met □ Exceeded □ Needs improvement	Training for watershed based planning was provided in-person and virtually in FFY2022
	• TN-NPS program will improve information and tools available on our website to aid in the writing of Watershed Based Plans.	□ Met □ Exceeded ☒ Needs improvement	
	• TN-NPS staff will attend at least 3 stakeholder meetings or workshops to promote the 319 program each year.	□ Met ☒ Exceeded □ Needs improvement	Staff attended over 70 stakeholder meetings in FFY2022.
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies via adaptive management process.	• Continue the implementation a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	☒ Met □ Exceeded □ Needs improvement	
Long Term Goal No. 5: Protect unimpaired/ high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.	• Consider funding at least 1 project proposal aimed at protection of unimpaired water body each year, dependent upon nature of proposals received.	□ Met □ Exceeded □ Needs improvement	N/A; no protection project proposals were received for funding this fiscal year.

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	• TN-NPS program will do everything necessary to achieve "Satisfactory Progress" determination by USEPA each year.	☒ Met □ Exceeded □ Needs improvement	
	• TN-NPS program will submit an Annual Report by December 31 each year.	□ Met ☒ Exceeded □ Needs improvement	The FFY2020 Annual Report was submitted on December 30, 2021.
	• TN-NPS program will submit a Grant Application by September 30 each year.	□ Met □ Exceeded ☒ Needs improvement	The final Grant Application was submitted November 23, 2022 due to delays from internal review.
	• TN-NPS program will submit an Annual Workplan by May 31 each year.	☒ Met □ Exceeded □ Needs improvement	
	• All grant data will be entered in the Grants Reporting and Tracking System (GRTS) by the various deadlines given each year.	□ Met ☒ Exceeded □ Needs improvement	GRTS data is entered on a continuous/rolling basis as information is received.
	• All grant funds received will be obligated within one year of the date the grant is received.	□ Met □ Exceeded ☒ Needs improvement	As of the time of this document development, one contract, for the Tennessee Resource and Conservation Development from FFY2021 is still pending.
	• Each grant received from USEPA will be matched my no less than 40% by a combination of state and local funds.	☒ Met □ Exceeded □ Needs improvement	
	• TN-NPS staff will attend the annual GRTS users meeting each year.	□ Met □ Exceeded □ Needs improvement	N/A; no GRTS meeting was held this year.

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal 6, cont.	• TN-NPS staff will attend the National Nonpoint Source Managers meeting as often as it is held.	□ Met □ Exceeded □ Needs improvement	N/A; this meeting was not held this fiscal year.
	• TN-NPS staff will attend the Regional Nonpoint Source Managers meeting as often as it is held.	□ Met □ Exceeded □ Needs improvement	N/A; this meeting was not held this fiscal year.
	• TN-NPS program will revise the Management Program Document every 5 years, or as required by USEPA.	□ Met □ Exceeded ☒ Needs improvement	Revisions for the most recent version of the Management Program Document are currently pending.

If the short term has been met or exceeded, please provide an explanation of how this was determined (i.e. list of objectives completed, activities performed, etc.):

Staff met or exceeded the goals set for outreach, education, and community involvement.

If the short term has not been met, please provide an explanation of the variance:

While TN-NPS staff are exceeding expectations in several areas, additional care needs to be given to meeting deadlines, such as executing contracts in a timely fashion.

Measures of Success Checklist

Agricultural Sector Short Term Goals

Prepared for FFY2022 Annual Report

Measures of Success			
Long Term Goal	**Short Term Measure(s) of Success**	**Status**	**Comments**
Long Term Goal No. 1: Restore impaired water bodies by implementing best management practices (BMPs) that address nonpoint source pollution.	• Fund no less than 3 projects each year that address agricultural sources of NPS pollution, depending on the number and quality of proposals received.	□ Met ☒ Exceeded □ Needs improvement	Nine projects funded impact agriculture either directly (installing practices) or indirectly (education or monitoring).
	• Fund the implementation of no less than 65 agricultural BMPs per year.	□ Met ☒ Exceeded □ Needs improvement	Over 60 agricultural practices were installed.
	• Staff Watershed Coordinators will perform no less than 200 site visits each year to inspect BMPs pre-, during-, and post-construction.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff recorded more than 1,800 agricultural site visits.
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.	• TN-NPS staff will attend/participate in at least 4 educational events each year targeting an agricultural audience.	□ Met ☒ Exceeded □ Needs improvement	Staff presented at 7 educational events/ workshops in FFY2022.
	• Fund at least 5 educational events targeting an agricultural audience.	□ Met ☒ Exceeded □ Needs improvement	Section 319 funds assisted 17 partner educational events addressing agricultural issues were held in FFY2022.
	• Document at least 600 citizens presented with messages addressing NPS pollution sources, problems, and solutions.	□ Met ☒ Exceeded □ Needs improvement	Partners and TN-NPS staff educated over 1,000 citizens on agricultural issues through Farm Tours, mailers, magazine articles, etc.
	• Respond to 100% of Animal Feeding Operations complaints.	☒ Met □ Exceeded □ Needs improvement	
	• Direct AFO owner/operators to NRCS for mitigation, as necessary.	☒ Met □ Exceeded □ Needs improvement	

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	• TN-NPS staff will attend at least 3 stakeholder meetings each year to promote the TN-NPS program and recruit and cultivate new partners for future projects.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff attended over 30 stakeholder meetings in FFY2022.
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies via adaptive management process.	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	☒ Met □ Exceeded □ Needs improvement	
Long Term Goal No. 5: Protect unimpaired/high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.	N/A	
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	• Not Applicable - grant award obligations are not defined by pollutant sector.	N/A	

If the short term has been met or exceeded, please provide an explanation of how this was determined (i.e. list of objectives completed, activities performed, etc.):

All the goals for this sector were met or exceeded in FFY2022 based on tracked attendance by TN-NPS.

If the short term has not been met, please provide an explanation of the variance:

N/A; all the goals for this sector were met or exceeded in FFY2022.

Measures of Success Checklist

Forestry Sector Short Term Goals

Prepared for FFY2022 Annual Report

Measures of Success			
Long Term Goal	**Short Term Measure(s) of Success**	**Status**	**Comments**
Long Term Goal No. 1: Restore impaired water bodies by implementing best management practices (BMPs) that address nonpoint source pollution.	• Fund no less than 1 forestry-based project each year, depending on the number and quality of proposals received.	□ Met □ Exceeded □ Needs improvement	N/A; although some proposals may include a few forestry-based practices, no proposals pertaining primarily to forestry were received in FFY2022.
	• Fund the implementation of no less than 5 forestry BMPs each year, depending on the number of active forestry restoration projects.	□ Met □ Exceeded ☒ Needs improvement	Two forestry practices were funded in FFY2022.
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.	• TN-NPS staff will attend/participate in at least 1 educational event each year targeting a forestry audience.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff presented at five workshops that addressed forestry issues in FFY2022.
	• Fund at least 1 educational events each year targeting a forestry audience, depending on the number of active projects aimed at forestry issues.	☒ Met □ Exceeded □ Needs improvement	Four educational projects, which cover all sectors of NPS pollution, were funded in FFY2022.
	• Document at least 200 citizens presented with messages addressing NPS pollution concerns stemming from forestry-related activities.	□ Met ☒ Exceeded □ Needs improvement	About 1,000 citizens were provided with information about forestry subjects by TN-NPS staff this fiscal year.

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	• TN-NPS staff will attend at least 1 stakeholder meeting (e.g., TN Forestry Association or the TN Urban Forestry Council) each year to promote the TN-NPS.	□ Met ☒ Exceeded □ Needs improvement	Staff attended 13 stakeholder meetings that addressed forestry-related issues.
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies via adaptive management process.	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	☒ Met □ Exceeded □ Needs improvement	
Long Term Goal No. 5: Protect unimpaired/ high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.	N/A	
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	• Not Applicable - grant award obligations are not defined by pollutant sector.	N/A	

If the short term has been met or exceeded, please provide an explanation of how this was determined (i.e. list of objectives completed, activities performed, etc.):

In FFY2022, forestry education and outreach goals were largely met. TN-NPS staff and partners exceeded outreach goals through workshops, meetings, and printed materials.

If the short term has not been met, please provide an explanation of the variance:

Additional work needs to be done recruiting forestry-centered projects and promoting forestry BMPs.

Measures of Success Checklist

Urban Sector Short Term Goals

Prepared for FFY2022 Annual Report

Measures of Success			
Long Term Goal	**Short Term Measure(s) of Success**	**Status**	**Comments**
Long Term Goal No. 1: Restore impaired water bodies by implementing best management practices (BMPs) that address nonpoint source pollution.	• Fund no less than 2 projects focused on stormwater issues in developed areas each year, depending on the number and quality proposals received.	□ Met ☒ Exceeded □ Needs improvement	Nine projects that address urban issues (watershed and educational) were funded in FFY2022.
	• Fund no less than 12 stormwater BMPs each year, depending on the number of active urban/suburban restoration projects.	□ Met ☒ Exceeded □ Needs improvement	A total of 57 urban practices were installed this fiscal year, a large increase over FFY2021.
	• Staff Watershed Coordinators will perform no less than 15 site visits each year to inspect various stormwater BMPs pre-, during-, and post-construction.	□ Met □ Exceeded ☒ Needs improvement	TN-NPS staff conducted10 urban-based site visits in FFY2022.
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.	• TN-NPS staff will attend/participate in at least 3 educational events each year targeting an urban/surburban audience.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff participated in four educational workshops.
	• Fund at least 10 educational events each year targeting an urban/suburban audience, depending on the number of active projects aimed at urban/surburban.	□ Met ☒ Exceeded □ Needs improvement	In FFY2022, 14 education events (e.g. teacher workshops) were funded.
	• Document at least 1,000 citizens presented with messages addressing NPS pollution concerns stemming from stormwater in urban/suburban areas.	□ Met ☒ Exceeded □ Needs improvement	Over 1,700 citizens were educated on urban-based pollution by TN-NPS staff and grantees during events.

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	• TN-NPS staff will attend at least 2 stakeholder meetings each year to promote the TN-NPS program. • TN-NPS staff will attend the annual meeting of the Tennessee Stormwater Association (TNSA), American Water Resources Association, or equivalent, each year.	□ Met ☒ Exceeded □ Needs improvement ☒ Met □ Exceeded □ Needs improvement	TN-NPS staff attended 11 stakeholder meetings that addressed urban issues. John McClurkan attended TNSA on October 19, 2021.
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies via adaptive management process.	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	☒ Met □ Exceeded □ Needs improvement	
Long Term Goal No. 5: Protect unimpaired/ high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.	N/A	
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	• Not Applicable - grant award obligations are not defined by pollutant sector.	N/A	

If the short term has been met or exceeded, please provide an explanation of how this was determined (i.e. list of objectives completed, activities performed, etc.):

All but one goal for urban sector were met or exceeded for FFY2022, with a much higher recruitment for cooperators installing urban BMPs. This may be due to higher funding in the agricultural sector through ARCF (which translated to fewer agriculture practices being funded through Section 319).

If the short term has not been met, please provide an explanation of the variance:

Additional site visits need to be conducted moving forward to meet all the urban sector goals.

Measures of Success Checklist

Failing Septic Sector Short Term Goals

Prepared for FFY2022 Annual Report

Measures of Success			
Long Term Goal	**Short Term Measure(s) of Success**	**Status**	**Comments**
Long Term Goal No. 1: Restore impaired water bodies by implementing best management practices (BMPs) that address nonpoint source pollution.	• Fund the repair/replacement of no less than 20 failing septic systems each year, depending on the number of active projects that address failing septic systems.	□ Met □ Exceeded ☒ Needs improvement	Only 14 failing septic systems were repaired or replaced in FFY2022.
	• Staff Watershed Coordinators will perform no less than 20 site visits each year to inspect work on repair/replacement of failing septic systems.	□ Met ☒ Exceeded □ Needs improvement	Staff conducted 39 site visits related to septic system repairs this fiscal year.
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.	• TN-NPS staff will attend/participate in at least 1 educational event each year targeting an audience with failing septic concerns.	□ Met ☒ Exceeded □ Needs improvement	Staff participated in three workshops that addressed septic issues in FFY2022.
	• Fund at least 1 educational event each year targeting an audience concerned with NPS pollution from failing septic systems.	□ Met ☒ Exceeded □ Needs improvement	Partners hosted 11 events (e.g. teacher workshops) that educated the public about all sectors (including septic).
	• Document at least 100 citizens presented with messages addressing NPS pollution concerns stemming from failing septic systems.	□ Met ☒ Exceeded □ Needs improvement	Over 4,000 citizens were reached with messaging about septic pollution through workshops and mailers. Knox County reached approximately 2,100 individuals alone.

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	• TN-NPS staff will attend at least 1 stakeholder meeting each year to promote the TN-NPS program.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff attended 10 stakeholder meetings that addressed septic.
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies via adaptive management process.	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	☒ Met □ Exceeded □ Needs improvement	
Long Term Goal No. 5: Protect unimpaired/ high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.	N/A	
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	• Not Applicable - grant award obligations are not defined by pollutant sector.	N/A	

If the short term has been met or exceeded, please provide an explanation of how this was determined (i.e. list of objectives completed, activities performed, etc.):

All education and outreach goals for this sector were met or exceeded for FFY2022.

If the short term has not been met, please provide an explanation of the variance:

Fewer septic repairs were completed in FFY2022 than in previous years. This is partly due to the sharply rising costs of contractors and limited labor availability.

Measures of Success Checklist

Legacy Mining Sector Short Term Goals

Prepared for FFY20<u>22</u> Annual Report

Measures of Success			
Long Term Goal	**Short Term Measure(s) of Success**	**Status**	**Comments**
Long Term Goal No. 1: Restore impaired water bodies by implementing best management practices (BMPs) that address nonpoint source pollution.	• Fund no less than 1 project addressing legacy mining concerns each year, depending on the number and quality of proposals received.	□ Met □ Exceeded □ Needs improvement	N/A; no proposals addressing legacy mining were received in FFY2022.
	• Fund no less than 1 BMP addressing legacy mining concerns each year, depending on the number of active legacy mining projects.	□ Met □ Exceeded ☒ Needs improvement	No practices to mitigate legacy mining were installed in FFY2022.
	• Staff Watershed Coordinators will perform no less than 1 site visits each year to inspect legacy mining BMPs pre-, during-, and post-construction, depending on the number of active legacy mining projects	□ Met □ Exceeded ☒ Needs improvement	No site visits were performed this fiscal year for legacy mining in FFY2022. One legacy mining project is in progress; however, permitting delays have postponed BMP installation.
Long Term Goal No. 2: Build citizen awareness of problems and solutions related to nonpoint source pollution through local and statewide education efforts targeting various audiences.	• TN-NPS staff will attend/participate in at least 1 educational event each year targeting an audience dealing with legacy mining concerns.	☒ Met □ Exceeded □ Needs improvement	TN-NPS staff participated in two educational workshops that addressed legacy mining pollution issues.
	• Fund at least 1 educational event each year targeting an audience concerned with NPS pollution from legacy mining activities.	□ Met ☒ Exceeded □ Needs improvement	Ten teacher workshops (which address all sectors of pollution) were held in FFY2022.
	• Document at least 100 citizens presented with messages addressing NPS pollution concerns stemming from legacy mining activities.	□ Met ☒ Exceeded □ Needs improvement	Our partners reached approximately 200 citizens with messaging about legacy mining issues through podcasts and teach-the-teacher workshops.

Long Term Goal	Short Term Measure(s) of Success	Status	Comments
Long Term Goal No. 3: Build capacity for future TN-NPS projects in local watersheds by engaging stakeholders and potential partners through outreach and personal contact.	• TN-NPS staff will attend at least 1 stakeholder meeting each year to promote the TN-NPS program.	□ Met ☒ Exceeded □ Needs improvement	TN-NPS staff attended six stakeholder meeting that addressed legacy mining.
Long Term Goal No. 4: Track interim progress towards restoration of impaired water bodies via adaptive management process.	• Continue the implementation of a sector-based tracking mechanism for BMP implementation, educational activities, pollutant load reductions, and capacity building efforts.	☒ Met □ Exceeded □ Needs improvement	
Long Term Goal No. 5: Protect unimpaired/ high quality waters (i.e., those not on the list of impaired waters) by implementing appropriate BMPs where warranted.	• Not applicable - projects to protect unimpaired waters by definition will not be assigned to any pollutant source.	N/A	
Long Term Goal No. 6: Fulfill all obligations under grant award agreement with USEPA annually.	• Not Applicable - grant award obligations are not defined by pollutant sector.	N/A	

If the short term has been met or exceeded, please provide an explanation of how this was determined (i.e. list of objectives completed, activities performed, etc.):

The outreach goals for legacy mining were met or exceeded for FFY2022.

If the short term has not been met, please provide an explanation of the variance:

Permitting delays have prevented the installation of practices for the lone legacy mining project currently in progress. Difficulty in recruiting new projects is likely due to a number of factors, including the rising cost of materials/contractors, and difficulty finding/retaining consultants with the appropriate expertise.

APPENDIX C

FFY2022 SUCCESS STORIES

NONPOINT SOURCE SUCCESS STORY

Tennessee

Riparian Restoration Supports McCutcheon Creek Recovery

Waterbody Improved

McCutcheon Creek was added to Tennessee's Clean Water Act (CWA) section 303(d) list in 2002 for siltation after a bioreconnaissance survey in 1999 yielded ambiguous results. Multiple nongovernmental organizations, municipalities, and a private industry partnered to assess the watershed and mitigate pollutant sources. Using private donations of time and money, as well as funding from CWA section 319 and the Tennessee Department of Agriculture's (TDA's) Agricultural Resources Conservation Fund (ARCF), the habitat improved. After a 2019 survey indicated a healthy habitat, all 12.27 miles of McCutcheon Creek were delisted for siltation/sedimentation on Tennessee's 2022 List of Impaired and Threatened Waters.

Problem

McCutcheon Creek (TN06040003034_0300) is in the Rutherford Creek Upper Watershed (TN0604000203) in Maury and Williamson counties, Tennessee (Figure 1). The designated uses for McCutcheon Creek include fish and aquatic life, recreation, livestock watering and wildlife, and irrigation. The headwaters of McCutcheon Creek are near the city of Spring Hill, Tennessee, which is one of the Top 10 fastest growing cities in the nation, according to U.S. Census Bureau 2020–2021 data. These data also show that Williamson County is experiencing the most rapid growth in Tennessee. Land use along McCutcheon Creek is evolving quickly from mostly agrarian to densely urban and residential, which is putting significant stress on the stream.

In October 1999, the Tennessee Department of Environment and Conservation (TDEC) performed a bioreconnaissance survey (biorecon or BR) which yielded an ambiguous result with a score of 9. (A biorecon is a screening tool used by TDEC to provide a quick evaluation of the relative health of the biological community. Biorecon scores of 5 to 9 indicate that more information is needed to determine impairment.) A habitat assessment conducted on McCutcheon Creek provided a habitat score of 119. Although a passing score for McCutcheon Creek for that time of year was 114, TDEC field staff noted the presence of sand and silt and high levels of turbidity. Based on these observations, the stream was added to Tennessee's CWA section 303(d) list in 2002 for siltation due to land development and urban runoff/storm sewers. A subsequent evaluation in 2003 indicated a slight decline,

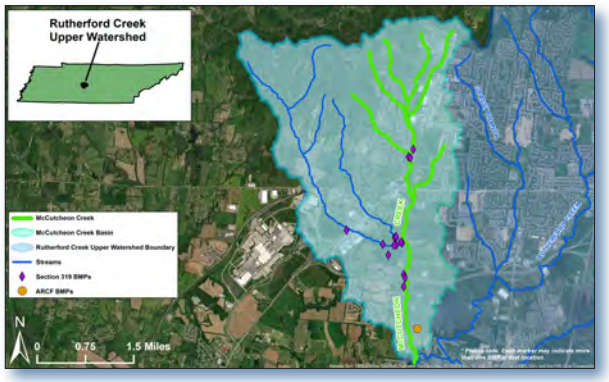


Figure 1. McCutcheon Creek is in central Tennessee.

with a habitat score of 111. In 2010, the habitat score indicated improvement (score of 132); however, due to rapid urbanization in the watershed, TDEC decided to continue surveillance prior to delisting the stream. In 2018, the sources of pollution were updated to site clearance (land development or redevelopment) and grazing in riparian or shoreline zones.

Story Highlights

In 2003, with the assistance of a CWA section 319 grant, the Tennessee Scenic Rivers Association (TSRA) began restoration work along McCutcheon Creek in Jerry Erwin Park in Spring Hill (Figure 2). In 2005, the Harpeth Conservancy (formerly known as the Harpeth River Watershed Association) was contracted to write a watershed-based plan for Rutherford Fork Creek and its tributaries to aid in focusing the efforts of multiple organizations. A third CWA section 319 grant

was awarded to the Tennessee Environmental Council (TEC) in 2010 to continue habitat restoration work in the watershed. In early 2019, the Maury County Soil and Water Conservation District used funds from ARCF to assist with several farm-based best management practices (BMPs). In total, 23 BMPs were installed with the support of CWA section 319 grants, and four BMPs were built using ARCF dollars in the McCutcheon Creek subbasin between August 2004 and August 2022. The CWA section 319 grants totaled $92,500, with nearly 40% of the funds ($35,574) used for on-the-ground projects. Additionally, $12,815 was invested in the subbasin by ARCF. Projects included riparian forest buffers, streambank and shoreline protection, and agricultural practices such as alternative watering sources (Table 1).

Table 1. BMPs installed in the McCutcheon Creek subbasin.

BMPs	Amount installed	Funding source
Channel bank vegetation	528 feet (ft)	319 funds
Raingarden/ bioretention basin	1	319 funds
Riparian forest buffer	11,081 ft	319 funds
Streambank/shoreline protection	1,441 ft	319 funds
Alternative water sources	2	ARCF funds
Heavy use area protection	2	ARCF funds
Pipeline	1,550 ft	ARCF funds
Fence	900 ft	ARCF funds

Results

During TDEC's 2019 sampling cycle, a habitat assessment of McCutcheon Creek generated a habitat score of 124. In addition, a Semi-Quantitative Single Habitat (SQSH) sampling was performed, which measures the abundance and diversity of macroinvertebrates, and the macroinvertebrate community in the stream had recovered sufficiently to earn a Tennessee

Figure 2. The TSRA installed a riparian forest buffer along McCutcheon Creek at Jerry Erwin Park in the city of Spring Hill.

Macroinvertebrate Index (TMI) score of 36 (exceeding the passing score of 32). In Tennessee, the criteria for siltation/sedimentation impairment is quantitative and is based on habitat and the waterbody's associated biology. Because both the habitat and biology had recovered, the criteria for siltation was no longer being violated. McCutcheon Creek is now fully supporting all its designated uses, and TDEC removed it from Tennessee's 2022 List of Threatened and Impaired Waters for siltation/sedimentation from site clearance (land development or redevelopment) and grazing in riparian or shoreline zones.

Partners and Funding

McCutcheon Creek was restored to fully supporting status through the cooperative efforts of nongovernmental organizations, municipalities and private donations. A total of $92,500 was provided through CWA section 319 grants. An additional $55,284 was contributed by key partners, including TSRA, TEC, Harpeth Conservancy, Maury County School District (Spring Hill High School), the Saturn Corporation and private landowners. A private landowner enrolled in the ARCF program provided $3,910 to complete practices along McCutcheon Creek, with additional, unquantified investment of time for education and outreach completed by TDA's Nonpoint Source Program Watershed Coordinators and staff.

U.S. Environmental Protection Agency
Office of Water
Washington, DC

EPA #
November 2022

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Tennessee Department of Agriculture
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APPENDIX D

SECTION 319(h) GRANT PARTICIPANT ANNUAL SURVEY

Appendix D
Section 319(h) Grant
Participant Annual Survey

2022

TENNESSEE DEPARTMENT OF AGRICULTURE

2022

Authored by: Land & Water Stewardship Section Staff

Section 319 Applicant Survey

[Soliciting feedback and managing needs]

The survey provides an opportunity for TDA to learn from grantees and applicants, and to gauge grantee satisfaction.

Introduction to the Section 319 Applicant Survey

The annual 319 Applicant Survey was initiated in the Summer of 2015 in order to assess what grant recipients perceived as the strengths and weaknesses of the current TN-NPS Program. The intent of the survey was to determine if specific needs of the grantees were being met. The survey provides an opportunity for TDA to learn from grantees and applicants, and to gather input regarding grantee satisfaction. Based upon the results of the survey, TDA staff will evaluate potential changes to the project selection process, communication, and grant administration (adaptive management). The questions chosen for the 319 Grantee Survey will be reviewed and refined annually.

Survey Methodology

Questions for the Section 319 Applicant Survey were developed in the Spring of 2022. A total of ten questions were chosen in order to get an adequate idea of the level of satisfaction of the grantees with the current process, while not making the survey overly long or onerous. An email list was developed by compiling the contact information for organizations and agencies that had applied for a 319 grant within the previous five years. The email list included both past recipients, and those parties that applied for a 319 grant, but were not chosen to receive funding. The survey questions were developed into a questionnaire using SurveyMonkey, Inc., accessed at: www.surveymonkey.com. A link to the survey was sent to the email list on May 31, 2022. A follow-up reminder was sent to the survey recipients on June 20, 2022. Due to extremely low participation, the survey was kept open to receive responses until December 15, 2022. A total of 42 individuals received the survey. however, only 7 individuals completed the questionnaire. The poor engagement by applicants made the responses received of limited use by staff.

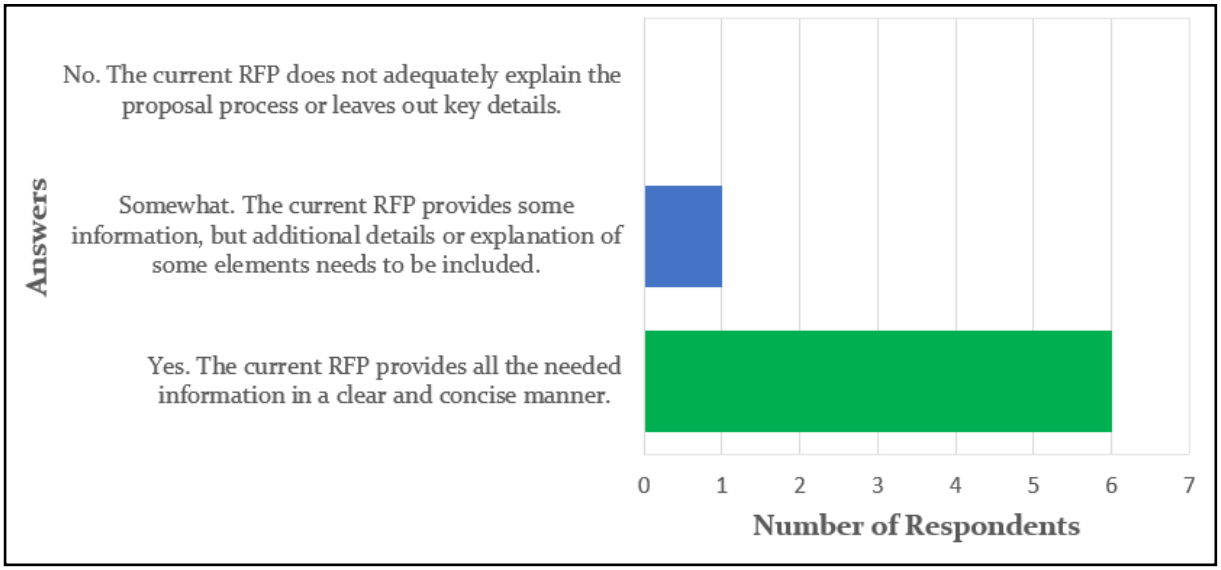
Results

Only seven individuals completed the questionnaire. The poor engagement by applicants made the responses received of limited use by staff. The following is a list of the questions utilized for the survey, as well as the responses received from the survey participants. Please note: none of the questions on the survey were mandatory; that is, participants were able to skip any questions they did not wish to answer.

Question 1: Does the current Request for Proposals (RFP) do a good job of communicating the requirements and expectations for grant proposal applications? *Question Format: Multiple choice.*

A majority of respondents (86 percent), indicated that the current RFP met expectations. Of the respondents, one (14 percent) indicated that they would prefer additional details included in the RFP.

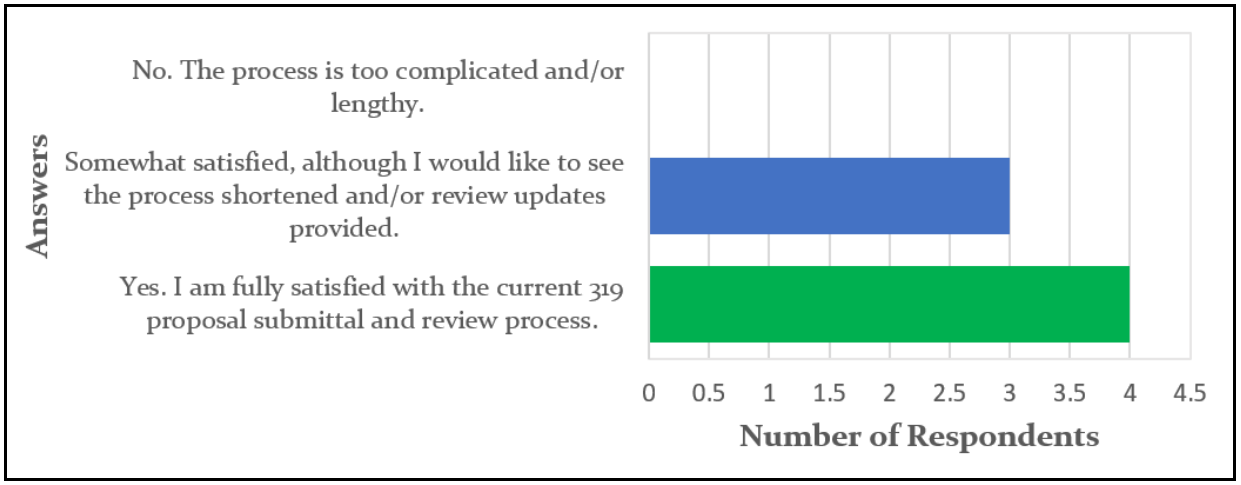
FIGURE 1: DOES THE RFP ADEQUATELY COMMUNICATE APPLICATION REQUIREMENTS



Question 2: Are you satisfied with the current 319 Grant proposal submittal and review process? *Question Format: Multiple choice.*

The percentage of participants that were satisfied with the current 319 Grant proposal process decreased in FFY2022. While no respondents were dissatisfied with the process, 43 percent were only somewhat satisfied with the process.

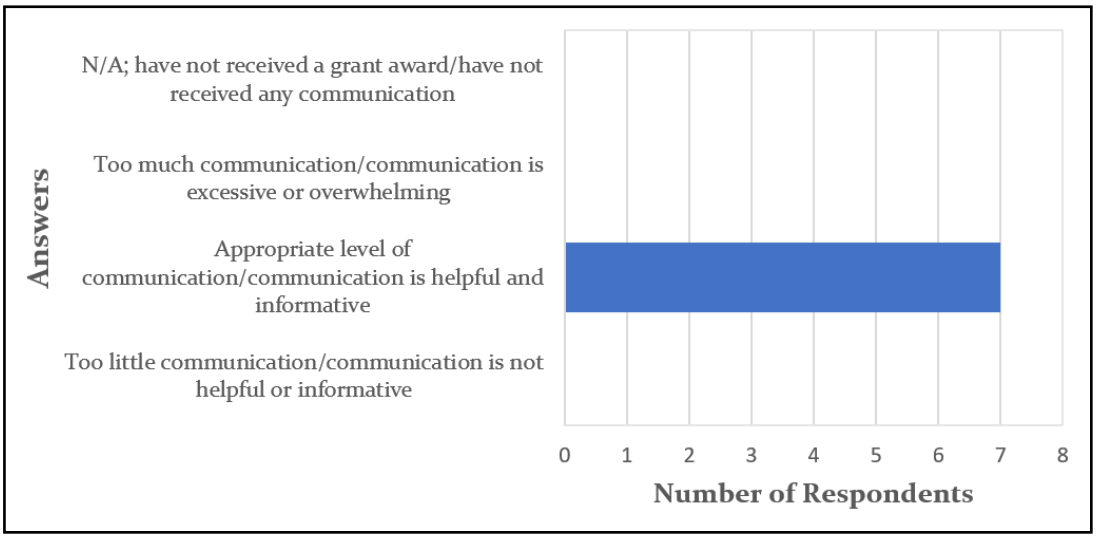
FIGURE 2: SATISFIED WITH THE CURRENT 319 GRANT PROPOSAL PROCESS



Question 3: If you are a past or present grant recipient, are you satisfied with the quantity and quality of communication and contact you receive from the TDA-Nonpoint Source Program? Please rate the current quality of communication. *Question Format: Multiple choice.*

All respondents are satisfied with the current level of communication, per this year's responses.

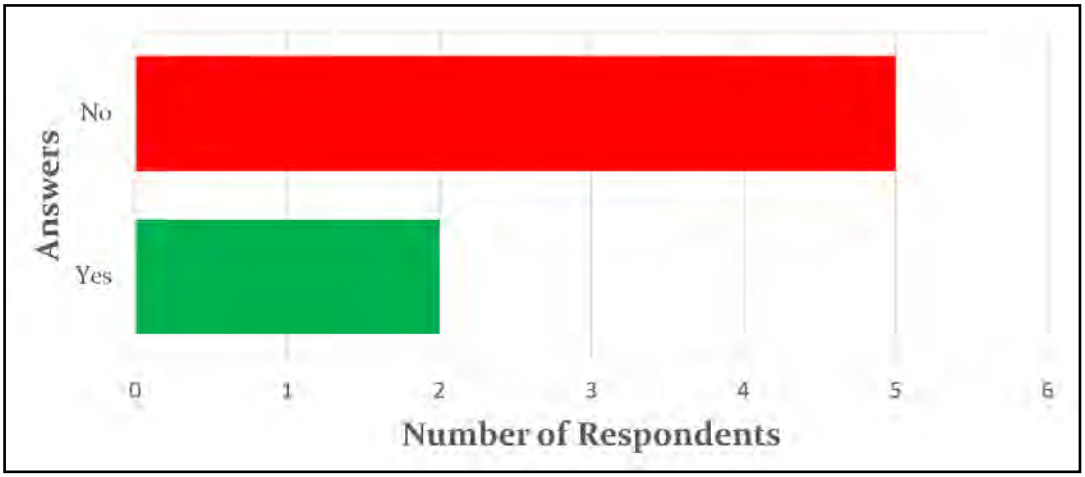
FIGURE 3: SATISFIED WITH CURRENT LEVEL OF COMMUNICATION



Question 4: Would a greater TDA-Nonpoint Source Program social media presence, where information could be posted about upcoming events, successes, and/or funding opportunities be helpful to you or your organization? *Question Format: Yes or no.*

For this year's survey, a majority (71 percent) indicated that a greater social media presence for TDA-NPS would not be beneficial.

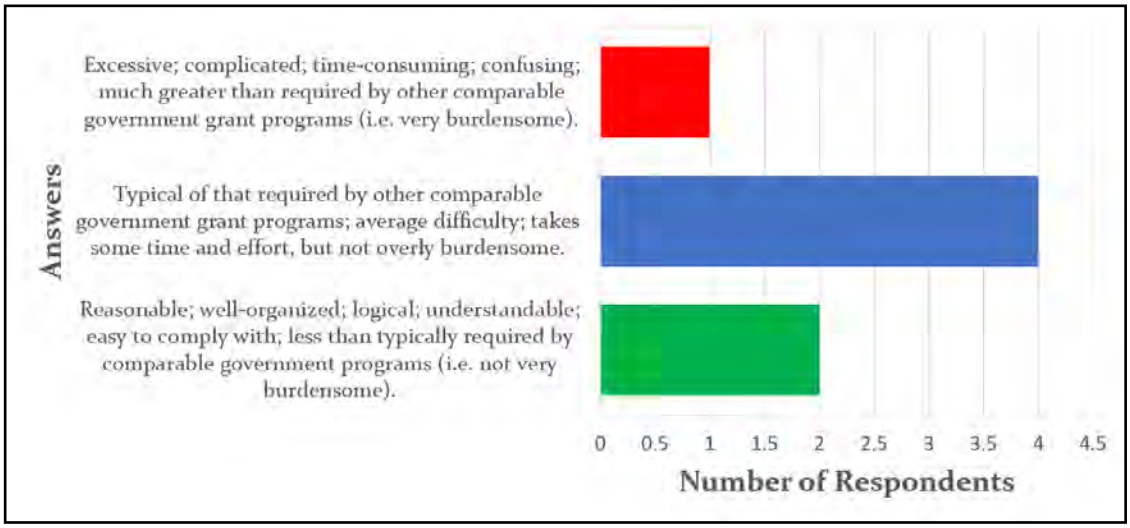
FIGURE 4: WOULD SOCIAL MEDIA PRESENCE BE HELPFUL



Question 5: Which of the following characterizations best describes your feelings regarding the amount of paperwork and reporting required for a 319 Grant in Tennessee? *Question Format: Multiple choice.*

A majority of respondents felt the administrative burden for the Section 319 grant was either typical of other federal grants (57 percent) or reasonable (29 percent).

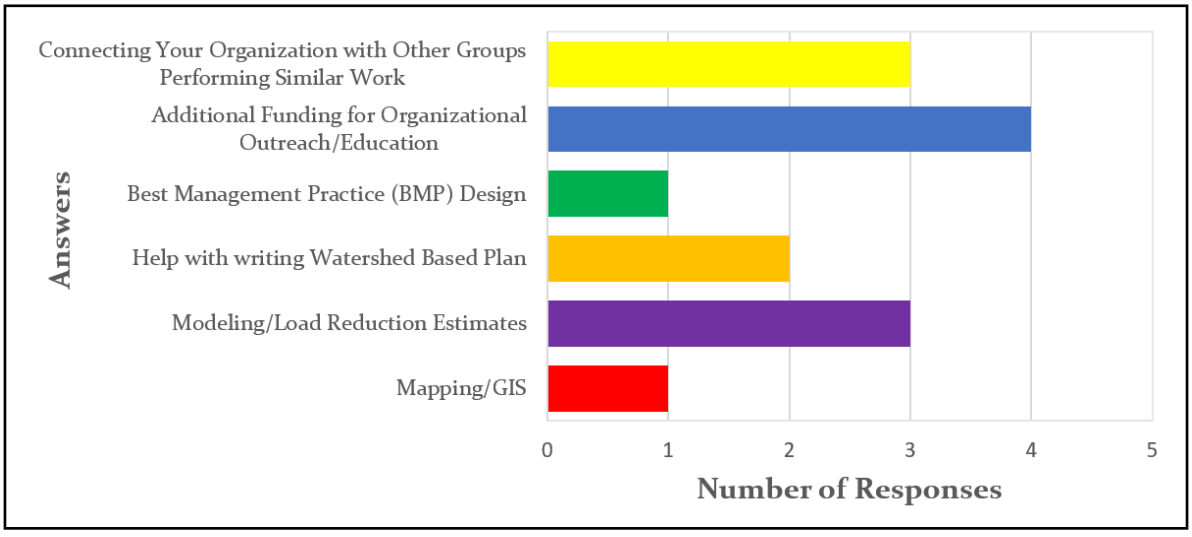
FIGURE 5: FEELINGS REGARDING REQUIRED PAPERWORK AND REPORTING



Question 6: Which of the following technical services would be most useful to your organization, if offered by the TDA-Nonpoint Source Program? Choose all that apply. *Question Format: Multiple choice – choose all that apply.*

For Question 6, respondents were able to choose more than one technical service. Additional funding for outreach and education was the most frequently requested service at 57 percent.

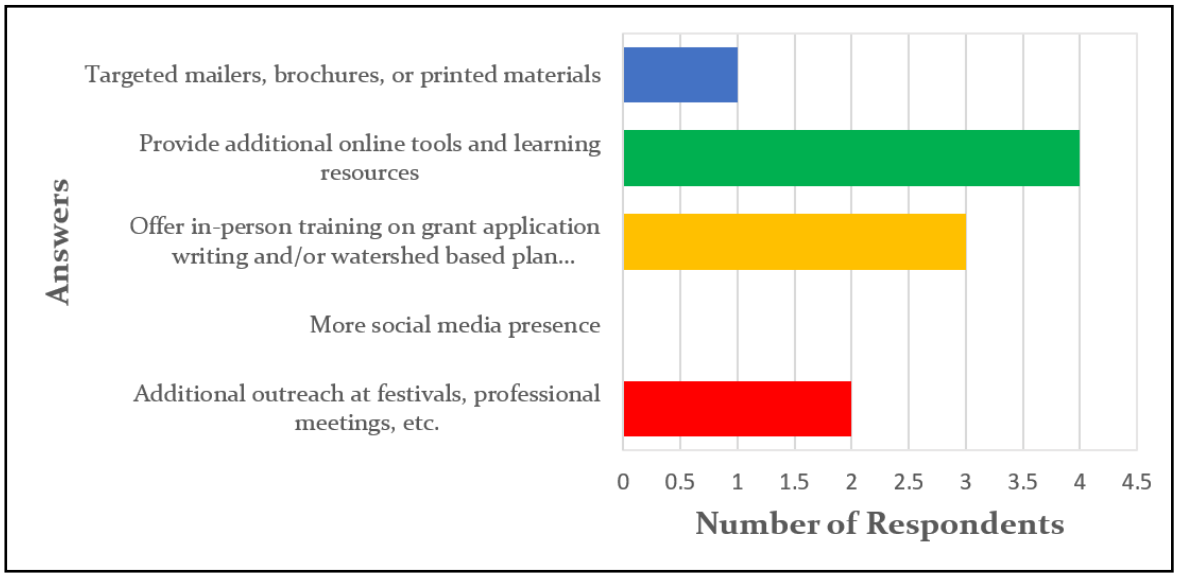
FIGURE 6: RANKING OF USEFUL SERVICES



Question 7: What would be your recommendation(s) as to how the TDA-Nonpoint Source Program could recruit new applicants for 319 Grants? Please check all that apply: *Question Format: Multiple choice – choose all that apply.*

Respondents were able to select multiple tools they believed would be useful in recruiting new applicants to the 319 Grant program. Similar to the responses for Question 4, social media was not a popular choice for connecting with new potential applicants (no responses). The tool most selected was providing additional online tools and resources (four responses).

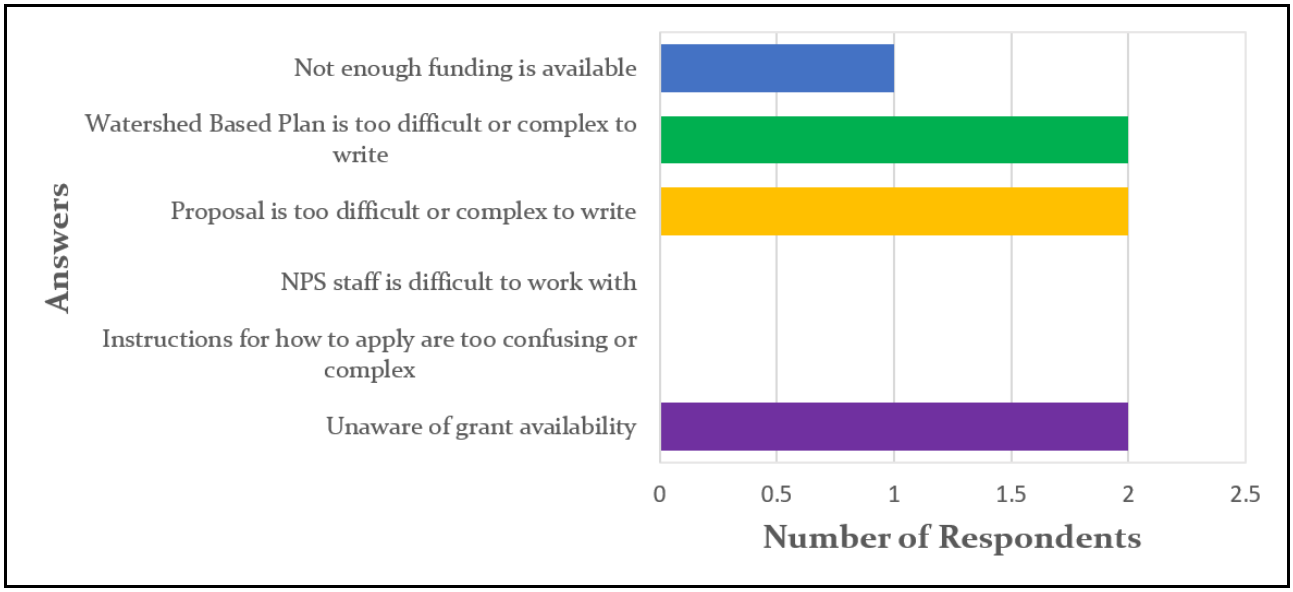
FIGURE 7: MOST USEFUL RECRUITMENT TOOLS



Question 8: What do you think is the primary deterrent when eligible organizations/entities decide NOT to apply for a 319 Grant? *Question Format: Multiple choice.*

Survey participants indicated that awareness of the grant availability, the proposal being too difficult to write, and the watershed based plan being too difficult to write were equally the cause of potential partners failing to apply (29 percent each). One respondent felt that too little funding availability and the complexity of the proposal.

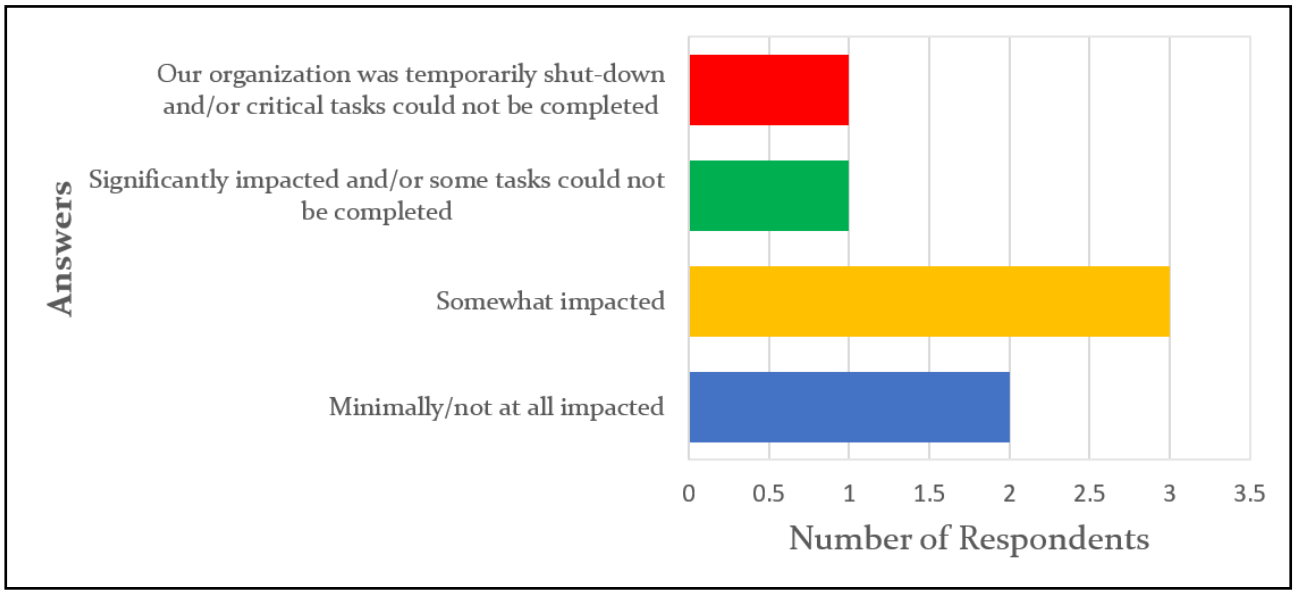
FIGURE 8: DETERRENTS TO APPLYING FOR 319 GRANTS



Question 9: To what extent was your organization's activities impacted by COVID-19? *Question Format: Multiple choice.*

A majority of respondents (86 percent) indicated that the pandemic had at least some impact on their organizations' ability to conduct business. Two individuals (14 percent) responded that their organization was unaffected by COVID-19.

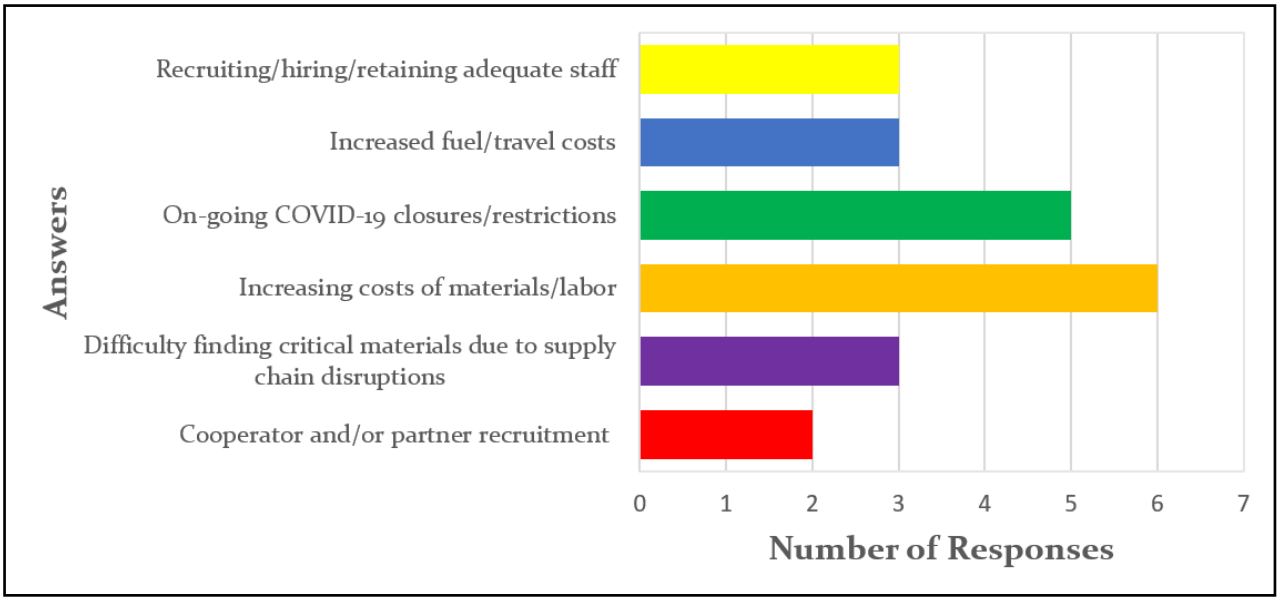
FIGURE 9: MAGNITUDE OF COVID-19 IMPACTS



Question 10: What were the greatest challenges that faced your organization in the past year? Please check up to three options. *Multiple choice – up to three responses.*

Respondents indicated that the increasing cost of materials and labor was the biggest challenge in FFY2022 (6 responses). On-going COVID-19 restrictions also had a significant impact to many of the applicants (5 responses).

FIGURE 10: ORGANIZATIONAL IMPACTS FROM COVID-19



Conclusion

Unfortunately, the participation for the FFY2022 survey was very low, preventing meaningful analysis of the results. The results presented above are for illustrative purposes only. Moving forward, TN-NPS staff will examine ways to increase engagement in the annual questionnaire.

APPENDIX E

NATIONAL WATER QUALITY INITIATIVE (NWQI) STATUS UPDATE

NATIONAL WATER QUALITY INITIATIVE (NWQI) STATUS UPDATE

Introduction

Initiative Overview
The National Water Quality Initiative (NWQI), launched in 2012, is a collaborative effort between the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), the Environmental Protection Agency (EPA), and state agencies to reduce nonpoint source pollution to high-priority watersheds identified in each state. The high-priority watersheds are chosen by NRCS with input from state water quality agencies. The program is designed to focus efforts and funding to provide maximum impacts on the chosen watersheds.

The NWQI requires in-stream water quality monitoring of at least one priority watershed per year. The monitoring assesses water quality and biological conditions related to nutrients, sediments, or livestock-related pathogens. The objective is to determine if any of the parameters have changes throughout the monitoring period, and whether these changes (positive or negative) can be attributed to agriculture-based best management practices (BMPs) that have been installed in the watershed.

In the State of Tennessee, NRCS prioritizes watersheds for nomination that are located in counties included in the USDA StrikeForce Initiative. The USDA StrikeForce Initiative was established in 2010 with the objective of combatting the specific challenges associated with rural poverty, as well as growing rural communities and improving opportunities. In addition, NRCS utilizes EPA's Recovery Potential Screening Tool to further pare down the number of watersheds nominated for NWQI inclusion.

Tennessee Nonpoint Source (TN-NPS) Program Roles Assisting NWQI
The TN-NPS has several minor roles with regards to the NWQI. When asked, TN-NPS provides input on eligible watersheds through knowledge obtained by the Watershed Coordinators, who are in various watersheds every year. TN-NPS also provides funding, in the form of 319 Grant monies, to the Tennessee Department of Environment and Conservation (TDEC) for in-stream water quality monitoring.

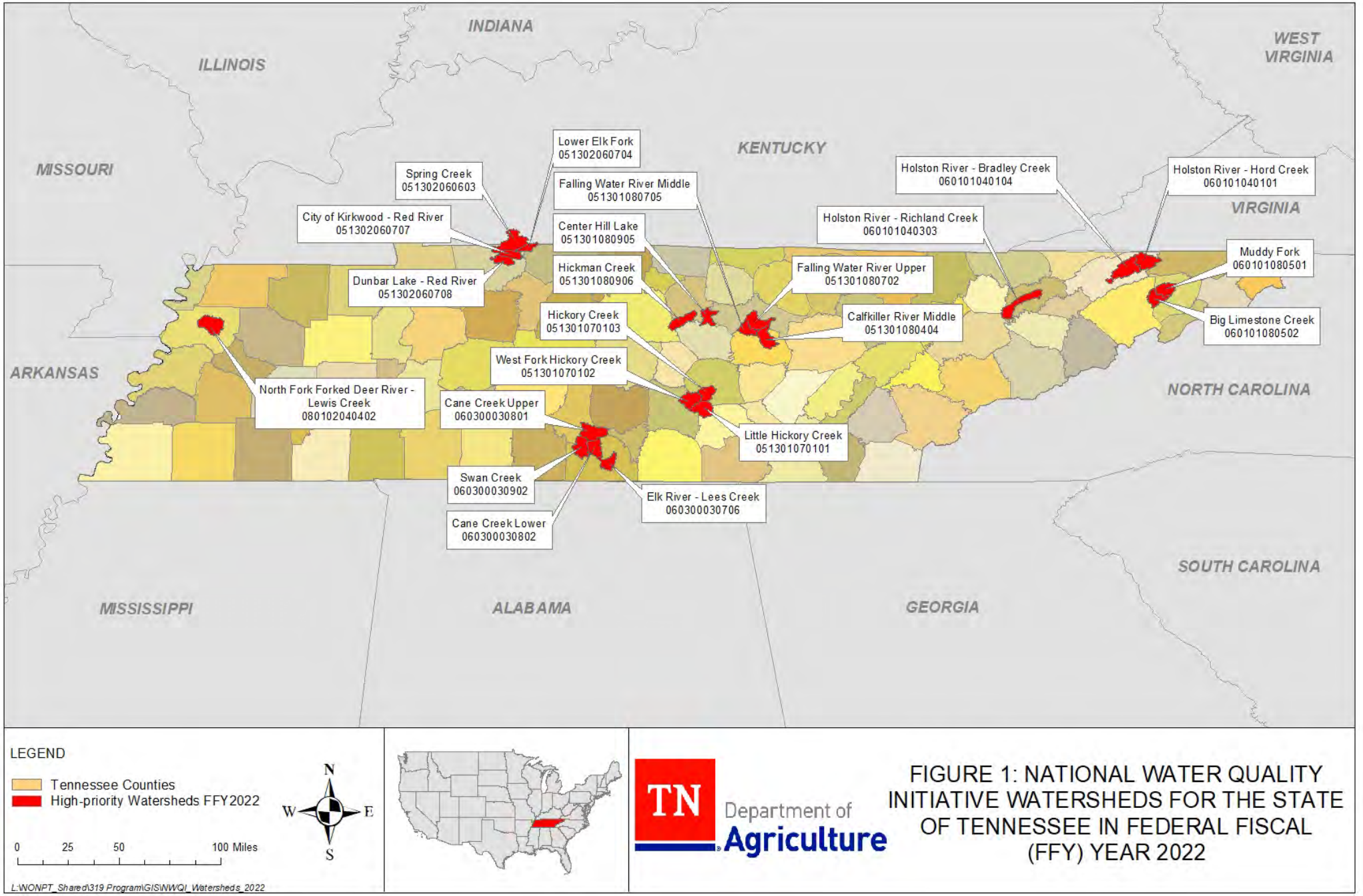
Annual Updates

FFY2020
In FFY2020, USDA and EPA identified 22 active NWQI watersheds. As Tennessee begins a new five-year program management cycle, this update has been reorganized in order to provide a "snapshot" of each watershed including the number of impaired streams, number of practices installed through all the TN-NPS programs, etc. In FFY20, no Section 319 BMPs and 62 Agricultural Resources Conservation Fund (ARCF) practices were installed in NWQI watersheds. Specific information about the number of BMPs in individual watersheds can be found in the following snapshot section.

FFY2021
The watersheds identified as NWQI priority watersheds in FFY2020 were carried forward into FFY2021. In FFY2021, no Section 319 BMPs and 67 ARCF practices were installed in NWQI watersheds. Specific information about the number of BMPs in individual watersheds can be found in the following snapshot section. Note: Each marker may indicate more than one practice at a location.

FFY2022

Similar to the previous two years, the NWQI priority watersheds from FFY2020 and FFY2021 were identified as the priority watersheds for FFY2022 (see Figure 1). No Section 319 practices were installed in NWQI priority watersheds in FFY2022; however, 72 ARCF BMPs, which equate to approximately $158,355 in incentives payments to cooperators were constructed in these watersheds in the past year. Note: Each marker may indicate more than one practice at a location.



TN Department of Agriculture

FIGURE 1: NATIONAL WATER QUALITY INITIATIVE WATERSHEDS FOR THE STATE OF TENNESSEE IN FEDERAL FISCAL (FFY) YEAR 2022

Watershed Snapshots

<u>Little Hickory Creek</u>

Total Acreage: 31,995

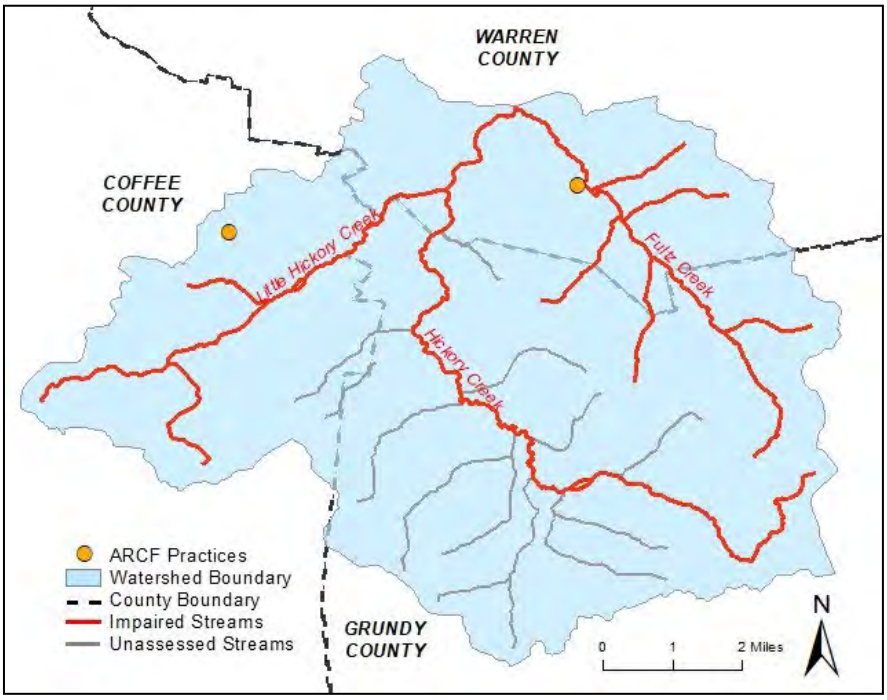
Total River Miles: 97.34

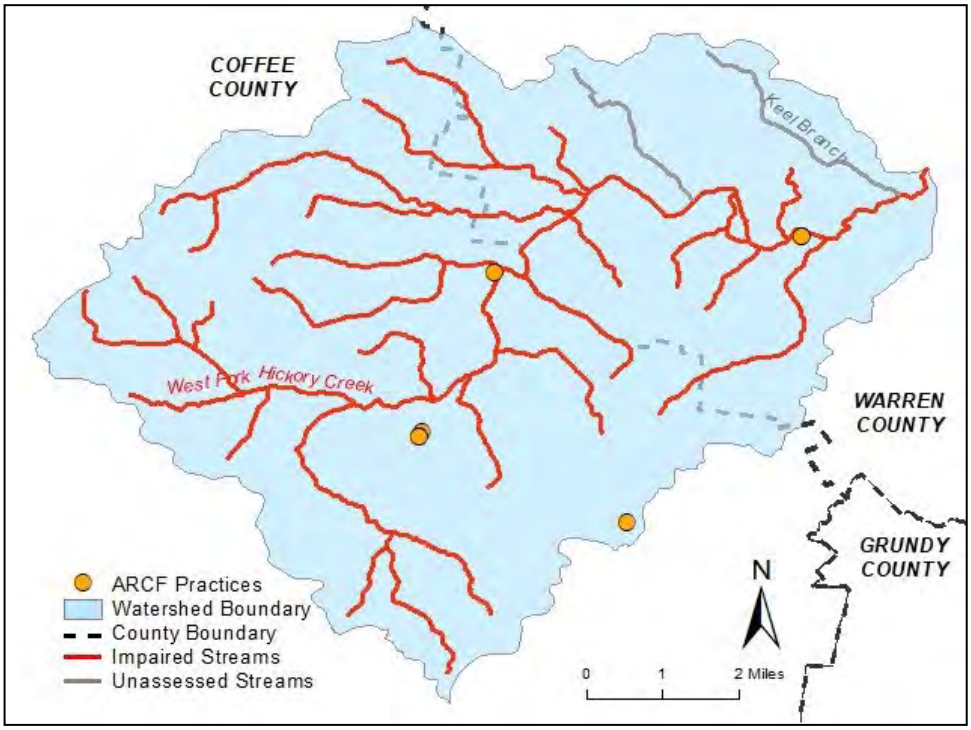
Location: Coffee, Grundy, and Warren Counties

Predominant Land Use: Forest

Impaired Waterbodies: Hickory Creek, Little Hickory Creek, and Fultz Creek

Number of Practices Installed in FFY2022 (All Programs): 2





<u>West Fork Hickory Creek</u>

Total Acreage: 30,854

Total River Miles: 97.85

Location: Coffee and Warren Counties

Predominant Land Use: Cropland and Pasture/Hayland

Impaired Waterbodies: Hickory Creek, West Fork Hickory Creek and Meadow Branch

Number of Practices Installed in FFY2022 (All Programs): 9

Hickory Creek

Total Acreage: 22,437

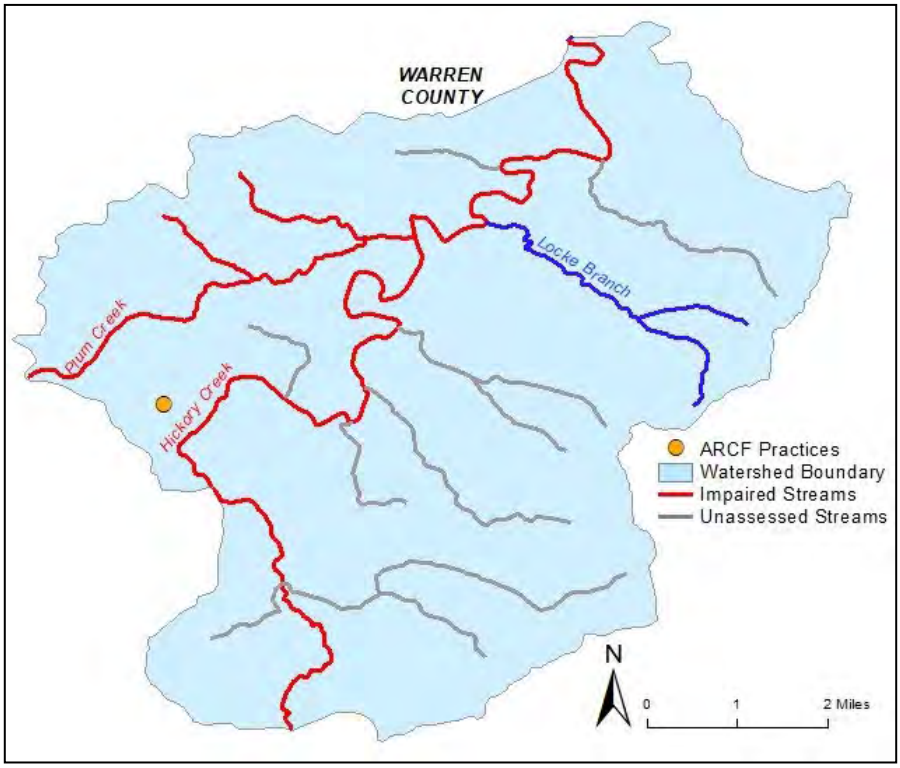
Total River Miles: 104.82

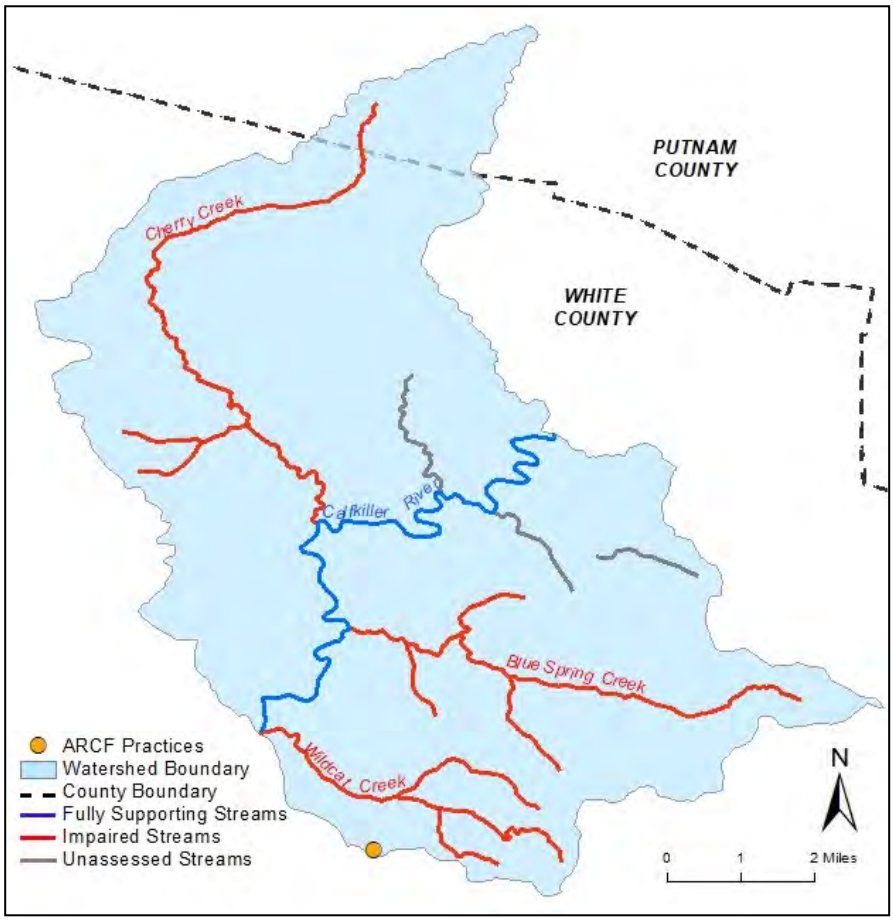
Location: Warren County

Predominant Land Use: Pasture/Hayland

Impaired Waterbodies: Hickory Creek and Plum Creek

Number of Practices Installed in FFY2022 (All Programs): 1





Calfkiller River Middle

Total Acreage: 32,313

Total River Miles: 108.31

Location: Putnam and White Counties

Predominant Land Use: Forest

Impaired Waterbodies: Blue Spring Creek, Cherry Creek, Wildcat Creek, and Calfkiller River

Number of Practices Installed in FFY2022 (All Programs): 1

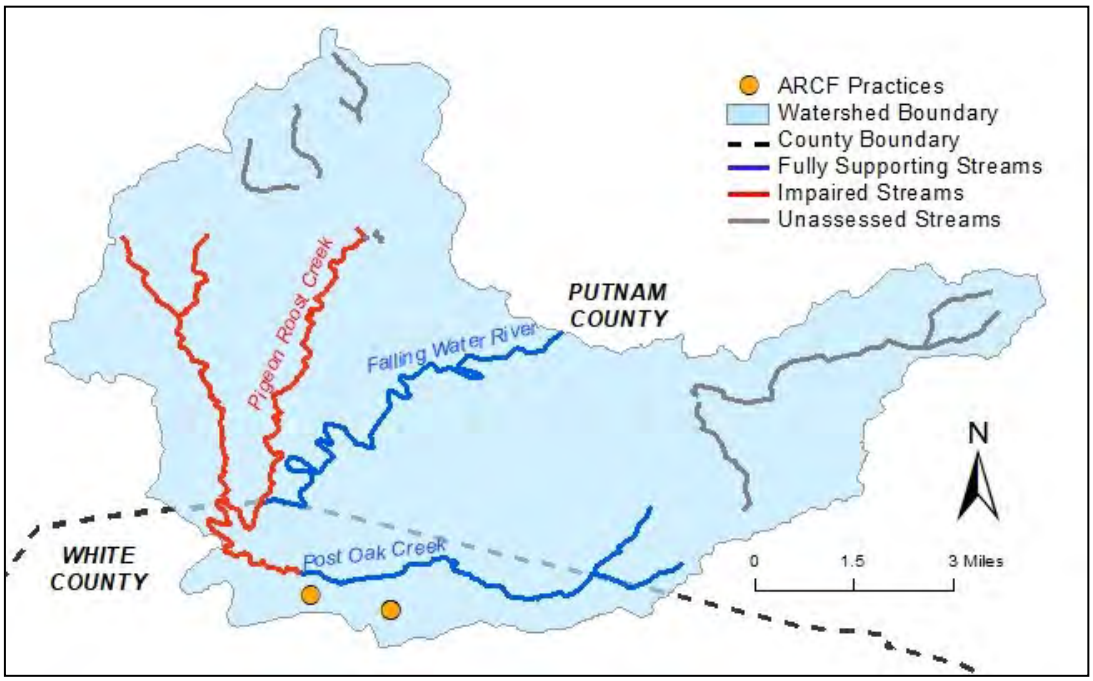
Falling Water River Upper

Total Acreage: 33,816

Total River Miles: 70.12

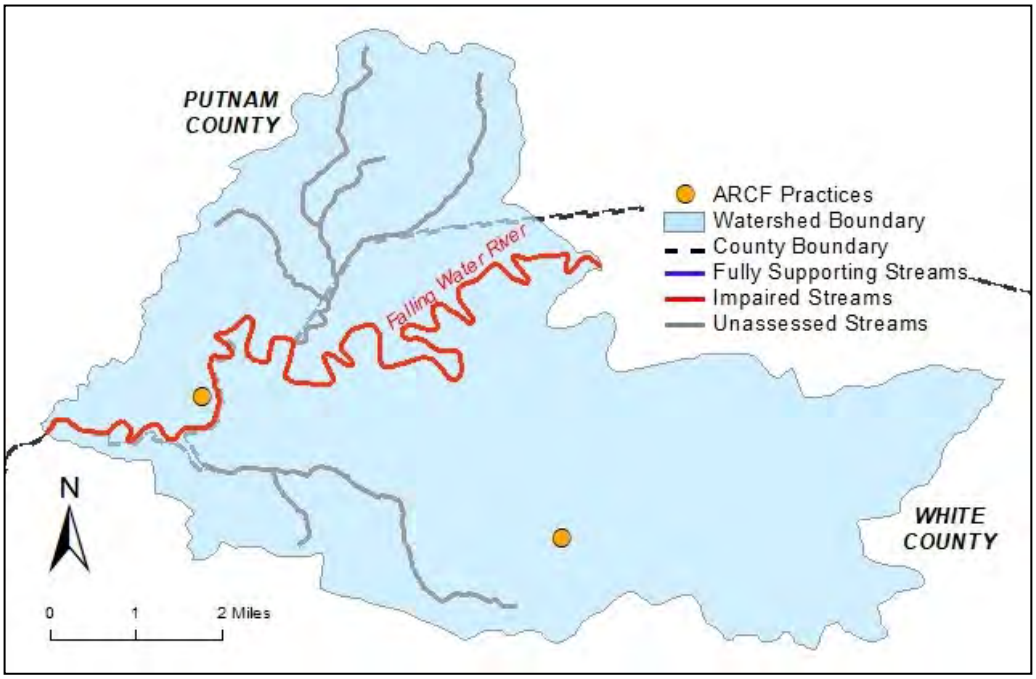
Location: Putnam and White Counties

Predominant Land Use: Mixed (Urban, Forest, Cropland, Pasture/Hayland)



Impaired Waterbodies: Falling Water River, Hudgens Creek, Pigeon River Creek, and Post Oak Creek

Number of Practices Installed in FFY2022 (All Programs): 4



Falling Water River Middle

Total Acreage: 22,747

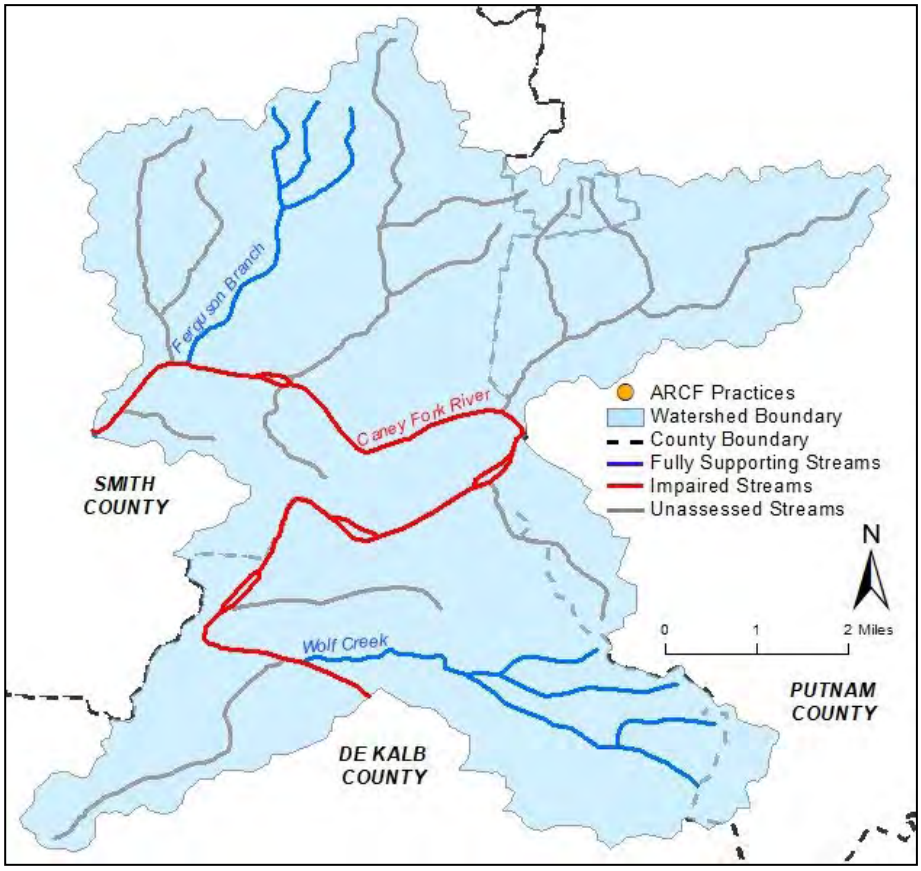
Total River Miles: 24.34

Location: Putnam and White Counties

Predominant Land Use: Cropland and Pasture/Hayland)

Impaired Waterbodies: Falling Water River and Center Hill Reservoir

Number of Practices Installed in FFY2022 (All Programs): 2



Center Hill Lake

Total Acreage: 22,749

Total River Miles: 148.78

Location: DeKalb, Putnam, and Smith Counties

Predominant Land Use: Forest

Impaired Waterbodies: Caney Fork River

Number of Practices Installed in FFY2022 (All Programs): 0

Hickman Creek

Total Acreage: 28,638

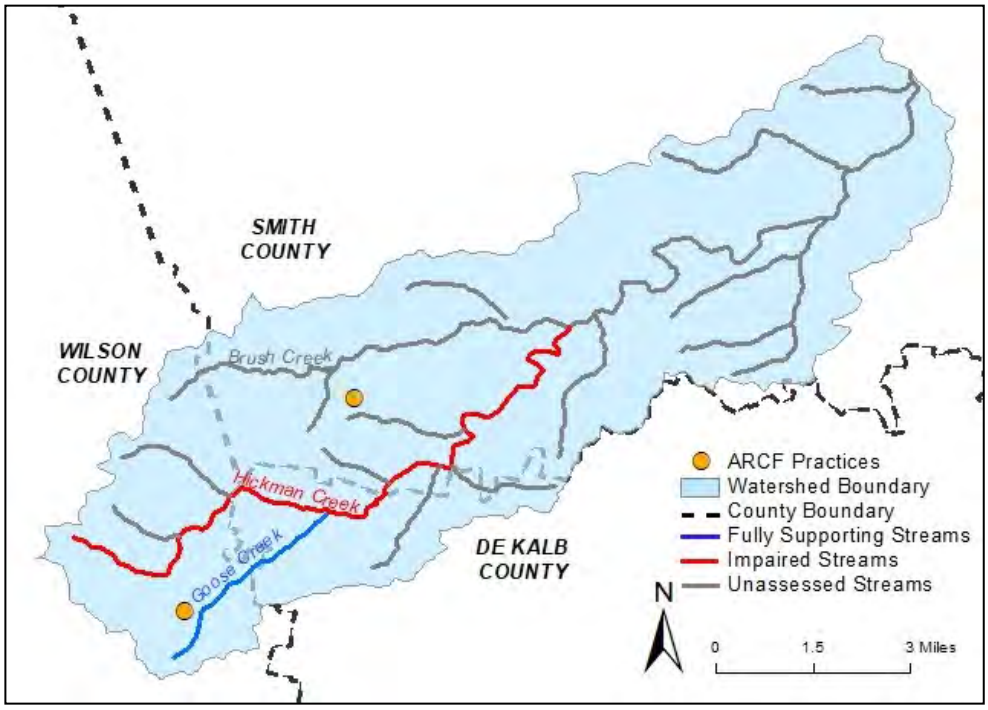
Total River Miles: 55.03

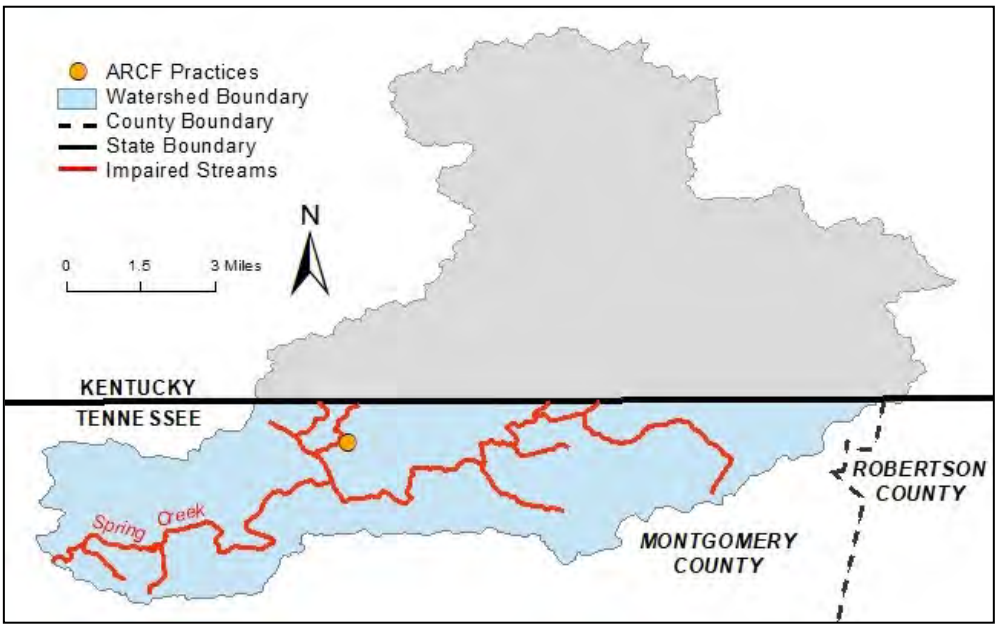
Location: DeKalb, Smith, and Wilson Counties

Predominant Land Use: Pasture/Hayland

Impaired Waterbodies: Hickman Creek

Number of Practices Installed in FFY2022 (All Programs): 2





Spring Creek

Total Acreage: 51,466

Total River Miles: 27.76 (TN portion only)

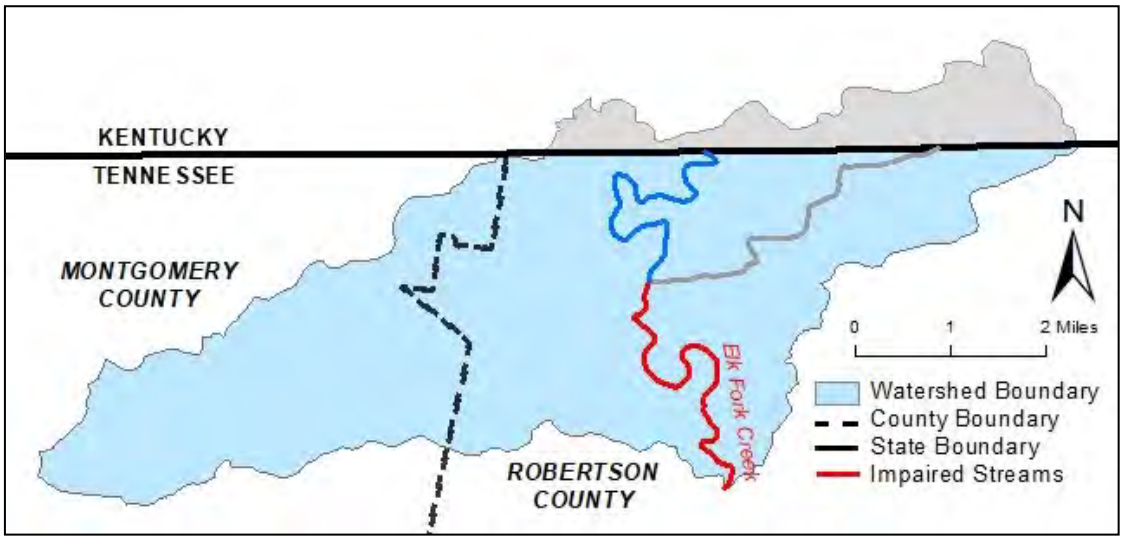
Location: Montgomery County, TN and Todd County, KY

Predominant Land Use: Cropland

Impaired Waterbodies: Spring Creek and Unnamed Tributary to Spring Creek

Number of Practices Installed in FFY2022 (All Programs): 1

Lower Elk Fork



Total Acreage: 12,242

Total River Miles: 11.9 (TN portion)

Location: Montgomery County, TN, Logan and Todd Counties, KY

Predominant Land Use: Cropland

Impaired Waterbodies: Elk Fork Creek

Number of Practices Installed in FFY2022 (All Programs): 0

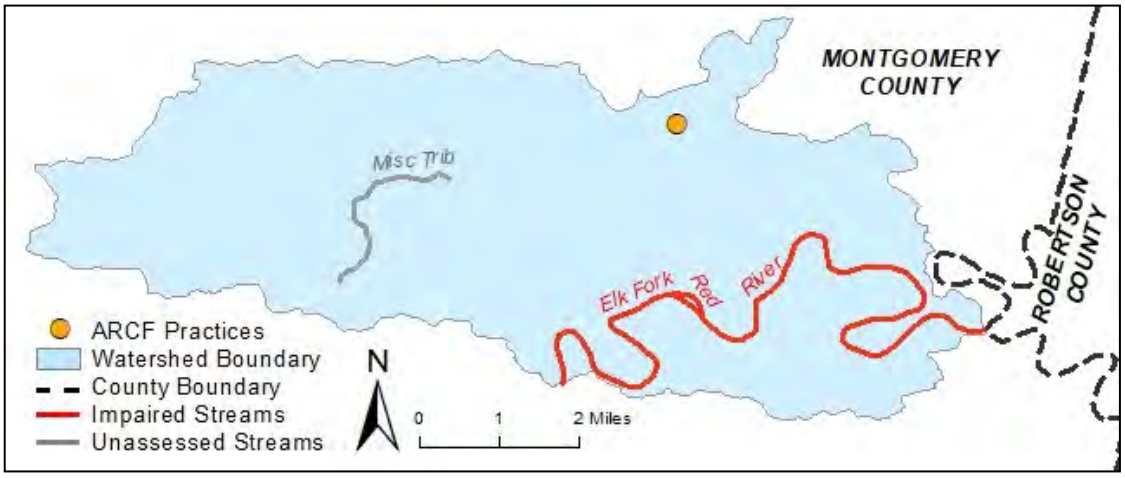
City of Kirkwood – Red River

Total Acreage: 18,196

Total River Miles: 31.4

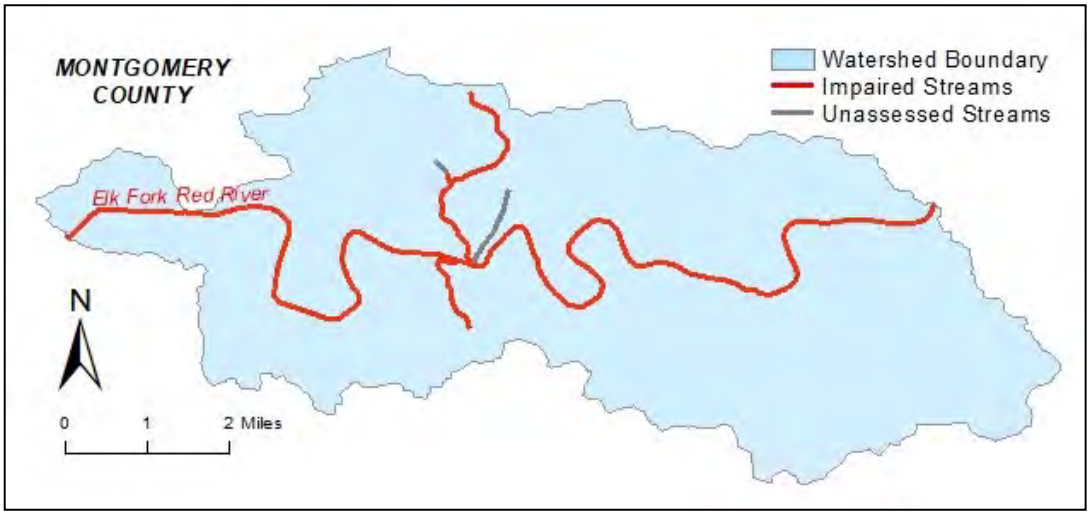
Location: Montgomery County

Predominant Land Use: Cropland and Pastue/Hayland



Impaired Waterbodies: Red River (Elk Fork)

Number of Practices Installed in FFY2022 (All Programs): 1



Dunbar Lake – Red River

Total Acreage: 18,154

Total River Miles: 52.6

Location: Montgomery County

Predominant Land Use: Urban and Pasture/Hayland

Impaired Waterbodies: Red River (Elk Fork) and Dunbar Cave Creek

Number of Practices Installed in FFY2022 (All Programs): 0

Holston River – Hord Creek

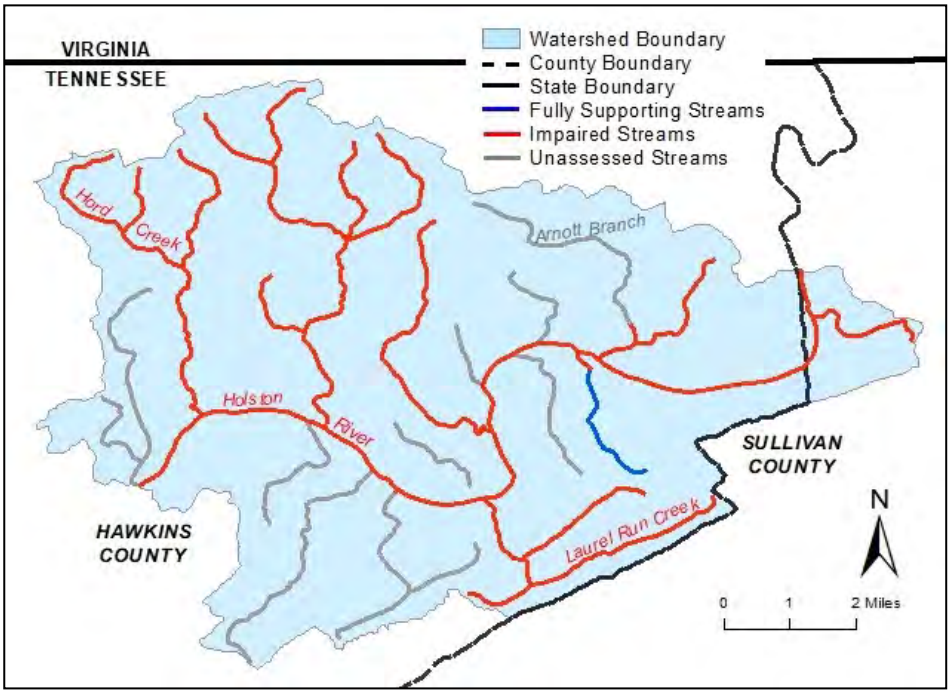
Total Acreage: 34,826

Total River Miles: 112.37

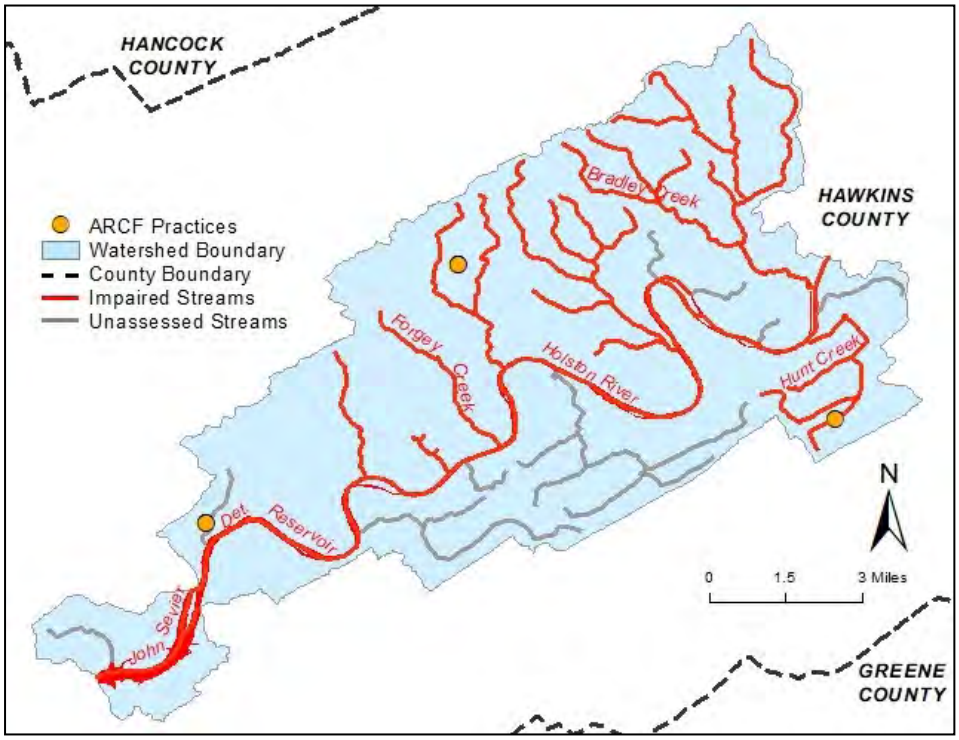
Location: Hawkins and Sullivan Counties

Predominant Land Use: Forest and Pasture/Hayland

Impaired Waterbodies: Alexander Creek, Arnott Branch, Slate Branch, Hord Creek, North Fork Holston River, South Fork Holston River, Holston River, Laurel Run Creek, and Smith Creek



Number of Practices Installed in FFY2022 (All Programs): 0



Holston River – Bradley Creek

Total Acreage: 47,447

Total River Miles: 219.68

Location: Hawkins County

Predominant Land Use: Forest and Pasture/Hayland

Impaired Waterbodies: Renfroe Creek, John Sevier Detention Reservoir, Holston River, Hunt Creek, Forgey Creek, Sinking Creek, Washboard Creek, Surgoinsville Creek, Cherokee Reservoir, Bradley Creek, and Stoney Point Creek

Number of Practices Installed in FFY2022 (All Programs): 18

Holston River – Richland Creek

Total Acreage: 42,402

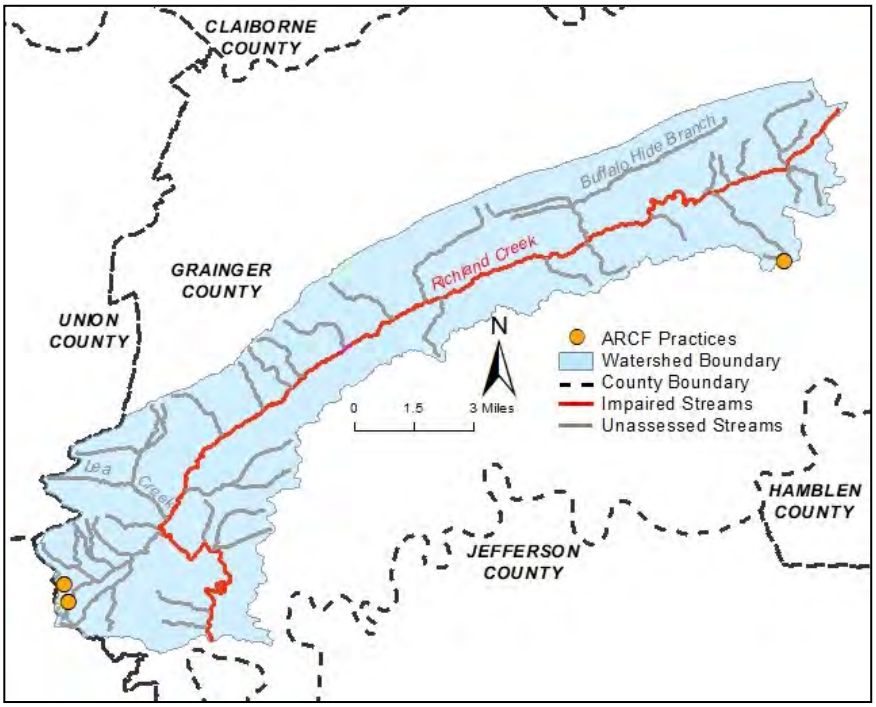
Total River Miles: 101.6

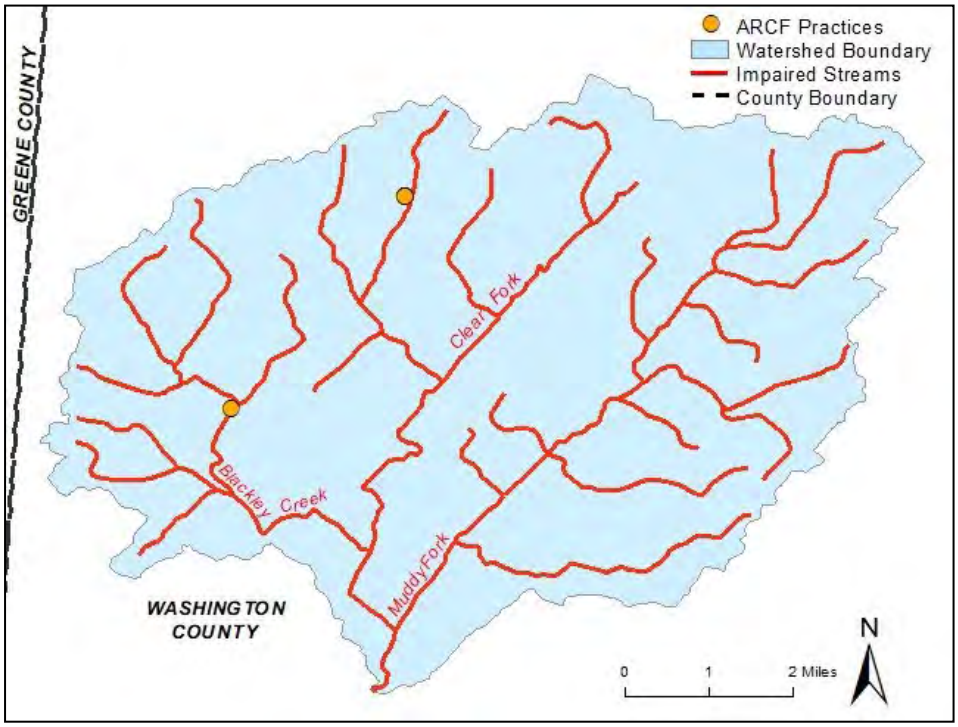
Location: Grainger County

Predominant Land Use: Forest

Impaired Waterbodies: Richland Creek

Number of Practices Installed in FFY2022 (All Programs): 16





Muddy Fork

Total Acreage: 25,333

Total River Miles: 70.9

Location: Washington County

Predominant Land Use: Pasture/Hayland

Impaired Waterbodies: Big Limestone Creek, Blackley Creek, Clear Fork, Leesburg Branch, Muddy Fork, and Unnamed Tributary to Clear Fork

Number of Practices Installed in FFY2022 (All Programs): 4

Big Limestone Creek

Total Acreage: 25,017

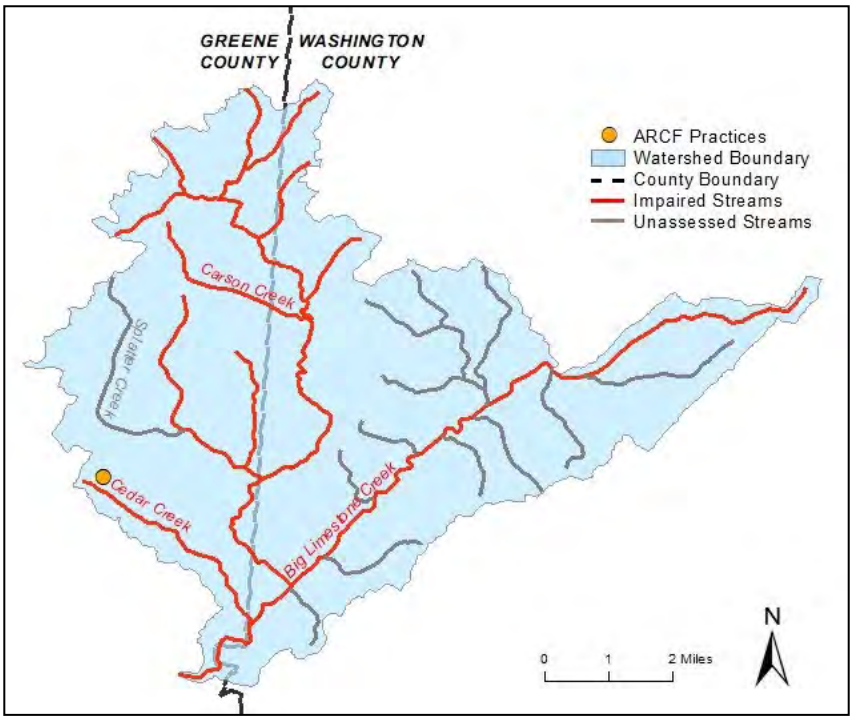
Total River Miles: 63.8

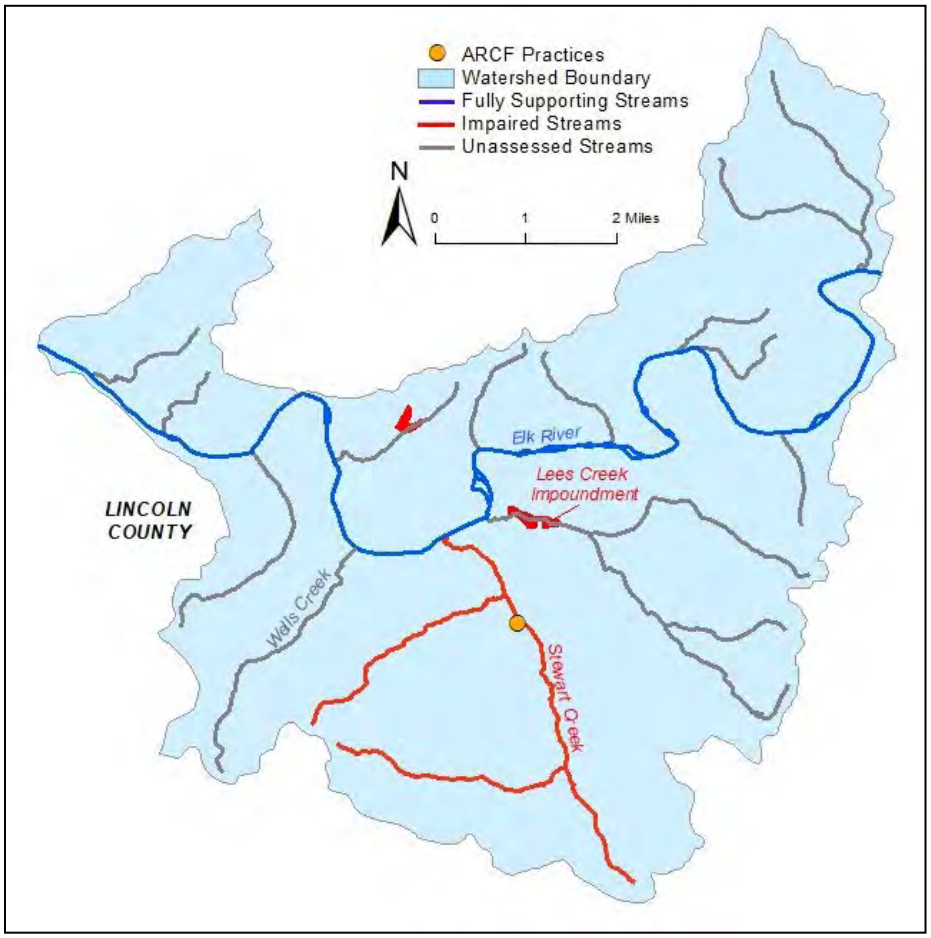
Location: Greene and Washington Counties

Predominant Land Use: Pasture/Hayland

Impaired Waterbodies: Big Limestone Creek, Carson Creek, Cedar Creek, and Jockey Creek

Number of Practices Installed in FFY2022 (All Programs): 3





Elk River – Lees Creek

Total Acreage: 23,137

Total River Miles: 230.8

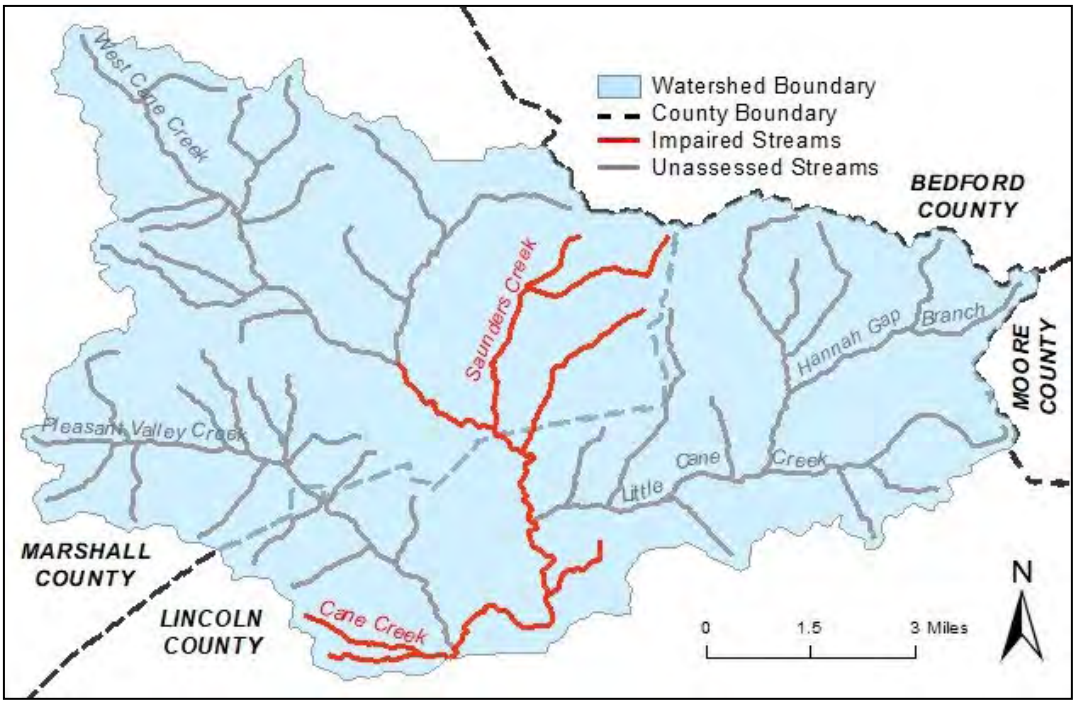
Location: Lincoln County

Predominant Land Use: Forest and Pasture/Hayland

Impaired Waterbodies: Stewart Creek, Misc. Trib., and Lees Creek Impoundment

Number of Practices Installed in FFY2022 (All Programs): 1

Cane Creek Upper



Total Acreage: 41,268

Total River Miles: 130.5

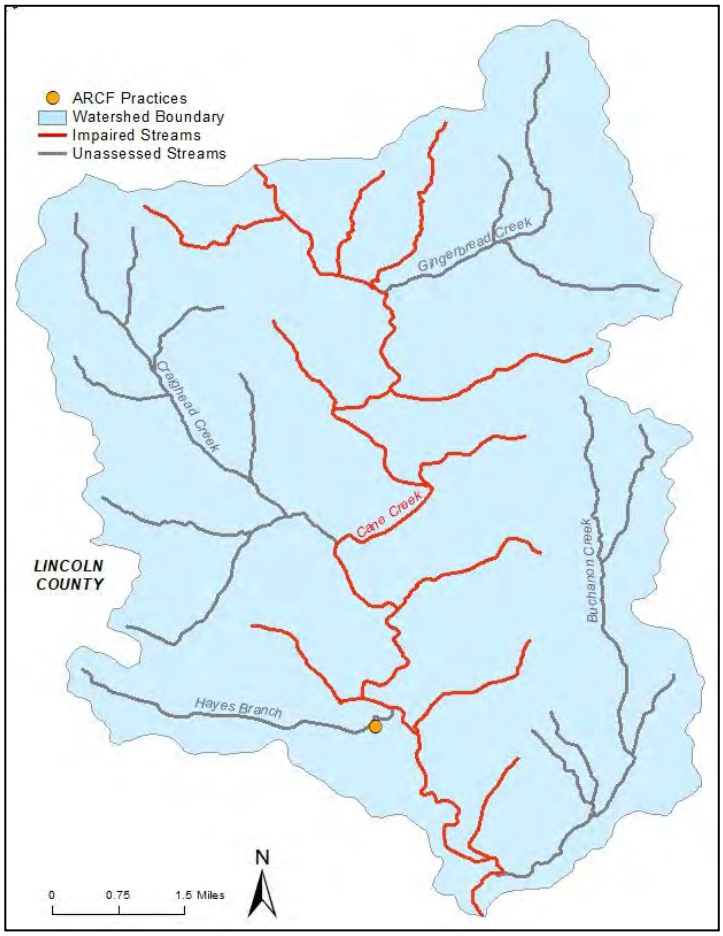
Location: Lincoln and Marshall Counties

Predominant Land Use: Forest and Pasture / Hayland

Impaired Waterbodies: Cane Creek and Saunders Creek

Number of Practices Installed in FFY2022 (All Programs): 0

Cane Creek Lower



Total Acreage: 26,385

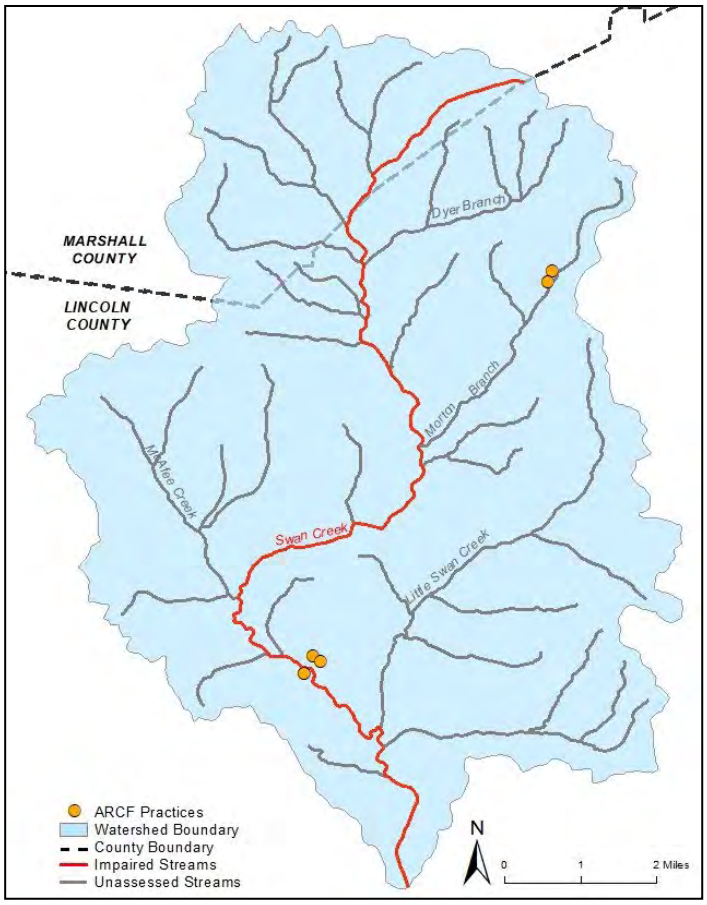
Total River Miles: 80.2

Location: Lincoln County

Predominant Land Use: Pasture/Hayland

Impaired Waterbodies: Cane Creek

Number of Practices Installed in FFY2022 (All Programs): 1



Swan Creek

Total Acreage: 32,140

Total River Miles: 81.7

Location: Lincoln and Marshall Counties

Predominant Land Use: Forest and Pasture/Hayland

Impaired Waterbodies: Swan Creek

Number of Practices Installed in FFY2022 (All Programs): 6

North Fork Forked Deer River – Lewis Creek

Total Acreage: 42,601

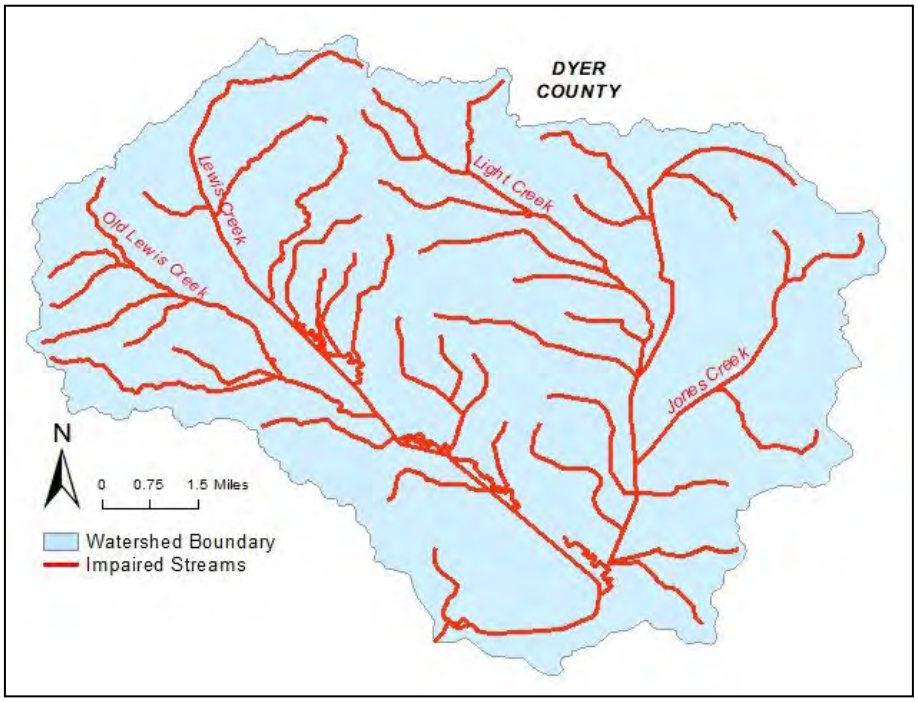
Total River Miles: 115.96

Location: Dyer County

Predominant Land Use: Cropland

Impaired Waterbodies: Jones Creek, Old Lewis Creek, Lewis Creek, and Light Creek

Number of Practices Installed in FFY2022 (All Programs): 0



Moving Forward

For the third year of the 2020 – 2024 Management Program planning period, no Section 319 BMPs were installed in NWQI watersheds. Moving forward, it would be appropriate for TN-NPS staff to examine ways to incentivize work performed in priority watersheds. During FFY2022, the TN-NPS program modified the reimbursement rates for specific practices and in economically disadvantaged Tennessee counties. One possible solution to the lower engagement in NWQI watersheds would be to allow for higher reimbursement rates in priority areas.