



RI

RESOURCE INSTITUTE

Restoring America's Streams, Rivers and Wetlands

2022 ANNUAL REPORT

BALTIMORE IS CALLING IN 2023



Resource Institute hosts the second National Stream Restoration Conference

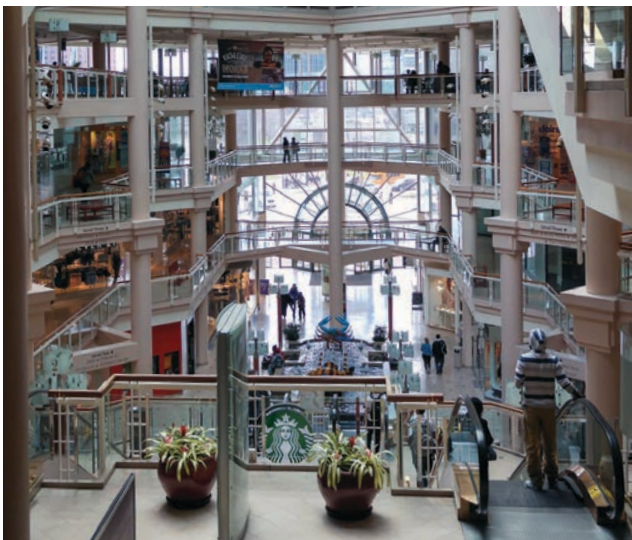
August 21 - 23, 2023

Renaissance Baltimore Harborplace Hotel
Baltimore, Maryland

STREAM RESTORATION 2023: FINDING COMMON GROUND

- Over 100 presentations from industry experts
- Evolve your perspective beyond the channel
- Over 40 vendors and exhibitors with the latest technology and equipment
- Enjoy Charm City – a city that honors history and has an eye to the future
- Delve into diverse neighborhoods and rich cultural sites
- Explore the Inner Harbor – don't miss its exciting lineup of family-friendly activities and entertainment

[MORE INFORMATION AT RESTORESTREAMS.ORG](http://RESTORESTREAMS.ORG)



Message from the Chair

BY KENNON (KEN) WHITE

With a grateful heart, I am delighted to share our organization's annual report and highlight some of our many accomplishments. We continue to embrace the mission of our environmental work in restoring America's streams, rivers, and wetlands. Over the past year, our team has worked tirelessly to improve and preserve our natural resources. Through our efforts, we have restored numerous waterways and wetlands, making them more resilient and creating healthy habitats for wildlife.

Resource Institute improves the environment and ensures that our communities have access to clean water and healthy ecosystems. We recognize that the health of our natural resources is essential to our overall well-being and that of future generations. This past year, we were finally able to host the first National Stream Restoration Conference in Nashville, Tennessee. We had over 700 attendees from 37 states and 3 Canadian Provinces. Our education commitment was demonstrated by over 140 presenters, including some of our leading universities and restoration practitioners.

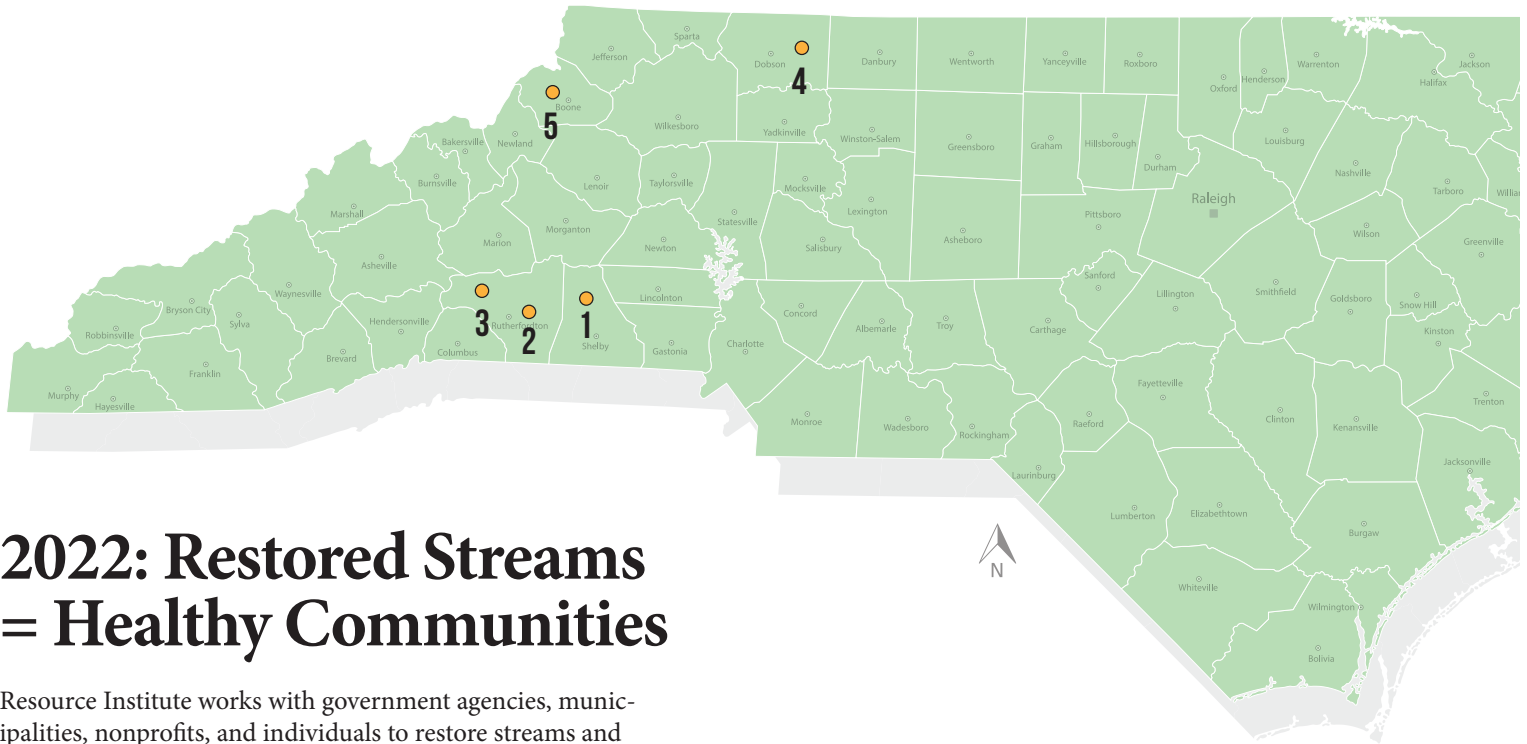
Despite the challenges posed by the pandemic, we have continued our work, adapting to innovative technologies and approaches to ensure that we can continue to make a positive impact. Our efforts have been successful, thanks to the dedication of our staff and talented partners. They have worked tirelessly to design and implement restoration projects, often in challenging conditions, and with remarkable success.

Looking ahead, we remain committed to restoring and preserving our natural resources. We will continue to leverage our strengths and resources to drive meaningful change and make a difference in the world. In a world with so much water coverage, I remind you that less than 3% is potable. We must continue to "Fight the Good Fight."

I appreciate your support, and we look forward to continuing our work together.

“Clean water is not just a necessity, but a basic human right. We must ensure that every community has access to this precious resource to create healthy and thriving societies.”

~ MATT DAMON



2022: Restored Streams = Healthy Communities

Resource Institute works with government agencies, municipalities, nonprofits, and individuals to restore streams and wetlands to improve habitat, stream function, and water quality. RI completed five multi-year projects in 2022! These projects restored over 12,020 feet of stream. Throughout history and into the future, humankind has depended on rivers for food, shelter, transportation, and energy.

Recently, we have become less connected to the environment and our rivers. Rivers in urban and rural settings have become degraded.

Resource Institute’s restoration efforts produce a plethora of benefits for local communities. After restoration, communities become more resilient to floods and significant storm events. The rivers transport sediment efficiently and support diverse flora and fauna.

Stream Restoration also improves the local economy. Areas with stream restoration projects have access to increased recreation opportunities that support community health. These areas also attract visitors who contribute monetarily to the local economy. Many landowners will see increased property values.

Lastly, a vital part of each stream restoration project is to plant native trees, shrubs, and grasses. Plantings are essential to creating habitat. Native plants reduce soil erosion and filter pollutants from groundwater. These plants contribute to carbon sequestration, further contributing to healthy communities.

2022 COMPLETED PROJECTS

Stream Restoration Projects

	County – Stream Name	Feet
1	Cleveland – Pounding Mill/Knobs Creeks	3,175
2	Rutherford – UT to Second Broad	2,605
3	Rutherford – Cleghorn Creek	1,540
4	Surry – Hodges Creek	2,700
5	Watauga – Cove Creek	2,000
	TOTAL	12,020



1st National Stream Restoration Conference

Gaylord Opryland Resort
Nashville, TN
August 1, 2 & 3, 2022

SHARING VISIONS FOR THE FUTURE

- Presentations: 140 (Over 200 Presenters)
- Sponsors/Exhibitors: 70 (from 17 States)
- Participants: ~ 700
From: 37 States + District of Columbia
3 Canadian Provinces and the United Kingdom





This photo is looking upstream of Pound Mill Creek post-construction and prior to riparian buffer planting.



Prior to project implementation, Pounding Mill Creek and Knob Creek streambanks were steep and unstable.

Pounding Mill Creek and Knob Creek Stream Restoration Project

Broad River Watershed
Cleveland County, Lawndale, NC

Status: Complete
Stream Restored: ~3,175 feet

Planting Stats: 1,350 Trees & 6,300 Live stakes
Carbon Sequestration over 10 years = 64.7 tons
Soil Erosion Reduction = 440 tons

PARTNERS:

- USDA-NRCS
- North Carolina Division of Water Resources
- Cleveland SWCD
- Jennings Environmental, PLLC
- Belflower Farm, LLC

NATURAL RESOURCE CONCERN/ISSUES:

Pounding Mill and Knob Creeks are streams that suffered from critical erosion and incised streambanks.

Streambanks on Pounding Mill and Knob Creeks were steep and severely eroded and lacked an adequate riparian buffer.

Original Stream Type = G4c

PROJECT OBJECTIVES:

Restored Stream Type = B4c

Improve water quality by reducing sediment loading of the stream and reduce streambank erosion.

Stabilize the stream reach to prevent further aggradation or degradation by providing an improved dimension, pattern and/or profile that will improve sediment transport, and manage surface waters and groundwater levels in floodplains, riparian areas, and wetlands.

Construct rock and woody structures to provide instream habitat, stabilize streambanks and the channel bed.

Establish a riparian buffer, remove invasive plant species and reestablish native plants, trees, and shrub.



This photo looks upstream of UT to Second Broad post-construction and prior to riparian buffer planting.



Prior to project implementation, streambanks along UT to Second Broad were steep and unstable.

UT to Second Broad Stream Restoration Project

Broad River Watershed
Rutherford County, Forest City, NC

Status: Complete
Stream Restored: ~2,605 feet

Planting Stats: 5,280 Live Stakes & 870 Trees
Carbon Sequestration over 10 years = 47.5 tons
Soil Erosion Reduction = 270 tons

PARTNERS:

- USDA-NRCS
- North Carolina Division of Water Resources
- Rutherford SWCD
- Jennings Environmental, PLLC
- Bellflower Farm, LLC

NATURAL RESOURCE CONCERN/ISSUES:

Streambanks on UT Second Broad River were steep and severely eroded and lacked a riparian buffer.

Original Stream Type = G4c

PROJECT OBJECTIVES:

Restored Stream Type = B4c

Improve water quality by reducing sediment, nutrient, organic, and inorganic loading of the stream and reduce streambank erosion.

Stabilize the stream reach to prevent further aggradation or degradation by providing an improved dimension, pattern and/or profile that will improve sediment transport, and manage surface waters and groundwater levels in floodplains, riparian areas, and wetlands.

Construct rock and woody structures to provide instream habitat, stabilize streambanks and the channel bed.

Provide an alternate watering source for livestock that includes pump and livestock pipeline to convey water to watering facilities with surrounding heavy use area protection.

Install fencing to restrict livestock access to the stream corridor to protect streambanks and streambank vegetation.

Establish a riparian buffer and reestablish native plants, trees, and shrub.



This photo is looking upstream of Cleghorn Creek post-construction and before riparian buffer planting.



Prior to project implementation, Cleghorn Creek streambanks were steep and unstable.

Cleghorn Creek Stream Restoration Project

Broad River Watershed
Rutherford County, Rutherfordton, NC

Status: Complete
Stream Restored: ~1,540 feet
Planting Stats: 3,100 Live Stake & 1,100 Trees
Carbon Sequestration over 10 years = 42.9 tons
Soil Erosion Reduction = 308 tons

PARTNERS:

- USDA-NRCS
- North Carolina Division of Water Resources
- Rutherford SWCD
- Wildlands Engineering
- Suttles Grading

NATURAL RESOURCE CONCERN/ISSUES:

Streambanks on Cleghorn Creek were steep and severely eroded and lacked a riparian buffer.

Original Stream Type = G5

PROJECT OBJECTIVES:

Restored Stream Type = B4c

Improve water quality by reducing sediment loading of the stream and reduce streambank erosion.

Stabilize the stream reach to prevent further aggradation or degradation by providing an improved dimension, pattern and/or profile that will improve sediment transport, and manage surface waters and groundwater levels in floodplains, riparian areas, and wetlands.

Construct rock and woody structures to provide instream habitat, stabilize streambanks and the channel bed.

Establish a riparian buffer and reestablish native plants, trees, and shrub.



Hodges Creek post-construction showing in-stream structures and prior to riparian buffer planting.



Before restoration, Hodges Creek was unstable and severely eroding.

Hodges Creek Stream Restoration Project

Fisher River Watershed
 Surry County, Dobson, NC

Status: Complete
 Stream Restored: ~ 2,700 feet

Planting Stats: 1,300 Trees & 7,200 Live Stakes
 Carbon Sequestration over 10 years = 67.7 tons
 Soil Erosion Reduction = 397.1 tons

PARTNERS:

USDA-NRCS
 North Carolina Division of Water Resources
 Surry SWCD
 Ecosystem Planning & Restoration
 North State Environmental

NATURAL RESOURCE CONCERN/ISSUES:

Streambanks on Hodges Creek were steep and severely eroded and lacked a riparian buffer.

Original Stream Type = F

PROJECT OBJECTIVES:

Restored Stream Type = Bc

Improve water quality by reducing sediment, nutrient, organic, and inorganic loading of the stream and reduce streambank erosion.

Stabilize the stream reach to prevent further aggradation or degradation by providing an improved dimension, pattern and/or profile that will improve sediment transport, and manage surface waters and groundwater levels in floodplains, riparian areas, and wetlands.

Construct rock and woody structures to provide instream habitat, stabilize streambanks and the channel bed.

Provide an alternate watering source for livestock that includes pump and livestock pipeline to convey water to watering facilities with surrounding heavy-use area protection.

Install fencing to restrict livestock access to the stream corridor to protect streambanks and streambank vegetation.

Establish a riparian buffer and reestablish native plants, trees, and shrub.



Cove Creek post-construction and prior to riparian buffer planting.



Prior to project implementation, Cove Creek streambanks were steep and unstable.

Cove Creek Stream Restoration Project

Watauga River Watershed
Watauga County, Sugar Grove, NC

Status: Complete
Stream Restored: ~ 2,000 feet

Planting Stats: 4,000 Live Stakes & 800 Trees
Carbon Sequestration over 10 years = 39.6 tons

PARTNERS:

- USDA-NRCS
- North Carolina Land & Water Fund
- Watauga SWCD
- Brushy Fork Environmental Consulting

NATURAL RESOURCE CONCERN/ISSUES

Streambanks on Cove Creek were steep and severely eroded and lacked a riparian buffer

Original Stream = Type C4

PROJECT OBJECTIVES:

Restored Stream Type = C4

Improve water quality by reducing sediment, nutrient, organic, and inorganic loading of the stream and reduce streambank erosion.

Stabilize the stream reach to prevent further aggradation or degradation by providing an improved dimension, pattern and/or profile that will improve sediment transport, and manage surface waters and groundwater levels in floodplains, riparian areas, and wetlands.

Construct rock and woody structures to provide instream habitat, stabilize streambanks and the channel bed.

Establish a riparian buffer and reestablish native plants, trees, and shrub.



A completed EWP project along a reach of stream in Forsyth County, North Carolina. This stream was impacted by Hurricanes Florence and Michael in 2018.



A reach of stream in Surry County, NC damaged by Hurricanes Florence and Michael in 2018. This photo was taken prior to the EWP recovery project.



Resource Institute implemented a stream restoration project as part of an EWP project in Surry County, North Carolina.

EWP Projects (NRCS' Emergency Watershed Protection Program)

USDA NRCS administers the Emergency Watershed Protection Program (EWPP), which responds to emergencies created by natural disasters. It is not necessary for a national emergency to be declared for an area to be eligible for assistance.

The EWP Program is a recovery effort aimed at relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural disasters.

PARTNERS:

Since 2020, Resource Institute has assisted 3 counties through the EWP program.

- Hoke County
- Forsyth County
- Surry County

NATURAL RESOURCE CONCERN/ISSUES

These counties had streams and communities that were damaged by significant storm events such as Hurricane Florence.

RI assisted these counties with debris & sediment removal (unclogging waterways) and stabilizing streambanks to minimize erosion to a "pre-storm" condition.

In the end, all EWP projects reduce threats to life and property, and are economically, environmentally, and socially defensible and technically sound.



Sediment removal on a stream damaged by a significant storm event in Hoke County, North Carolina



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A Nonprofit Organization