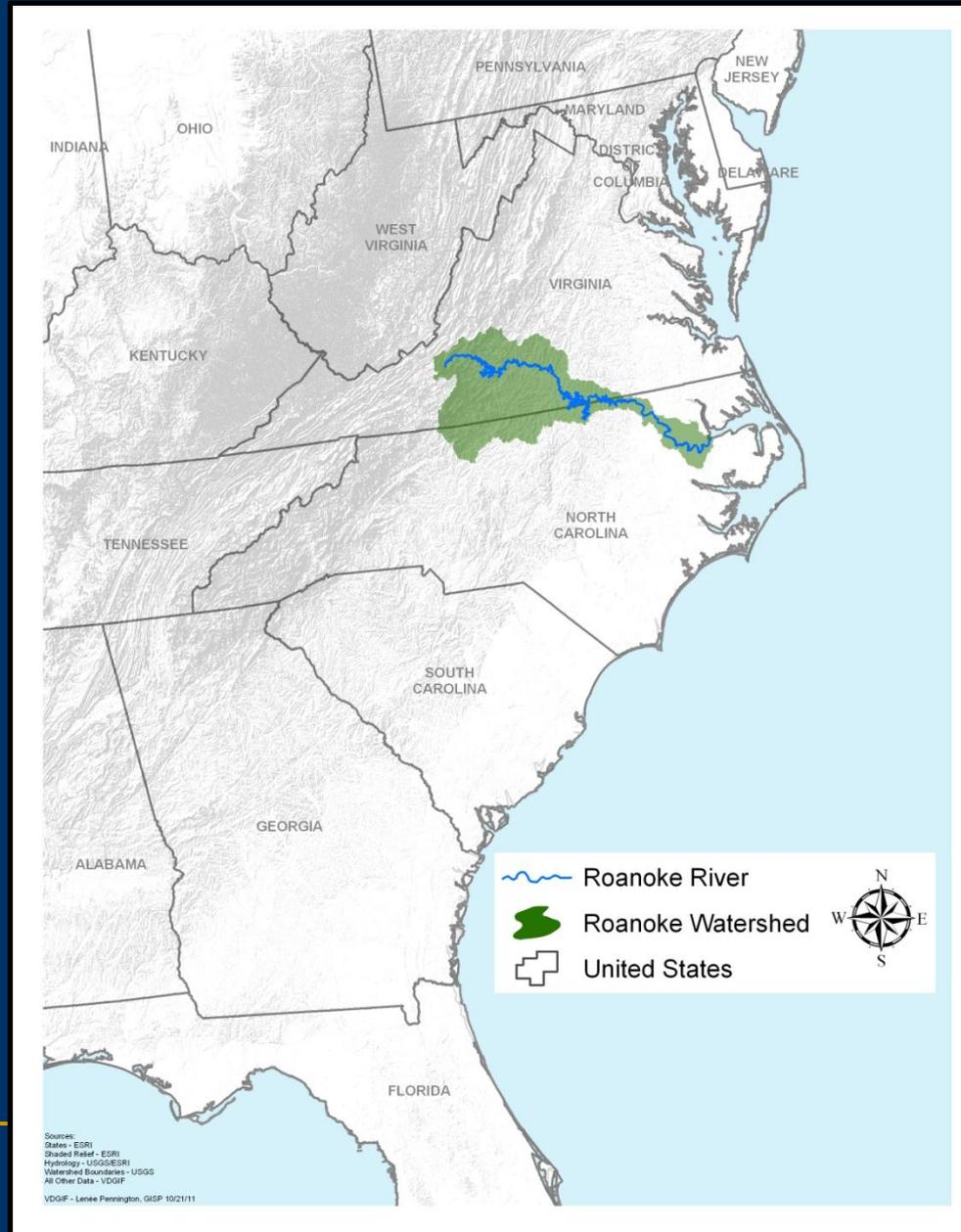

North Fork Roanoke River voluntary watershed restoration through grant funded public-private partnerships

Justin Laughlin

November 16, 2011

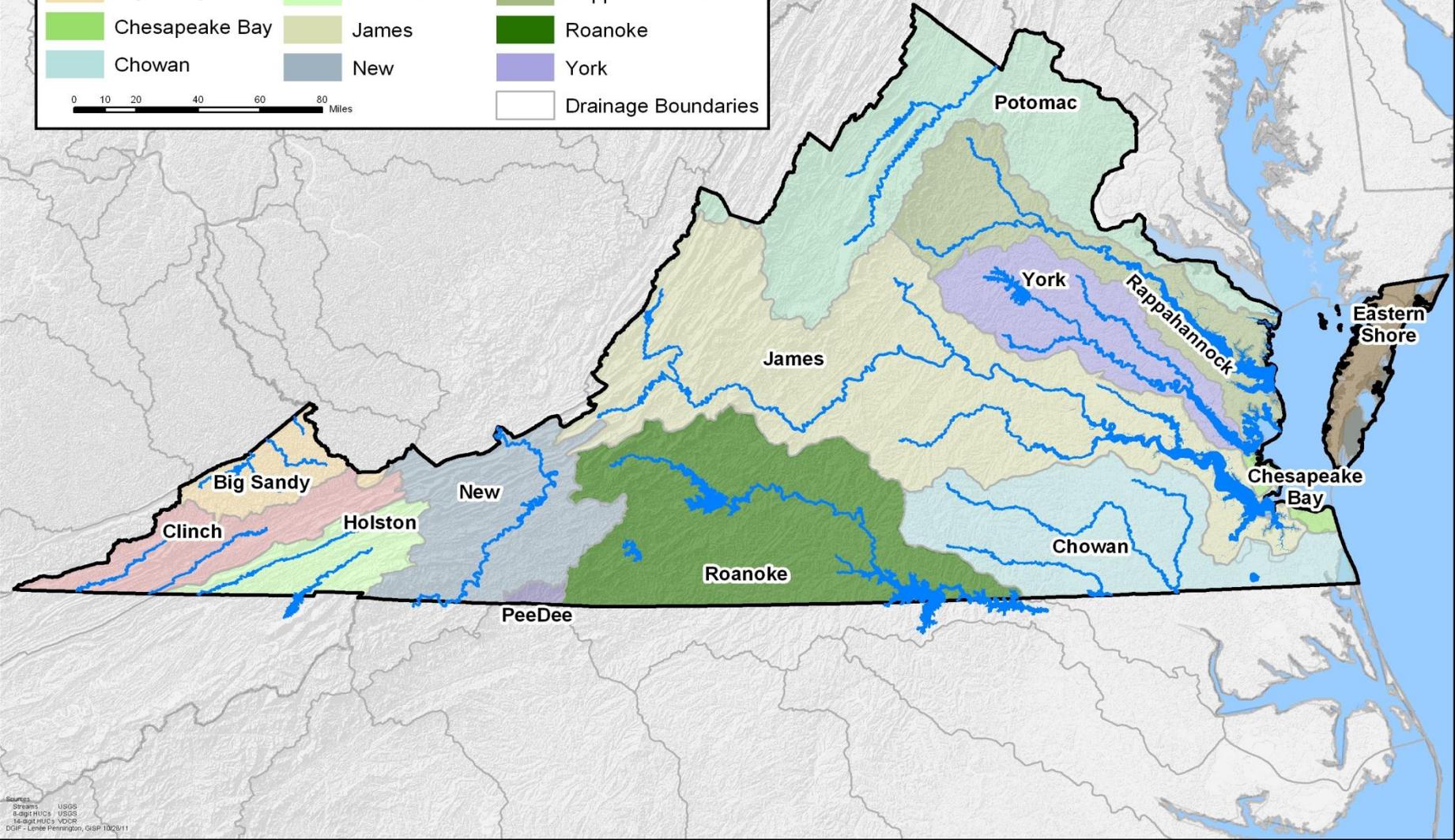


Roanoke River Watershed





Virginia's Watersheds



Sources: Streams - USGS; Drainages - USGS; Big Sandy - USGS; Chesapeake Bay - USGS; 14-digit FIPS - VDOT; DGI - Lennie Pennington, GISP 10/26/11

Landowner Incentive Program (LIP)

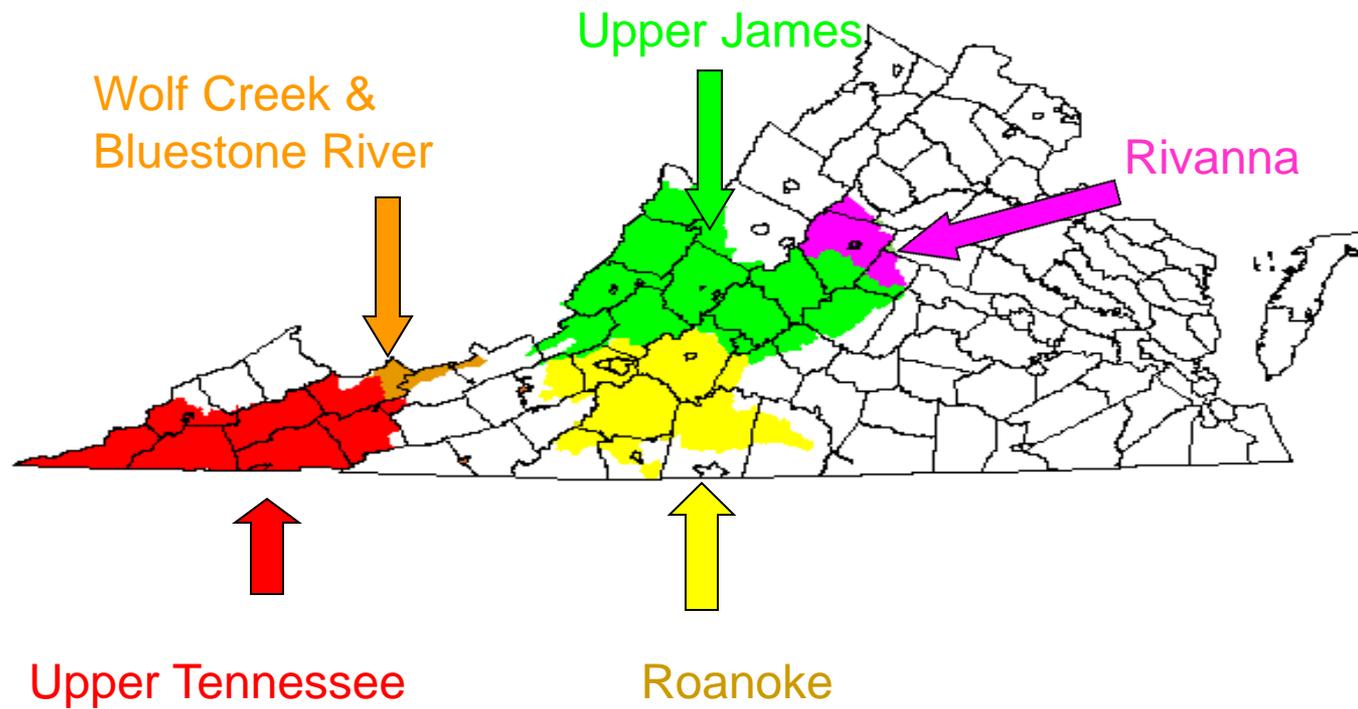


- A cost-share program funded by US Fish & Wildlife Service, administered by DGIF
- Awarded to state wildlife agencies (DGIF) to accomplish various conservation projects related to protection of at-risk wildlife species
- VDGIF received a LIP grant worth \$1.5 million in 2003, grant was extended until 2013

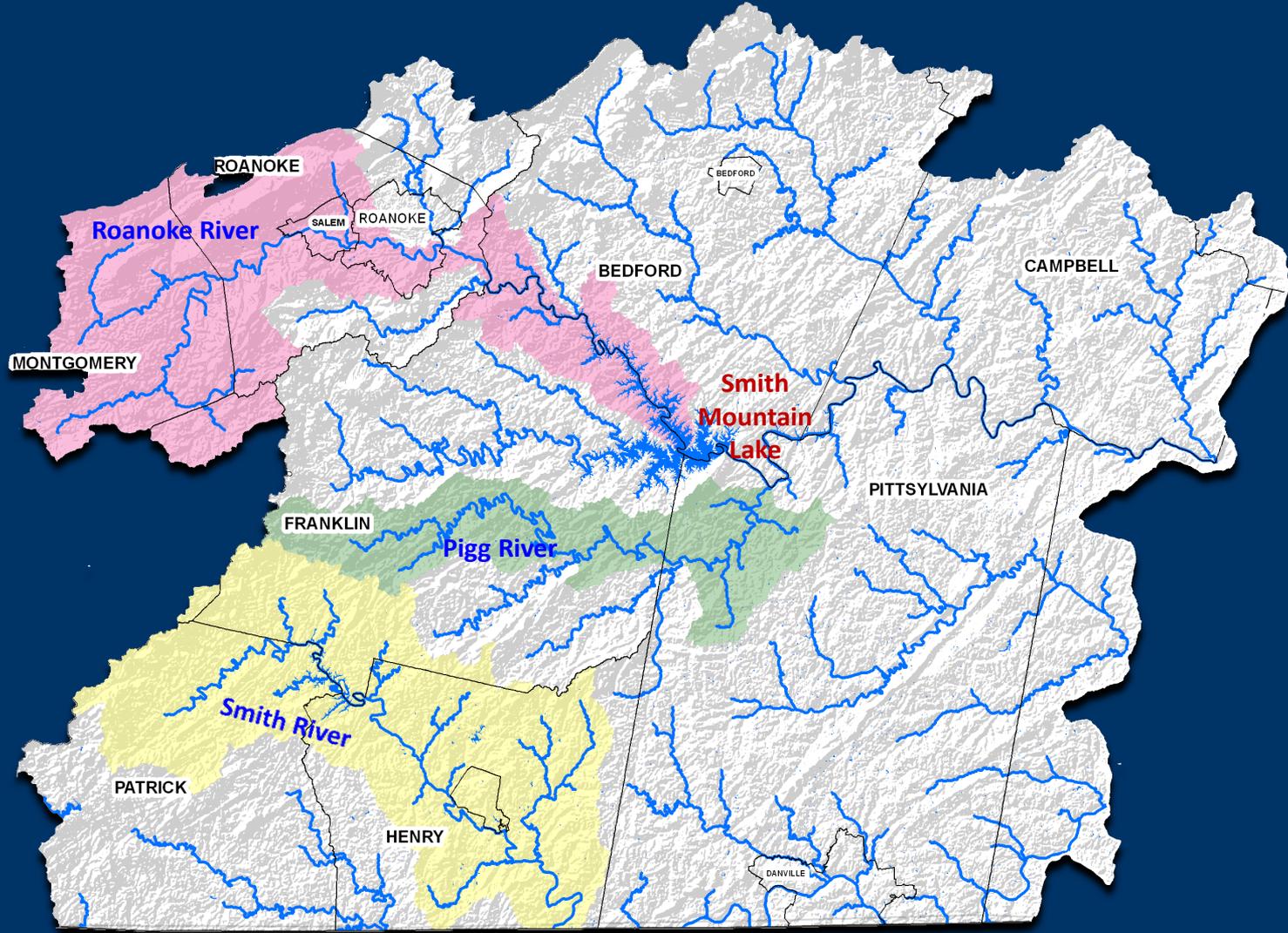
<http://www.virginia.gov/habitat/lip/>



LIP funding in selected watersheds



Virginia's Upper Roanoke River Watershed



Catawba LandCare

- Catawba LandCare is a group of residents and landowners in the Catawba and North Fork Valleys dedicated to the care of the land and community
- LandCare is simply caring for our land and community
- Neighbors working together to enhance the quality of our valley
- www.catawbalandcare.org

Catawba LandCare



Catawba LandCare
Preserving our Valleys

2007

McDonalds Mill
3875 Catawba Road
Blacksburg, Virginia 24060

Preserving the Catawba and North Fork Valleys

A special invitation to our neighbors, landowners and
all those who value and enjoy these streams and their tributaries

"Streamcare" for Catawba Creek, the North Fork and their tributaries
Sunday, October 28th, 3:00 PM at "David's Dog House",
At the Kohl Farm, 3755 Catawba Road
Site visit at 4:30 to McDonald's Mill to view stream bank improvements

Dear Catawba and North Fork Valley Neighbor,

Please join us to hear Bill Bennett, DGI's Stream Restoration Biologist, detail the opportunities and financial incentives available to us to minimize erosion along our streambanks and to create riparian buffers. At the conclusion of the presentation we invite you to join us at McDonald's Mill to view the work completed this summer along its section of the North Fork. We'll enjoy cider at the mill, either hot or cold depending upon the weather.

Again we invite you to "David's Dog House" at the Kohl farm, 3755 Catawba Road, next door and behind the McDonald's Mill Methodist Church, reached through the covered bridge. If available to you, please bring your own chairs for this occasion, as we will have only a limited supply on hand.

We'll welcome your calls with questions about "Streamcare" and this meeting. We look forward to seeing you on October 28th.

Mark your calendars for the upcoming Catawba LandCare meetings (more detailed information to follow):
January 28th - Forest Landcare for Economic Productivity
March 2nd - Agritourism
April 27th - Whole Farm Management

Cheers, Ned

Encl: Erosion and Riparian Buffers along Catawba Creek and the North Fork

Frankie & Louise Garman
384-6129
garmanbeef@yahoo.com

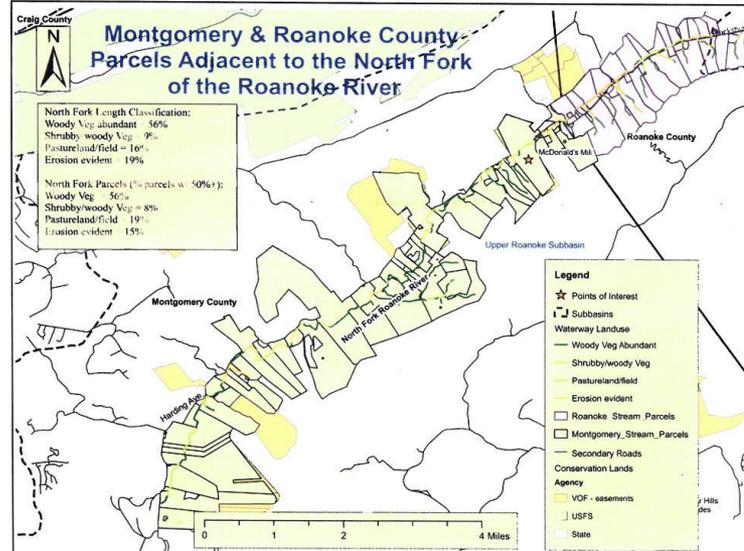
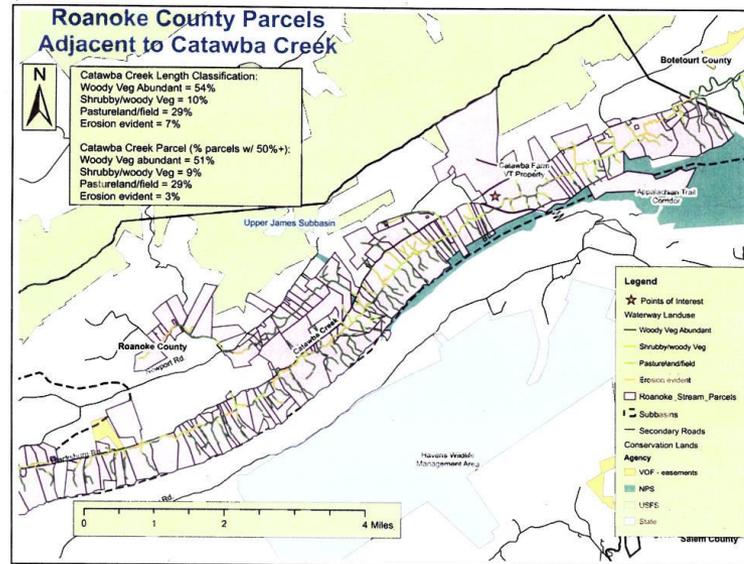
David Kohl
953-1271
sullylab@vt.edu

Ned Yost
552-5198
njyost@webtv.net

This meeting has been generously supported by:



Catawba LandCare



COMMUNITY-DRIVEN STREAM RESTORATION ON THE NORTH FORK ROANOKE RIVER

Bill Bennett & Christy Gabbard

VA Dept. of Game and Inland Fisheries  & Catawba LandCare

INTRODUCTION

Studies of stream restoration projects indicate that a watershed-scale approach is more effective in improving aquatic communities than a reach-scale, piecemeal approach [1, 2, 3]. This realization complicates the efforts of government agencies, which often must use a parcel-by-parcel approach when working with private landowners to protect endangered aquatic species.

Despite these difficulties, the VA Dept. of Game and Inland Fisheries (VDGIF) is conducting watershed-scale restoration on private lands in the North Fork Roanoke river (NFRR) watershed through the U.S. Fish and Wildlife Service Landowner Incentive Program. Much of this success can be attributed to a local citizen group, Catawba LandCare.



Cedar tree revegetation on the North Fork Roanoke river at McDonald's Mill

CATAWBA LANDCARE

LandCare is landowner-led and community based, promoting a cooperative, sustainable approach to land management that in turn produces economic, social, and environmental benefits (the triple-bottom line).

LandCare originated in Australia in response to environmental degradation and economic challenges that threatened the viability of agriculture and the communities that depended upon it. To day, over 4,000 groups exist in Australia resulting in over 12,200 river conservation projects driven by the community [4, 5].



Catawba LandCare Community Meeting

The Catawba LandCare group's mission is to support a healthy environment that supports the agricultural community and open space.

NFRR WATERSHED

The NFRR is a major tributary of the Roanoke River Basin, which hosts a diversity of rare and endemic species of high ecological importance.

However, alteration of the landscape for agriculture has caused increased erosion and siltation, impairing the aquatic habitat of these important species.

To date, VDGIF has restored 7,434 ln. ft. of stream along the NFRR with another 8,730 ln. ft. proposed for restoration in the next year.



Map of Upper Roanoke Watershed with proposed and completed restoration projects in the NFRR subwatershed.

HEADWATERS FARM RESTORATION PROJECT



October 2006

The NFRR headwaters were severely impacted due to channelization and hay cutting.

Over time, this resulted in multiple avulsions and the obstruction of flow by grass and sediment.

Restoration at the Headwaters Farm on the NFRR involved reamending 815 ln. ft. of stream, the installation of constructed riffles and 3 rock vanes.



October 2007



May 2008



NFRR RESTORATION AT McDONALD'S MILL



Volunteers and members of the local community help plant trees along the NFRR at McDonald's Mill. During this project, we planted 2,150 ln. ft. of riparian buffer, excluded cattle, installed a 300 ln. ft. cedar tree revegetation, and graded over 500 ln. ft. of severely eroding stream bank.

DISCUSSION

By collaborating with Catawba LandCare, VDGIF has found a means through which to speak to landowners interested in water quality, recreational fisheries, and the protection of endangered species. Moreover, knowledge of ongoing stream restoration projects in the watershed spreads quickly, piquing the interest of other landowners.

As efforts continue to be directed towards stream restoration through both compensatory and voluntary means, the empowering of local landowner groups to protect and restore our waters is proving to be an effective strategic approach to improving stream health on a watershed-scale.

REFERENCES

- Alexander AG, Allan JD (2007) Ecological success in stream restoration case studies from the Midwestern United States. *Environmental Management* 40:245-255.
- Lake PS, Bond N, Reich P (2007) Linking ecological theory with stream restoration. *Freshwater Biology* 52: 597-615.
- Rahert CF, Sowa SP (1996) Live grating biological rearmendito habitat restoration and conservation strategies for small streams. *Canadian Journal of Fisheries and Aquatic Sciences* 53(Suppl. 1): 251-259.
- "What is Land Care?" *The LandCare Center*, 2008. LandCare Center 29 May 2008. <http://web.ecol.cam.ac.uk/landcare/>
- "Protecting Waterways." *Landcare Online*, 2008. Landcare Australia 29 May 2008. <http://www.landcareonline.com.au/land.asp>

Catawba Landcare

Landcare is simply caring for our land and community

Caring for Catawba & North Fork Valleys

Landcare Learning Series for the Catawba & North Fork Valleys of Virginia

Catawba
Landcare

Catawba Landcare is a group of residents and landowners in the Catawba and North Fork Valleys dedicated to the care of the land and community. We are organizing a series of meetings and workshops to share our stories about caring for the land and to learn from the experiences of our neighbors.

The meeting and workshop series is scheduled for winter through summer of 2010 and will offer a unique opportunity to learn and share about a range of topics relevant to the residents & landowners of the Catawba & North Fork Valleys. Each topic will be presented from the perspectives of your neighbors and an outside resource that can provide assistance. We will also try to provide a market perspective where appropriate.

Workshops are free of charge (unless otherwise noted) and open to the public.

Visit www.catawbalandcare.org

or contact
Courtney Kimmel
ckimmel@vt.edu
(540) 585-4985

Rob & Linda Guiles
ruguiles@aol.com

Ned Yost
nivost@webtv.net

Frankie & Louise Garman
(540) 384-6129

Catawba Landcare is a volunteer organization and any financial support is greatly appreciated. Tax deductible donations can be made by sending checks to:

Virginia Tech Foundation
c/o Catawba Landcare (put in memo)
902 Prices Fork Road (0354)
Suite 4500
Blacksburg, VA 24061

Streamcare in Action – North Fork

Saturday, July 10th 2010 from 1:30pm to 4:30pm

North Fork of the Roanoke River from Lusters Gate to Headwaters

At the headwaters of the James and Roanoke Rivers, the streams and creeks of the Catawba Valley are critical for the water quality for millions of people. The VA Dept. of Game and Inland Fisheries (DGIF), the New River Valley Chapter of Trout Unlimited, and Catawba Landcare invite you to explore streamcare options, funding sources, and visit stream restoration work completed by your neighbors along the North Fork.

Visit exhibits by agencies involved with various aspects of streamcare at *David's "Doghouse"*, the new barn behind the home of David and Kendra Kohl at 3755 Catawba Road, through the covered bridge and up the hill.

At McDonalds Mill, join representatives from Save Our Streams to sample and evaluate the quality of the water in the North Fork. Climb the hill behind the Mill, to see where water captured from a spring in the cove higher up feeds two water troughs in separate fields, enabling cattle to enjoy rotational grazing, part of the work completed under DGIF's Landowner Incentive Program (LIP).

At River Rise Road, DGIF completed extensive restoration work under the LIP program.

Drive through the valley to look at other sites to see the benefits of years of streamcare by your neighbors along the North Fork.

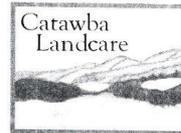
Questions should be directed to Ned Yost at nivost@webtv.net or 540-552-5198

See the next page for list of sites

W I N T E R - S U M M E R 2 0 1 0

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W I N T E R - S U M M E R 2 0 1 0

Forestry & Wildlife Management

Saturday, June 12th 2010 from 8:30am – 12pm

Starts at the Catawba Community Center

Turkey, quail, bear, rabbit, coyote, bobcat, songbirds, trout... How can you attract the wildlife you want (and deter the ones you don't)? Habitat is key and native warm season grasses and forested stream banks can help. This workshop will cover topics such as:

- What sorts of habitat attracts what wildlife
- Establishing and managing habitat for different goals or critters
- Cost-share programs available to assist in covering expenses for habitat plantings

Bob Boeren, Area Forester VA DOF; Dan Lovelace, District Wildlife Biologist, DGIF; and Jane Shaw, WHIP Coordinator - USDA will be on-hand to provide information and answer questions.

Schedule:

- 8:30am – Introductions at Catawba Community Center
- 9am – Carpool to Hinlicky's to see Native Warm Season Grass and other upland habitat improvements (the walk up the trail is a climb)
- 10:30am – Carpool to Guiles to see streamside plantings and forestry management
- 11:45am – Lunch hosted by Guiles (\$5); discuss funding and/or fee to pay for costs. Please email or call Guiles to RSVP for lunch.

Questions should be directed to Paul Hinlicky at hinlicky@roanoke.edu or Rob & Linda Guiles at ruguiles@aol.com or (540) 384-6786

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Drive through the valley to look at other sites (sites listed on the back), to see the benefits of years of streamcare by your neighbors along the North Fork.

Questions should be directed to Ned Yost at nivost@webtv.net or 540-552-5198

Catawba Landcare

Catawba Landcare: Neighbors working together to enhance the quality of our valley



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Visit www.catawbalandcare.org or contact:

Judy Fielder
(540) 552-3654
jfielder@vt.edu

Rob & Linda Guiles
ruguiles@aol.com

Ned Yost
nyost@webtv.net

Frankie & Louise Garman
(540) 384-6129

Paul Hinlicky
hinlicky@huges.net

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902 Prices Fork Road (0354)
Suite 4500
Blacksburg, VA 24061

Version: 02.03.11

Landcare Learning Series 2011

Co-sponsored by Va. Tech Catawba Sustainability Center & Catawba Valley Ruritans

Garden Envy – *Growing more and better in small spaces*

February 19, 1-3pm Catawba Community Center

Learn some tips and tricks from some of the best gardeners in the valleys. Bring your questions, your seed catalogues, and let's start planning your best garden ever.

Growing Veggies - *Even when there's frost on the ground*

March 19, 1-4pm starts at Catawba Community Center

Extend the growing season using high and low tunnels: grow crops in cold weather and protect crops during the summer. Learn about high tunnel construction and season extension techniques, then get hands-on experience constructing a low tunnel.

Wildflower Tour at Mill Creek

April 30, 9am-1pm meeting location TBA

In 2010 The Nature Conservancy was given a 222-acre nature preserve in the Catawba Valley. The type of forest protected on the Blake Preserve is rare in Virginia, largely because of fertile soil. The preserve is home to many wildflowers and animals as well as the pristine headwaters of Mill Creek, which flows into the North Fork River.

Streamside Management - Merging conservation & production

May 21, 9am-12pm Catawba Sustainability Center

Protect your stream banks using potentially profitable native plants that produce edible fruit and woody florals. Tour Catawba Sustainability Center's edible landscape plantings, hear from the USDA National Agroforestry Center staff, and participate in a hands-on woody floral planting.

So You'd Like to Have a Pond

June 4, 9am-12pm starts at Catawba Community Center

A pond can be a multi-valued asset for your property, and as Thoreau said, if you fill a big hole with water nature will come swimming. This onsite workshop covers site selection, construction, cost, resources, fish stocking and maintenance with pond expert Michelle Klopfer. **Bring fishing equipment!**

Streamcare – *Streamcare in action on Catawba Creek*

July 16, 1pm-4:30pm starts at Catawba Community Center

The streams and creeks of the valley are critical for the water quality for millions of people. Hear about streamcare options and funding sources and visit sites along Catawba Creek.

Quail Restoration

September TBA 24th starts at Catawba Community Center

Virginia's new Quail Management Plan (QMP) aims to restore quail populations to the levels that existed in the 1970s. Quail Biologist Andy Rosenberger will lead a workshop at the Catawba Community Center, followed by a tour of the Native Warm Season Grass plantings on the grounds of the Sustainability Center.

Don't forget Celebrate Catawba on August 13!



ENGAGEMENT matters

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Agriculture, and state and local governments.

Smith continued from page 1

approach and how it is helping to address land fragmentation, Virginia Tech urban forestry faculty and students and their engagement work from last spring, the Virginia Water Resources Research Center's radio segments to assist in keeping citizens informed about water resources, SHARP Logger online training classes, the benefits of growing medicinal herbs in Southwest Virginia, and what is new in the arena of wood structural systems. In addition, please take a moment to review the wonderful work of our Extension agents and specialists under the News Briefs section.

Please contact me if you have any questions regarding the articles in this newsletter or would like to be part of our engagement efforts. I can be reached at 540/231-7679 or via e-mail at rsmith4@vt.edu.

FEATURE

Streamcare in Action

Courtney Kimmel, Ph.D. Student
Department of Forest Resources and Environmental Conservation
College of Natural Resources and Environment

Streamcare—an ethic and practice of restoring and caring for contiguous sections of a tributary as it crosses property lines—has been heavily promoted by the landowner group Catawba Landcare.

Taking a water break and leaning up against his truck, Justin Laughlin, stream restoration biologist for the Virginia Department of Game and Inland Fisheries, surveyed progress being made by volunteers planting seedlings and jamming cuttings into the stream banks. Standing in his waders, he had just told me that Catawba Valley was one of his favorite places to work in his 13-county operating region. I looked out at the volunteer army representing Catawba Landcare, Trout Unlimited, and other land conservation focused groups, who were busily planting seedlings on that warm March day. "What's different about Catawba?" I asked.

"Because it's the only place where they are doing this from a watershed perspective," he responded, sweeping his arms across the scene in front of us, where the stream restoration work on one farm property along the North Fork of the Roanoke River had just met and connected with the restoration work done on the neighboring property the previous spring. "This program was intended to work this way, but they are the only people doing it."

"Streamcare" is an ethic and practice of restoring and caring for contiguous sections of a tributary as it crosses property lines, one

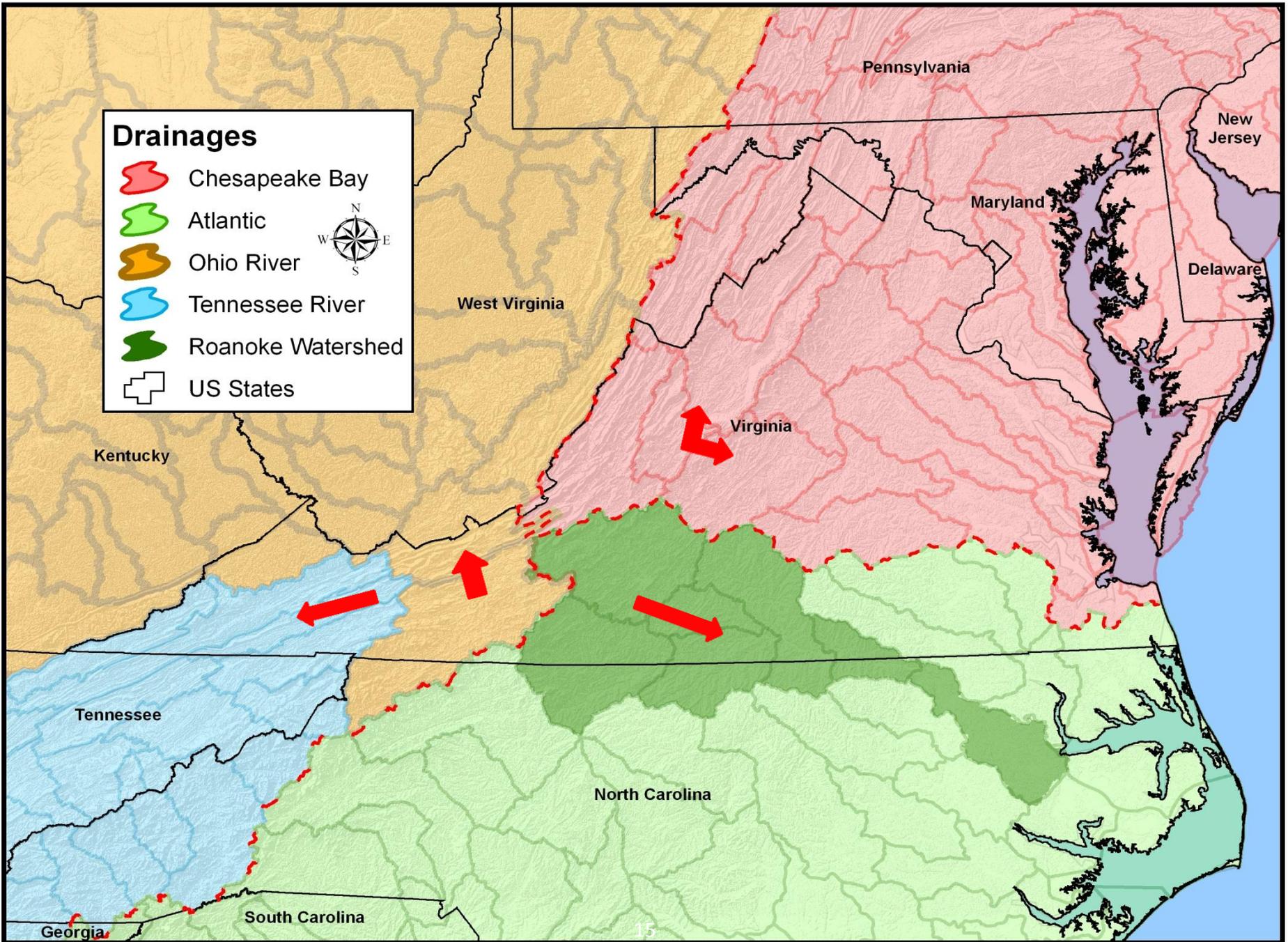
that has been heavily promoted by the landowner group Catawba Landcare. That streamcare has taken hold in this particular valley is especially significant because the region surrounding the Catawba Valley serves as the headwaters for three critical watersheds of the eastern United States—Catawba Creek flows into the James River and down into the Chesapeake Bay; the North Fork of the Roanoke River flows into Albemarle Sound; and the New River drainage eventually finds its way to the Gulf of Mexico. Typical of the ridge and valley region of the Appalachians, the Catawba Valley is a narrow, flat valley surrounded by two parallel ridges with its tributaries meandering across the valley floor, forming a prominent thread for the communities along the valley.

The name Catawba is Siouan for "people of the river," evidence of the important role the rivers have played historically in supporting and connecting the communities along the valley. Catawba Landcare was formed in 2007 with the goal of connecting neighbors and properties along the valley to engage landowners in the sustainable management of the land and resources of the valley and to strengthen economic and social opportunities for its residents. A central focus for the group has

Continued on page 3

StreamCare in Action

- “Because this is the only place where they are doing this from a watershed perspective” J.Laughlin
- “...the region surrounding the Catawba valley serves as the headwaters for three critical watersheds of the eastern US...” K.Kimmel
- “The name Catawba is Sioun for “people of the river”, evidence of the important role the rivers have played historically in supporting and connecting communities.” K.Kimmel



Catawba LandCare

FEATURE

Streamcare continued from page 2



Ned Yost, Catawba Landcare steering committee member and landowner in the Catawba Valley, works with a young neighbor to plant saplings along the banks of the North Fork of the Roanoke River as part of the streamcare effort in the area.

been the care of the North Fork and Catawba Creek—what the group has come to call “streamcare.” Several informational meetings and workshops on streamcare have been hosted by the landcare group and co-sponsored by organizations and agencies such as DGIF, Trout Unlimited, USDA NRCS, the Western Virginia Water Authority, and Virginia Save Our Streams (SOS). There have also been several field work days to gather volunteers from the community to help their neighbors plant trees and shrubs along their streambanks, which also helps landowners meet their commitments for cost-share programs.

In July 2010, Catawba Landcare, Trout Unlimited, and the Virginia Department of Game and Inland Fisheries hosted Streamcare in Action on the North Fork, which also received sponsorship from the Virginia Water Resources Research Center, the Skyline Soil

and Water Conservation District, and the National Trust for Historic Preservation. The event served as the finale for the 2010 Landcare Learning Series, a series of workshops on sustainable land management topics taught by a mix of landowners and agency experts. Streamcare in Action was a self-guided tour of nine different stream restoration sites along the North Fork in the Catawba and Ellet valleys. At each site, residents were on hand to explain how they tackled their restoration work and to answer questions. The event also featured exhibits and demonstrations by the sponsoring agencies about stream restoration options and opportunities.

Streamcare is one of many approaches being developed by Catawba Landcare to address the challenges of urbanization and land fragmentation facing the region. By working directly with landowners and residents through community

landcare groups, Virginia Tech students and faculty are helping to respond to immediate problems and issues emerging in the university’s own backyard. Landcare is an international model that can provide one strategy for a land grant university to engage in the 21st century challenges of sustainability.



Many of the tributaries feeding into the North Fork run through land used for pasture that has become highly eroded under the hooves of cattle. Above is a photo of one such tributary before being fenced off and revegetated.

The photo below was taken just a few months after the tributary was excluded and planted with trees and shrubs.





Implementation Genius – Mr. Ned Yost

Ned mentors about the need for partnerships inside his log cabin at McDonalds Mill in the North Fork Roanoke River watershed.

Conservation Partners

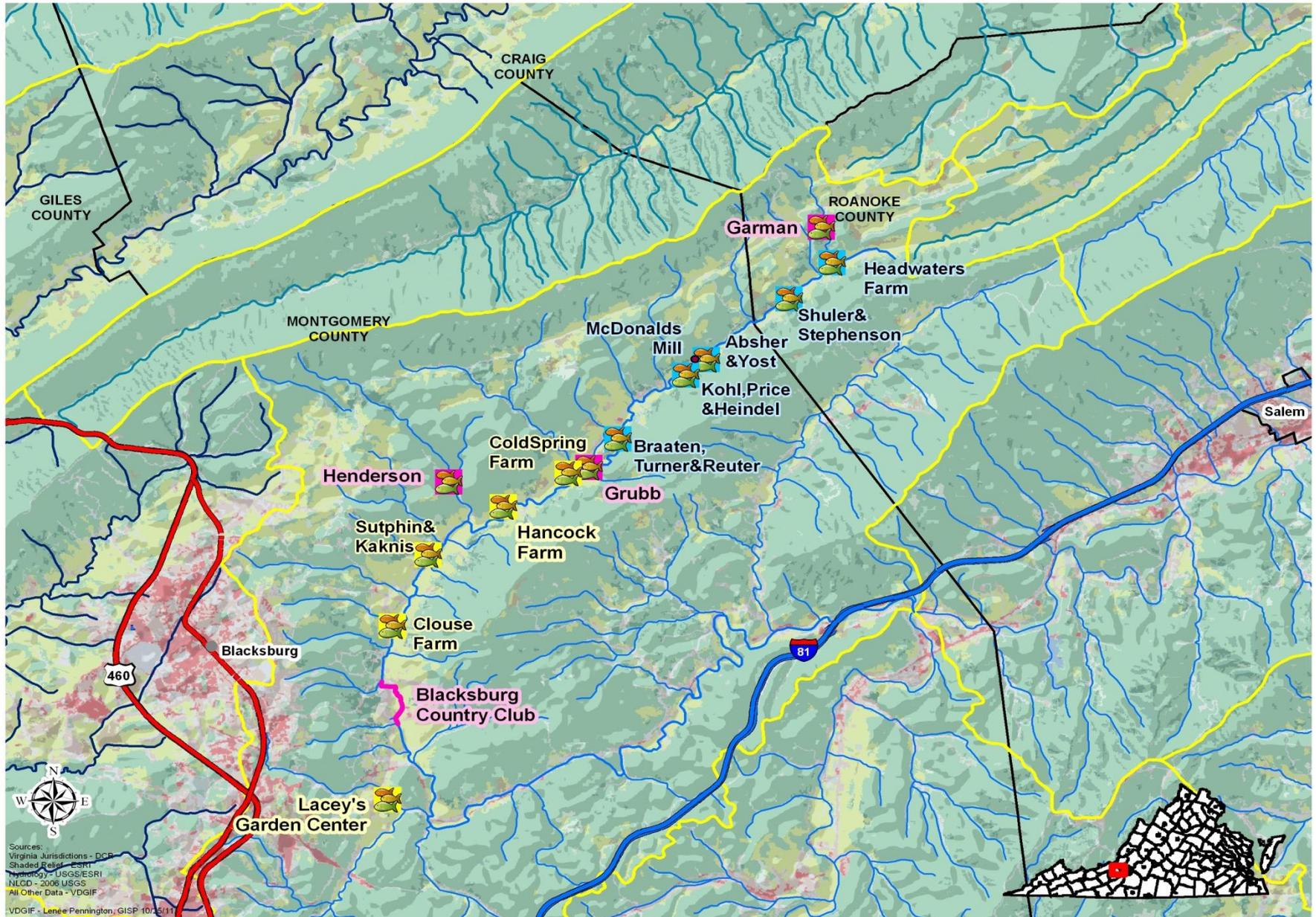
Public

- Virginia Dept. of Game & Inland Fisheries
- Virginia Dept. of Forestry
- DCR – Water Quality Improvement Fund
- Virginia Outdoor Foundation
- Virginia Tech
- U.S. Fish & Wildlife Service – Partners
- Skyline Soil & Water Conservation District

Private

- Catawba LandCare
- Fish America Foundation
- New River Land Trust
- Trout Unlimited – New River Valley Chapter
- Virginia Master Naturalist – New River Valley Chapter
- Vaughn Bassett Furniture Company
- Western Virginia Land Trust
- Western VA Water Authority

North Fork Roanoke River Restoration Sites



Catawba Landcare

Driving Tour of *Streamcare in Action* along the North Fork of the Roanoke River

Saturday, July 10th 2010

1:30pm to 4:30pm

from the North Fork's Headwaters to below Lusters Gate

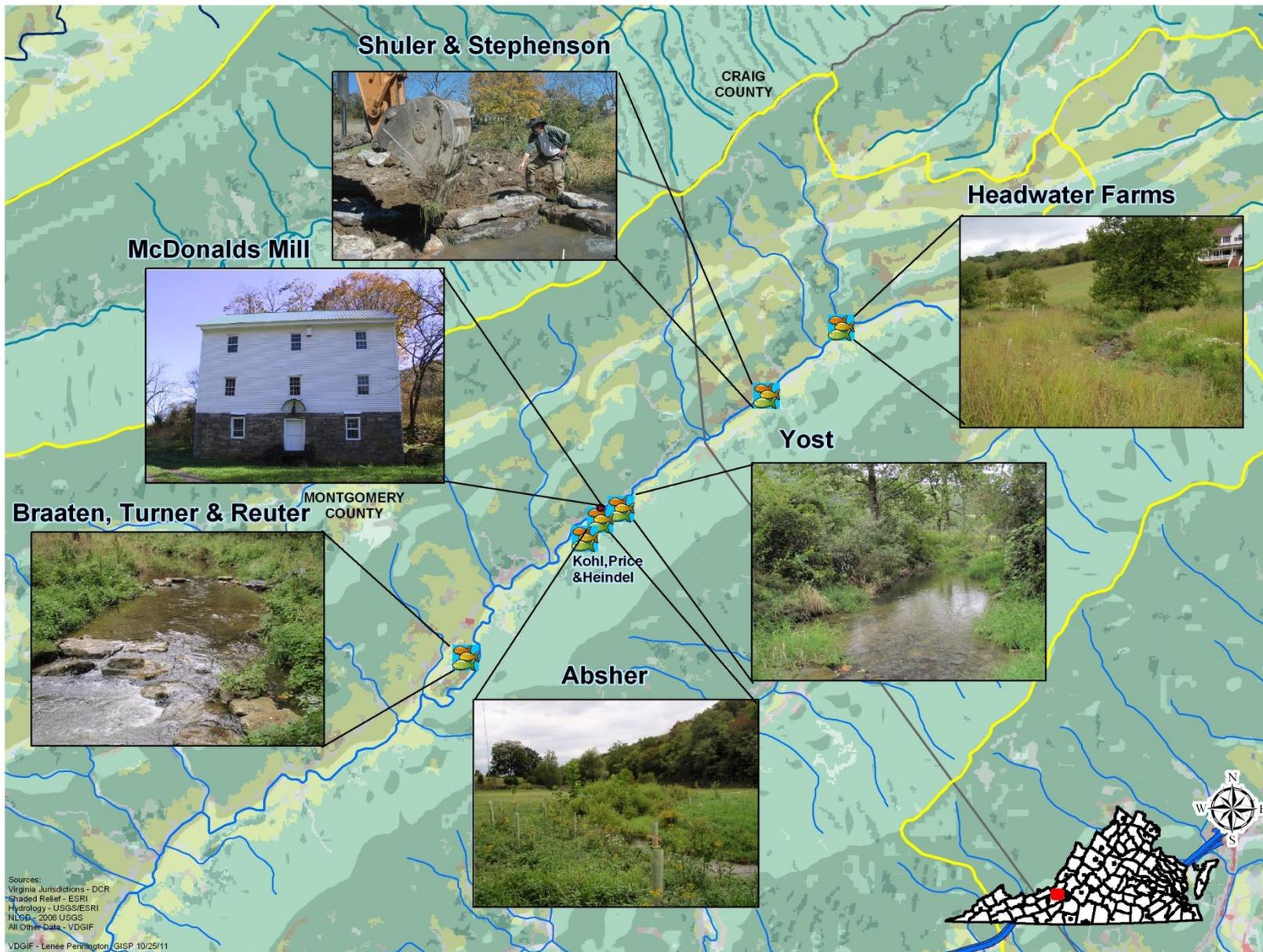
Site	Project	Work Done	Tour Stop
Headwaters Farm 8435 Blacksburg Rd.	<ul style="list-style-type: none"> Stream returned to original bed Trees planted March '08 	'07-'08	View from Blacksburg Rd
Shuler & Stephenson 8906 Blacksburg Rd.	<ul style="list-style-type: none"> Erosion control added to streambed Trees planted March '10 	'09-'10	View from Blacksburg Rd
McDonalds Mill 3875 Catawba Rd.	<ul style="list-style-type: none"> Erosion control upstream of mill Trees planted March '08 	'07-'08	Park at McDonalds Mill SOS water sampling
Absher & Yost McDonalds Mill & 3829 Catawba Rd.	<ul style="list-style-type: none"> Hardened cattle crossing Springs captured for cattle watering troughs Trees planted March '10 	'09-'10	Park at McDonalds Mill
Kohl, Price & Heindel 3755 to 3635 Catawba Rd.	<ul style="list-style-type: none"> Cattle fenced out of stream 	April 2010	View from Kohl Farm or Catawba Rd. Parking in front of covered bridge ---Tour Headquarters!
Braaten, Turner & Reuter 4000 River Rise Rd.	<ul style="list-style-type: none"> Erosion control added to streambed Trees planted March '09 	'08-'09	Park at gate Walk to North Fork
Cold Spring Farm 2537 Catawba Rd.	<ul style="list-style-type: none"> Solar-powered water pump feeds upper pasture Riparian buffer fenced & trees planted 	1995	Park at house Walk to North Fork
Sutphin & Kakris 1279 to 1145 Catawba Rd.	<ul style="list-style-type: none"> Riparian buffer established 	1972	Access to North Fork from 1279 Catawba Rd.
Clouse Farm 2440 Lusters Gate Rd.	<ul style="list-style-type: none"> Cattle fenced out of stream Trees planted 	1998	View from Lusters Gate Rd.

Remember, you're in the country; Stick to roads and paths. Be Alert!

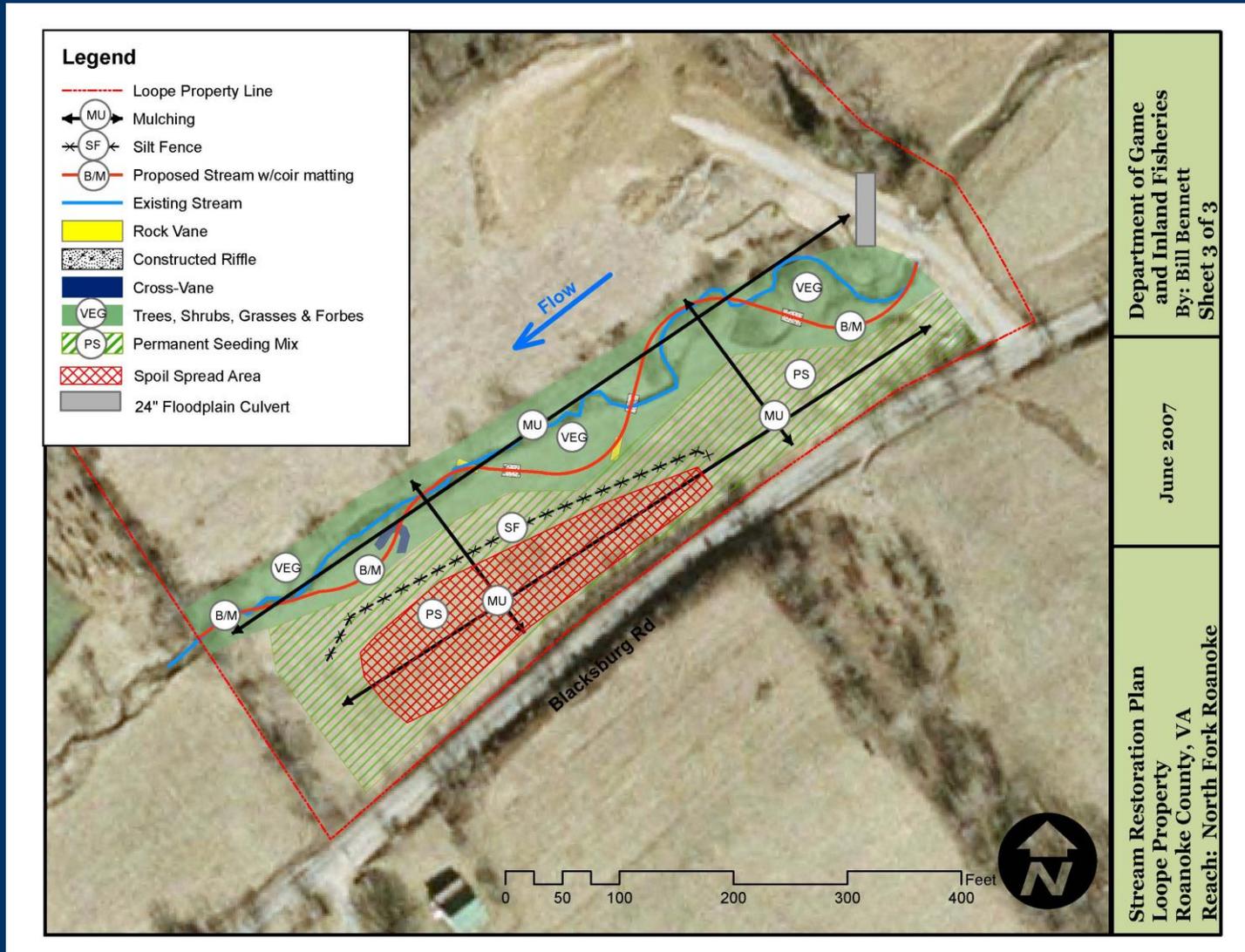
Over the years, many agencies and organizations have contributed to the North Fork's improved health. They include: US Fish & Wildlife's "Partners for Wildlife" program; WQIF funding through VA Dept. of Conservation and Recreation; FishAmerica Foundation through VA DGIF; VA Dept. of Forestry and Vaughan-Bassett for its donation of tree seedlings; and Skyline Soil and Water Conservation District.



DGIF restoration projects on NFRR



Headwater Farms project



Headwater Farms project



Headwater Farm project



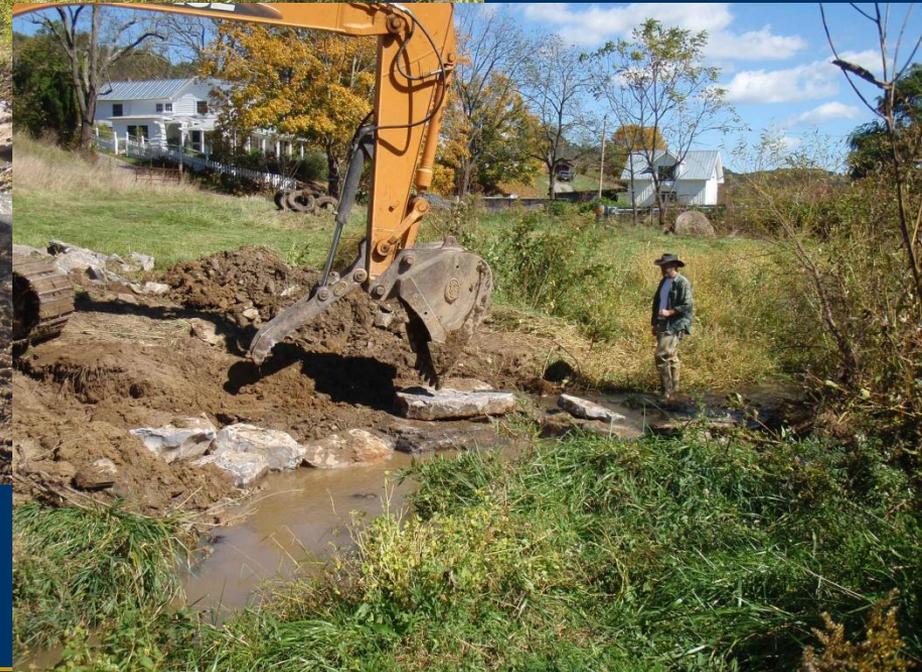
Shuler/Stevenson project



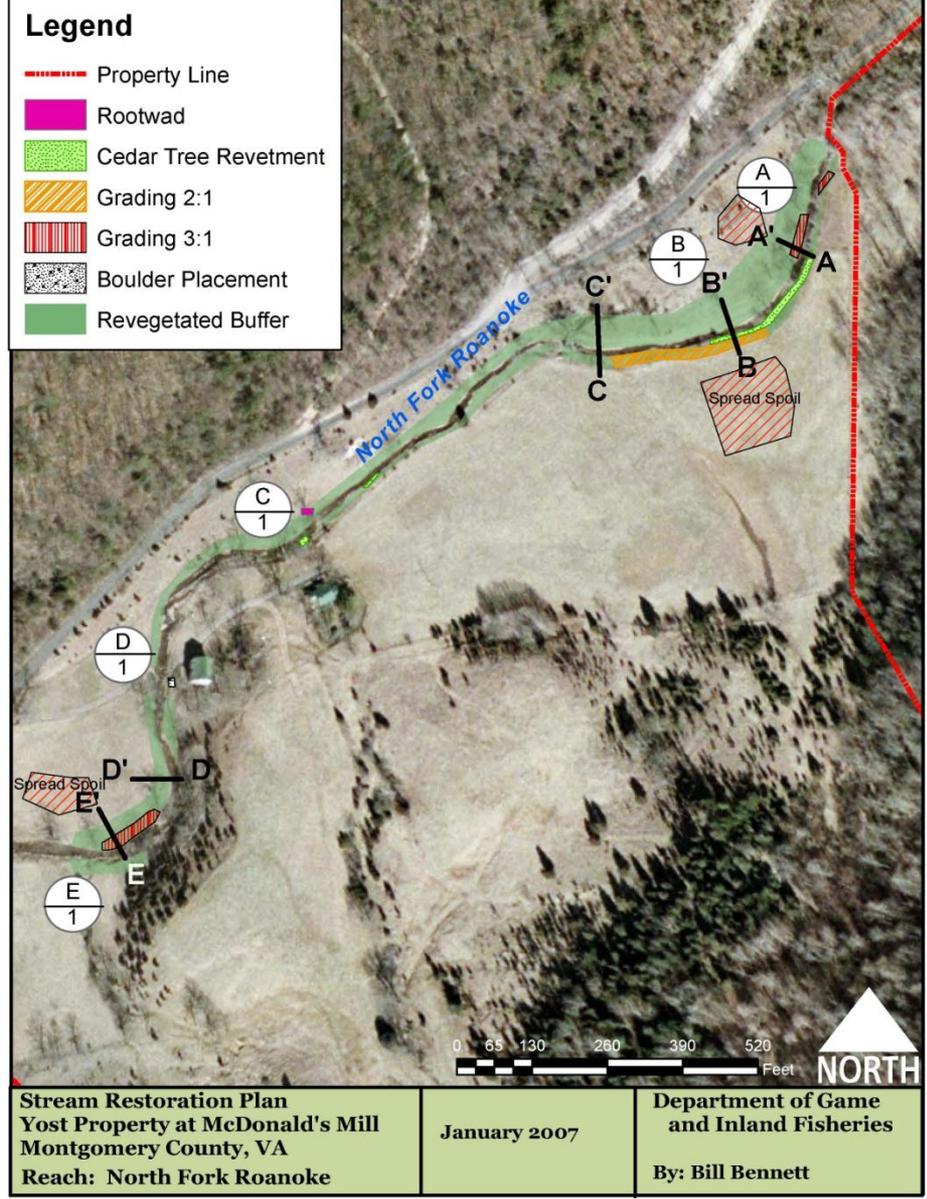
BEFORE



Shuler/Stevenson project



Yost project – phase I



Yost project – phase I



Yost project – phase I



Yost project – phase I



Yost project – phase I



AFTER – 4 yrs



Yost project – phase II



Absher project



Absher project

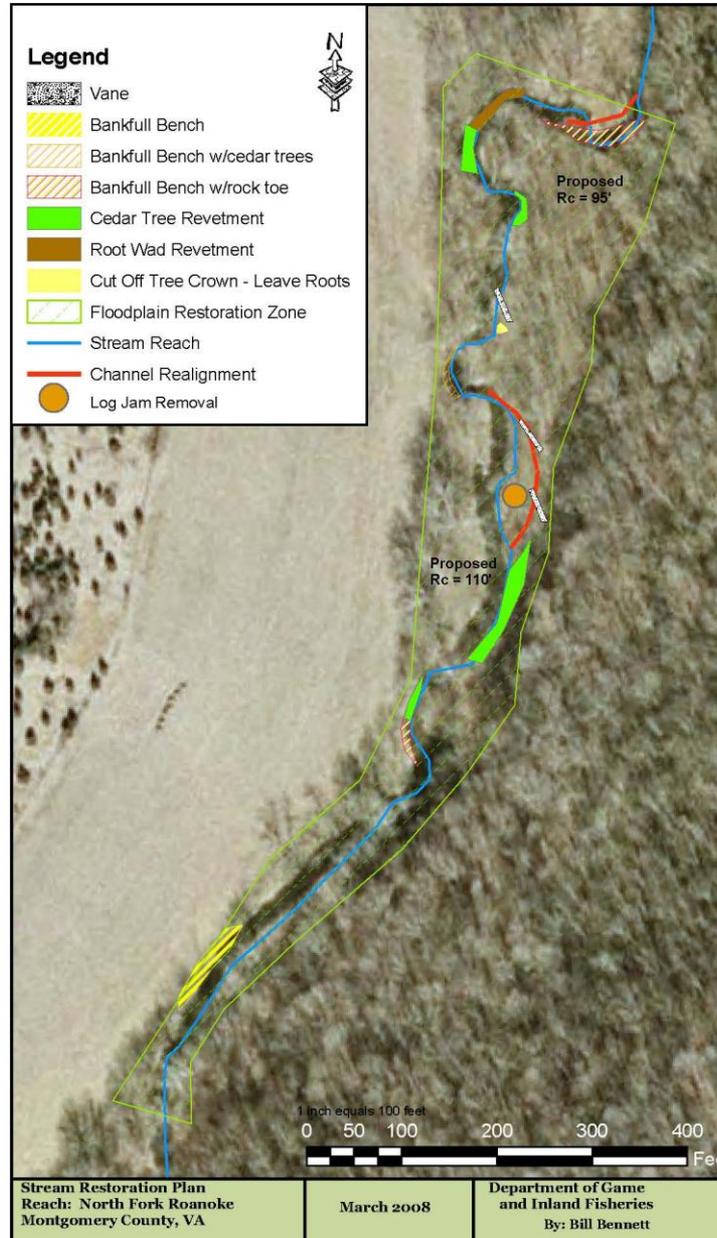


BEFORE – DGIF Team

AFTER – 1 yr



BTR project



BTR project



BEFORE



BTR project



BTR project



BTR project



BTR project



BTR project



BTR project



BTR project



Conclusions

- Partnerships are required for grant funded restoration
- Restoration comes down to personal relationships – By collaborating with Catawba LandCare, VDGIF has found an effective method to engage landowners about improving water quality, recreational fisheries, and protecting sensitive aquatic species

Conclusions

- Small niche market for grant funded public-private partnerships
- The success of this watershed-scale restoration project is due to empowering local landowners to protect and restore our waters which improves the community and stream health

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