

2019 Year in Review

Success Stories & Accomplishments

N.C. Forest Service, Nonpoint Source & Water Quality programs

Stream Restoration

Linville River Restoration Project at Gill State Forest

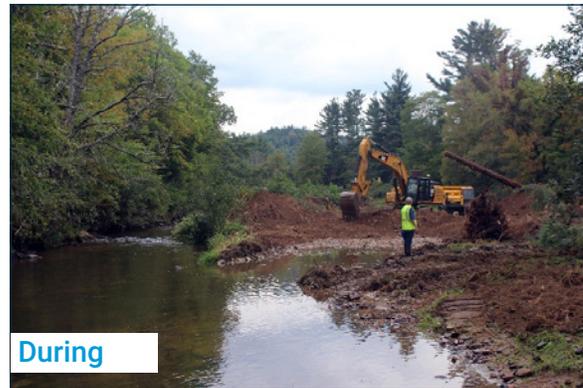
In 2012, the N.C. Forest Service concluded that a portion of the Linville River flowing through Gill State Forest could be improved for aquatic habitat and the fishery. After securing the necessary grant funds in 2016, the N.C. Forest Service partnered with Resource Institute, North State Environmental, and Jennings Environmental to complete the restoration work in 2019.

While planning and permitting for this restoration took over five years, reconstruction of this 2,400-foot section of stream only took about one week. Benefits of this work include: stable stream banks, improved water energy and directional flow, improved fishery and amphibian habitat, and future establishment of walking/fishing trails.

To learn more about this project, visit our webpage: ncforestservice.gov/LinvilleRiverRestoration/.



Before



During



After



After



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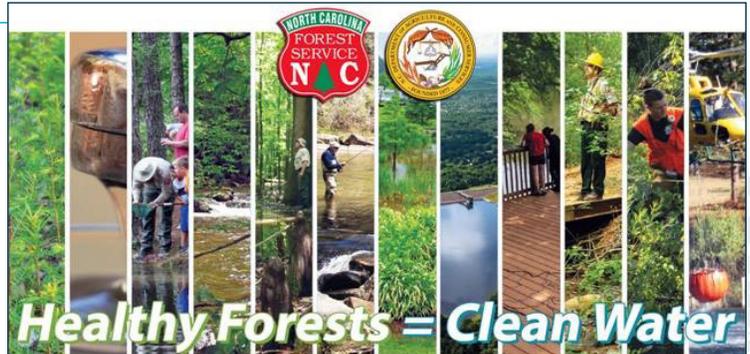
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Education, Outreach & Training

The N.C. Forest Service 2019 Water Theme

The N.C. Forest Service emphasized the benefits of forests for clean water this past year by using the theme **Healthy Forests = Clean Water**.

N.C. Forest Service staff across the state utilized Water Resources Branch products to spotlight this theme at the State Fair, local outreach events and forestry-related meetings.



Bottomland swamp forestry leaflets

A miniseries of five bottomland swamp forestry leaflets were released in early 2019.

Read them here: <https://www.ncforestservice.gov/publications.htm>.



Notable Outreach Events and Products with N.C. Forest Service Participation

Forest and Drinking Water Videos

Through the Southern Group of State Foresters, a series of seven short videos were created to highlight that healthy forests are critical to the future of our drinking water. Topics covered in these videos included the connection between forests and water, the importance of source water protection, the forest landowner and water utility roles in protecting water quality, and the role of forests in protecting water quality during flooding events. These videos can be viewed on YouTube: <https://qr.go.page.link/aq9n2>.



National Conservation Foundation (NCF) - Envirothon Competition

The N.C. Forest Service assisted with the creation and administration of the forestry exam, redevelopment of forestry resource materials and organization of the forestry field day lessons for the 2019 NCF-Envirothon competition. Learn more about this competition here: <https://envirothon.org/the-competition/past-competitions/>.

U.S. Environmental Protection Agency (EPA) Representatives Tour at Coweeta Hydrologic Lab

The U.S. Forest Service hosted EPA nonpoint source coordinators at Coweeta Hydrologic Lab to gain some perspective on forestry and water research conducted at Coweeta, forestry operations and BMPs, and current forestry-related efforts to protect water quality throughout the Southeastern U.S. through the Southern Group of State Foresters. The N.C. Forest Service presented information about working with private landowners to promote the implementation of BMPs.



Photo courtesy of the U.S. Environmental Protection Agency

BMP Implementation Assessment on Logging Sites

The fourth cycle of BMP implementation assessments is underway. These surveys reflect many different types of timber harvests conducted in nearly every county across North Carolina. In this cycle, we will capture data from 216 active or recently completed logging sites.



Mountains

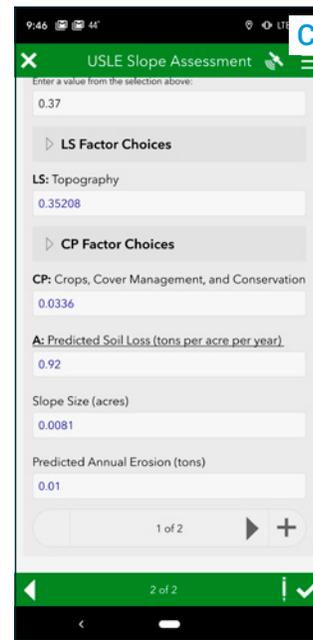
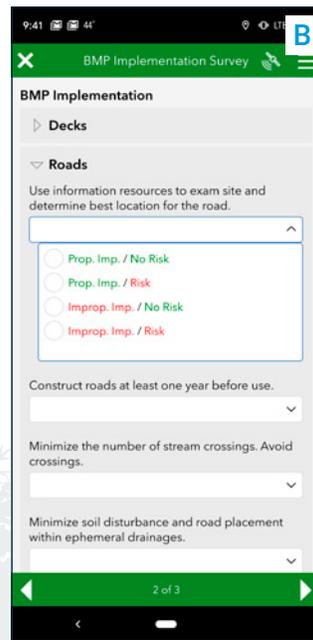


Piedmont



Coastal Plains

A U.S. Forest Service Landscape Scale Restoration grant award enhanced this survey by allowing N.C. Forest Service staff to develop a protocol for estimating forestry BMP effectiveness and sediment delivery from areas near streams using a soil erosion model called the Universal Soil Loss Equation-Forest. This data will be used to estimate the percent reduction in soil erosion and sediment delivery from implementation of the observed BMPs. The addition to the survey leverages ESRI™ ArcCollector and Survey123 platforms to collect data via smart devices (shown below).



Smart device screenshots of the ESRI™ ArcCollector platform (A) and ESRI™ Survey123 platform (B) being used in the current BMP Implementation Survey. ESRI™ Survey123 platform (C) for the erosion modeling estimation calculator.

These recurring periodic assessments of current or recently completed timber harvests allow the N.C. Forest Service to understand where and how BMPs are being implemented, and the level of risk to water quality that occurs if BMPs are not implemented or implemented improperly. This recurring survey provides a feedback mechanism for future refinement or development of forestry BMPs as they appear in the BMP Manual and supplemental publications. Survey publications and associated products can be found here: https://www.ncforestservice.gov/water_quality/wq_bmp_studies.htm.

Bridgemat Loan & Education Service

The N.C. Forest Service has provided portable, temporary bridgemats to loggers as a service to demonstrate how well they can protect water quality on stream or ditch crossings. During this past year, our bridgemats were used to protect 16 water crossings on 13 logging jobs, and the bridgemats provided access to an estimated 491 acres of timber for harvesting.



Other Training, Education & Outreach

Notable events that included a significant contribution of information on BMPs, water quality or forest watersheds:

- ▶ **76 loggers** through the N.C. Forestry Association's ProLogger Base Program
- ▶ **95 high school students** in the annual Resource Conservation Workshop at Clemmons Educational State Forest
- ▶ **30 attendees** of the annual meeting for the NCAS&WCD Natural Environment Committee
- ▶ **255 private-sector industry and consulting forestry professionals**, including the North Carolina SFI Committee
- ▶ **15 members** of the Triangle Chapter of the N.C. Society of Surveyors
- ▶ **90 attendees** of the NCDEQ Division of Energy, Mineral and Land Resources Local Program Workshop
- ▶ **55 attendees** of the state's Surface Water Identification and Training Certification Course
- ▶ **16 attendees** of the Forestry and Water Programs and Research Tour of Coweeta Hydrologic Lab
- ▶ **40 attendees** of the Lunchtime Discovery Series: Forestry Preharvest Planning Tool Demonstration
- ▶ **150 grade school students** through N.C. Forestry Association's Forestry and Environmental Camp
- ▶ **95 college students** participating in classroom instruction, field labs and forestry summer camp
- ▶ **41 N.C. Forest Service Rangers** of the Water Quality and Soils training
- ▶ Assisted with the Southern Farm Show and Black Bear Festival
- ▶ Contributed to the Water Resources Committee at the winter meeting of the Southern Group of State Foresters
- ▶ Attended the annual conference of the North Carolina Water Resources Research Institute

Water Quality and Erosion and Sediment Control Site Inspections

For the state fiscal year of July 2018 through June 2019, the following results were observed by the North Carolina Forest Service while conducting inspections of forestry-related, land-disturbing activities to determine compliance with the standards of the *Forest Practice Guidelines Related to Water Quality* ("FPGs": 02 NCAC 60C .0100 to .0209), as part of the N.C. Sedimentation Pollution Control Act. During this past fiscal year, the NCFS reached a notable milestone: a cumulative total of more than 100,000 initial site inspections have been recorded since the agency began conducting inspections in 1990.

Type of Operation	In-Compliance	Out-of-Compliance	Total
Timber Harvest: Active	2,035	34	2,069
Timber Harvest: Completed	699	12	711
Reforestation and Site Prep	158	0	158
Other*	185	1	186
Total	3,077	47	3,124

* Other activities include silvicultural management practices such as precommercial thinning, crop-tree release, herbicide or fertilizer application, prescribed burning or forest road construction not associated with a timber harvest.

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