



# 2022 Year in Review

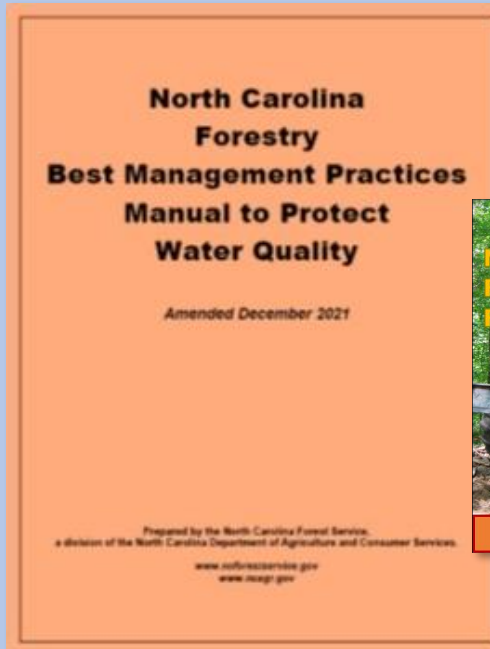


Success Stories & Accomplishments  
N.C. Forest Service, Nonpoint Source & Water Quality programs

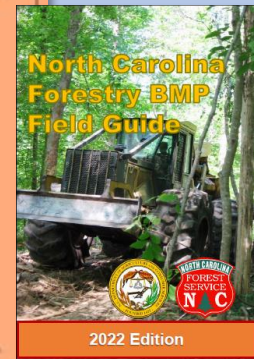
## BMP Manual & Field Guide

Staff with the Water Resources Branch (WRB) released the revised North Carolina Forestry BMP Manual to protect water quality in February 2022. There were 6,000 copies printed and over 2,000 were distributed to internal and external customers throughout the year. The companion BMP Field Guide was also revised and 5,000 copies printed. Both documents will be distributed directly to logging contractors, landowners, and others in the forestry community.

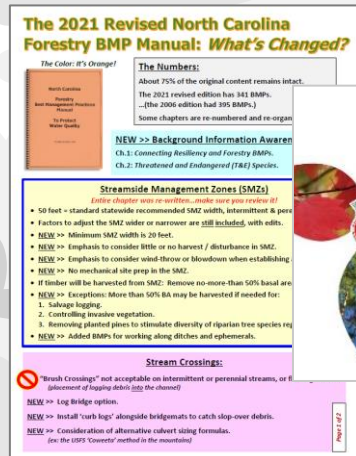
We presented the manual updates at 14 events that reached an estimated 745 people. Additionally, staff were recorded while providing updates to be included in the 2023 ProLogger refresher module. The module is expected to reach more than 1,600 resource professionals seeking to maintain their ProLogger status.



Revised *BMP Manual* and companion *BMP Field Guide*



ProLogger video module filming

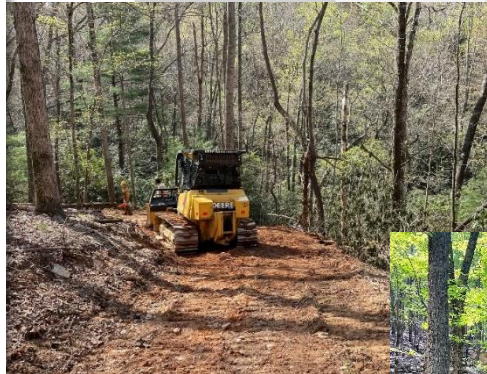


A 'What's Changed' powerpoint summary highlighting the revisions, and the online-only appendixes are posted to the agency's website.

[https://www.ncforestservice.gov/water\\_quality/bmp\\_manual.htm](https://www.ncforestservice.gov/water_quality/bmp_manual.htm)

## Fire Rehabilitation

The N.C. Forest Service protects forests by suppressing wildfires across the state. Rehabilitation of small and large fire suppression impacts are an important step in the process of responsibly protecting and managing our forests. We engaged in several incident response events in 2022. Staff assisted with map creation and the organization of incident specific geospatial data for the Ferebee Road and Juniper Road Two incidents. Staff also participated in the development and implementation of rehabilitation planning and helped facilitate communications with federal partners.



Dozer installing water diversions on steep sections of a low standard forest access road that was used as a fire break.

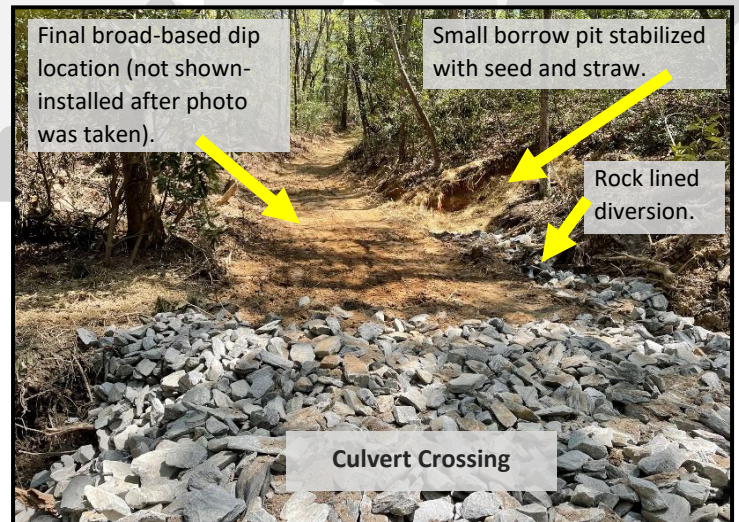


Spreading straw mulch on firelines after a fire at Pilot Mountain.



Broad-based dip with seed and straw matting.

Ephemeral crossing stabilized with riprap.



Final broad-based dip location (not shown - installed after photo was taken).

Small borrow pit stabilized with seed and straw.

Rock lined diversion.

Culvert Crossing

## State Forest BMP Demonstrations

Funds derived from USEPA's Nonpoint Source 319-Grant Program were made available to make BMP infrastructure improvements to a few sections of forest roads on Bladen Lakes State Forest.



Before



After

Road section was regraded to improve drainage from the road surface.

A new ford crossing installed to replace a crushed culvert. Surplus geotextile netting from the nursery was used at the crossing approach way and underlayment for the stone.



Before

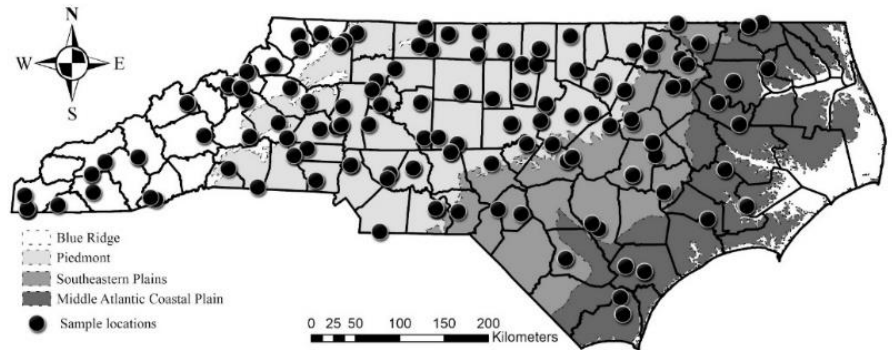


After

## Peer-reviewed Journal Article

The N.C. Forest Service conducted and published a study that characterizes implemented stream crossing types and methods of access, as well as quantified BMP effectiveness at 220 intermittent or perennial stream crossings throughout North Carolina (Figure 1). Soil erosion was estimated using the Universal Soil Loss Equation (USLE). Data was collected between December 2018 and November 2020.

- Portable bridges and overland skid trails were the most frequently observed stream crossing type and access method statewide.
- Of the 220 stream crossings we assessed, 12 percent produced most (80%) of the total estimated soil erosion.
- Findings support the efforts of state forestry agencies and the forest industry, to engage with forest operators during active operations to offer technical assistance and proactively address erosion and sedimentation control issues.



*Approximate locations of sampled stream crossing sites (117 tracts) and counties within North Carolina's ecoregions.*

*Lang, A.J., W.A. Coats, T.A. Gerow Jr., and W.A. Swartley. 2022. Estimates of soil erosion and best management practice effectiveness at forestry stream crossings in North Carolina. Journal of Soil and Water Conservation. 77(3):292-304. doi:10.2489/jswc.2022.00110.*

## Bridgemats

During the fiscal year 2021-2022, NCFCS-owned bridgemats were used by loggers to protect waterway crossings:

15 tracts  
17 crossings  
295 acres of timber harvest accessed



The photo on the left shows a set of bridgemats from a logging job in February 2022. Note the panels are tightly butted together and log poles are used to expand the bridge width to allow the trailer ample room to back into the decking area.

## Education, Training and Outreach

Throughout 2022, we continued to provide training through distance learning and video conferencing sessions, as well as several in-person events. Below is a count of attendees at notable events where NCFS employees instructed or presented on BMPs or forest water quality:

133	NC ProLoggers
60	NC State University students
22	N.C. Forest Service rangers
604	Private and public sector forestry professionals
315	Local government officials, staff and environmental consulting professionals



## Water Quality and Erosion and Sediment Control Site Inspections

For the 2021-2022 state fiscal year, the following results were observed by the N. C. 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.

Type of Operation	In-Compliance	Out-of-Compliance	Total
Timber Harvest: Active	1,459	12	1,471
Timber Harvest: Completed	667	10	677
Reforestation and Site Prep	227	0	227
Other*	121	0	121
<b>Sub-Total</b>	<b>2,474</b>	<b>22</b>	<b>2,496</b>
<b>Re-Inspections, All types</b>			<b>2,603</b>
<b>Grand Total, All Inspections</b>			<b>5,099</b>

\* 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.

Find out more on our  
website



[https://www.ncforestservice.gov/water\\_quality/water\\_quality.htm](https://www.ncforestservice.gov/water_quality/water_quality.htm)

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