



This issue's cover photo is of staffers from the N.C. Forest Service Water Resources Branch being filmed while discussing the BMP manual updates. Some of the footage will be used in the next ProLogger continuing education video module. Over 1,500 logging contractors, mill representatives and other natural resource professionals participate in the ProLogger program. This training is one component of most forest certifications programs. Third party audited certification programs provide independent information on the environmental impacts of the forest products sector. These programs have had a positive influence on BMP implementation and monitoring since each program requires that logging contractors receive BMP training and promptly remediate problems when they occur.

Learn more about the North Carolina Forestry Association's ProLogger program at www.ncforestry.org.

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Estimates of Soil Erosion and BMP Effectiveness at Forestry Stream Crossings

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.

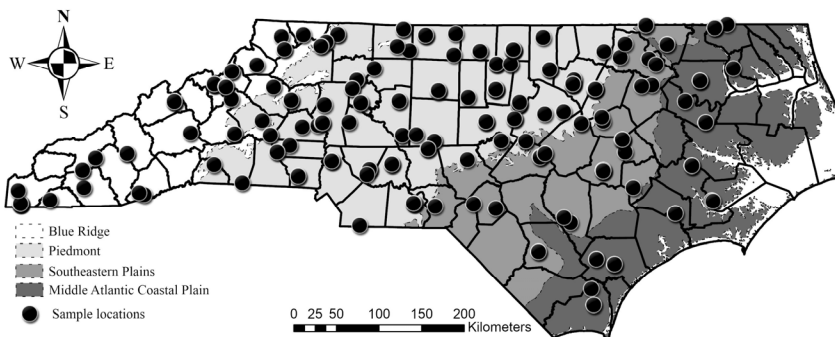


Figure 1: Approximate locations of sampled stream crossing sites (117 tracts) and counties within North Carolina's ecoregions.

Portable bridges and overland skid trails were the most frequently observed stream crossing type and access method statewide. Over 90 percent of BMPs were properly implemented at stream crossings.

Of the 220 stream crossings we assessed, 12 percent produced most of the total estimated soil erosion (80%). This finding supports 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.

Check out the published work linked below.

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](https://doi.org/10.2489/jswc.2022.00110).

Fire Rehabilitation: Gator Fire

While in the process of fighting wildfires, unintentional damage to natural resources can occur. This may be a direct result from firelines and stream crossings, or indirectly from erosion that occurs long after incident personnel have left the property. To ensure our footprint on the forest is a positive one, rehabilitation of fire suppression impacts is an important step in the process of responsibly protecting and managing our forests.

In March 2022, the Gator Fire burned over 200 acres in Surry County. Several access trails were located onsite before the fire and were widened or improved during fireline construction. Although necessary, these improvements caused soil disturbance on steep slopes, a partial obstruction of a perennial stream due to limbs and other vegetative debris being pushed off the adjacent fireline and created a new culvert crossing which was not stabilized during the incident. Surry County staff, in conjunction with district and water quality personnel, worked to create a rehabilitation plan for combating these impacts.



Dozer operator Chris installing water diversions on steep sections of a low standard forest access road that was used as a firebreak.



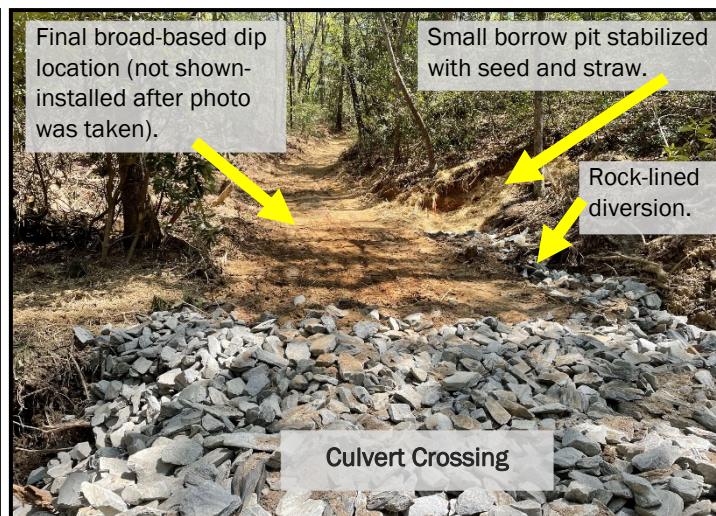
Culvert crossing repair in progress. Headwall has been armored with riprap while additional stone is still needed for the roadway on top of the geotextile fabric.

The plan consisted of removing debris and vegetative material from the stream where flow was partially obstructed, installing several water bars and/or broad-based dips to divert flow off the trail thereby segmenting long sections into shorter ones, and reinforcing the new culvert crossing. To stabilize the crossing, additional soil was added first to ensure that the corrugated plastic pipe would not be crushed by vehicle traffic. Next, riprap was used in conjunction with geotextile fabric to reinforce the crossing side slopes and road/trail surface.

Fire Rehabilitation: Gator Fire Continued...

Lastly, a small diversion was installed along the approach way to direct water to the downstream side of the crossing and prevent rills from forming on the road surface itself.

In addition to these main efforts, seed and straw (straw matting in high risk locations) was used to encourage vegetative stabilization, and an ephemeral channel which crossed the trail was reinforced using riprap as well. Thanks to the thorough planning, cooperative and helpful landowner and hardworking staff, this project was completed successfully.



Welcome Anthony!

Anthony Moore was promoted to the water quality forester position in Region 3. Anthony began his career with the N.C. Forest Service in 2020 as an assistant county ranger in Jackson County. From there he served as county ranger in Transylvania County and then on to service forester in District 1. Before joining the N.C. Forest Service, he graduated from N.C. State University with an undergraduate degree in forest management and worked for the U.S. Forest Service as well as the state of Washington. Anthony's education and work experience will be valued in his new role. See Anthony's area of coverage on Page 4.

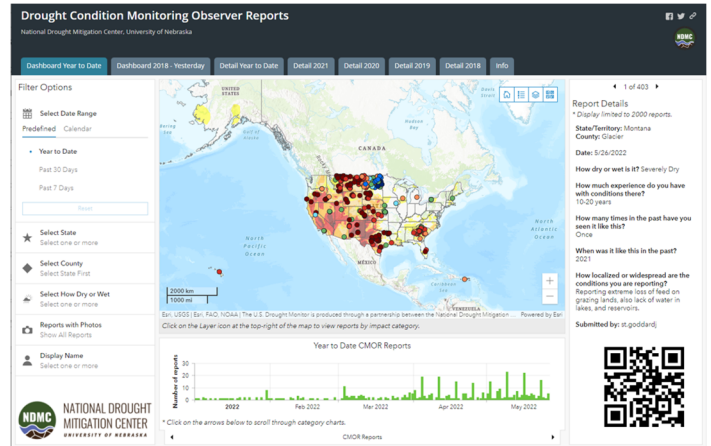


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Report Drought-related Conditions

Did you know that the University of Nebraska maintains a nationwide service for citizens to report drought impact observations? Observations can be reported online or through Survey123. The information reported may be used to help notify those who produce the U.S. drought monitor map each Thursday. The survey contains questions that represent multiple interests such as fire, forest and wildlife impacts. Photos can be uploaded and are displayed on the map viewer (pictured on the right).



For recorded and live webinars related to forestry and/or erosion control, check out:

- [The Forestry & Natural Resources Webinar Portal](#)
- [Source Water Protection Through Forestry Partnerships](#)
- [How the River Flows Podcast](#)
- [N.C. Forest Service BMP Videos](#)

N.C. Forest Service - Water Quality
www.ncforestservation.gov/water_quality/water_quality.htm

Healthy Trees, Healthy Lives
www.healthytreeshealthy lives.org

North Carolina Forest Service

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