



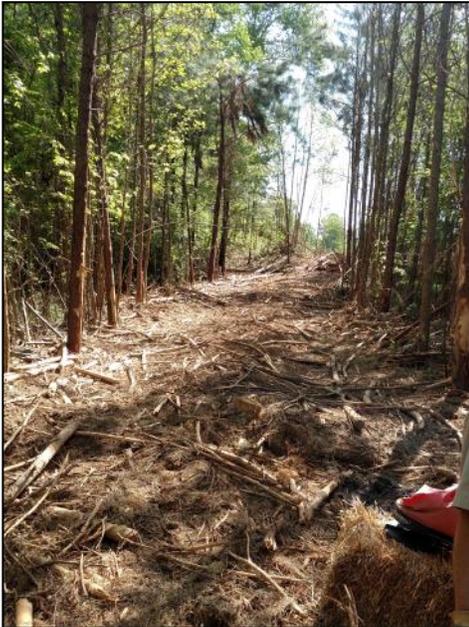
North Carolina Forest Service

A Division of the N.C. Department of Agriculture and Consumer Services

Steve Troxler, Commissioner

BMP Newsletter

Best Management Practices for Water Quality & Soil Conservation



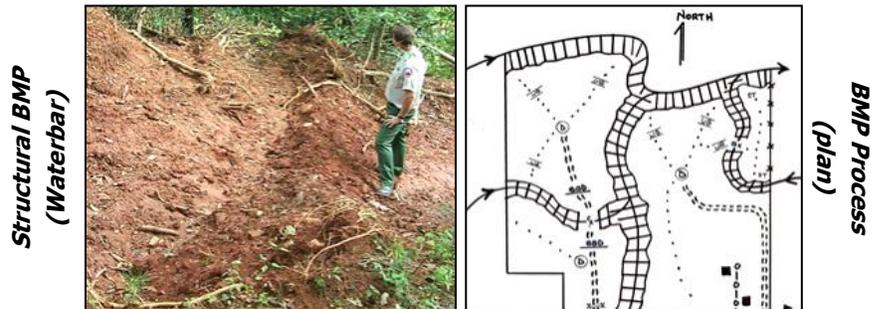
This issue's cover photo was taken in the Piedmont during NC Forestry Association's filming of ProLogger Module 19. The photo displays a slashed approach to a stream crossing where bridge mats were used. At this filming site BMP options and research findings for stream crossing approaches were discussed.

For more information on what a ProLogger is, visit: <https://www.ncforestry.org/prologgers/>

Revisiting the Fundamental Concepts of BMPs

Forestry BMPs represent a subtle balance between water pollution control and the need for these practices to be operationally feasible and practical. BMPs are a management response to a potential water quality problem. They were and are developed by recognizing a potential water quality problem, identifying alternative management solutions, applying selected BMP(s), monitoring them, and maintaining them as needed to ensure that water quality objectives are achieved.

Remember that BMPs can be a structural 'thing' or part of a 'process' that you use to plan and/or conduct an operation.



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State BMP manuals serve as a good general reference for both, especially when the practitioner is new to the industry.

However, BMP manuals are not intended to be exhaustive of all possible options, nor can they guarantee compliance with water quality laws. Research supports BMPs as a suite of individual practices, but the effect of the individual practices vary based on site characteristics (e.g., amount of exposed soil, soil type, rainfall intensity and duration, and slope length and steepness). The overarching purpose of the BMP manual is to provide a practical and applied presentation of the available science. The forestry community is quite confident in the applied BMP effectiveness because we see them working. We understand that each site is unique and BMPs must be tailored on a case-by-case basis to operationally fit the site and landowner objectives.

Are BMPs truly that complicated?

In some cases, yes. In other cases, no. If you have been a student, professional, or frequent observer in the environmental field, it's likely that you have heard the best answer... "It depends". If you read the first page, you may begin to see why. The forestry community does the best with what is known. The N.C. Forest Service, as well as others, provide outreach and education opportunities to discuss BMP topics. Through outreach, education, and memberships to professional organizations, practitioners keep up-to-date with findings and developments in BMP research and are encouraged to request assistance when needed.

In general, BMP *concepts* are not so complicated:

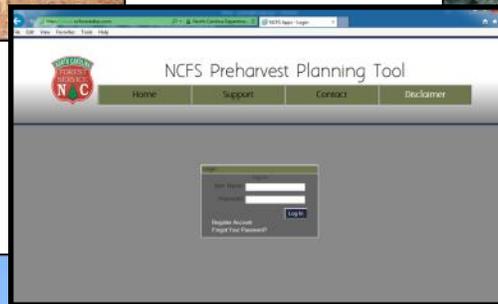
Minimize soil exposure and disturbance



Control runoff in small amounts



Planning!



*Stay away from
stream channels*



Establish vegetation



*Avoid problems in
the first place*

*Use the **FREE**
[Forestry](#)
[Preharvest](#)
[Planning Tool](#)*

However, when you introduce the complexity of the site, operation capability, and limited funds to address potential water quality issues, the BMP decision process becomes more complicated. Striking the 'best' balance between economic, social, and environmental values plays a significant role in why BMPs may be perceived as a complicated topic.

Would more intense storm events change forestry BMP recommendations?

Recently, the N.C. Forest Service attended several meetings where one of the topics of discussion was, 'are the current BMP recommendations sufficient enough to withstand more frequent intense rainfall events?'

You guessed it...it depends. Unfortunately, the question leads to many others and isn't easily answered in a newsletter article. First, remember that BMPs can be a structural 'thing' or part of a 'process' that you use to plan and/or conduct an operation. There are certainly structural BMPs that could be modified, such as spacing between waterbars or culvert sizing. Past applied research and experience of natural resource professionals was used to design North Carolina's forestry BMP recommendations. In order to justify modifications to the 2006 edition of the BMP manual, new research findings in support of changes is necessary.

Logically, a storm with greater intensity will generate more runoff in a shorter period of time, compared to a lower intensity storm with equal duration. However, there are examples of sites that show increased BMP complexity without significant reductions in sediment delivery. For example, in a rainfall simulation study measuring sediment delivery from increasing levels of BMPs and rainfall intensity, Morris and others observed similar levels of sediment delivery through all levels of BMPs for their panel bridge pictured below.



Photos above: Increasing levels of BMPs (left to right) for a wooden panel bridge in a rainfall simulation study measuring sediment delivery (citation at the bottom of page).

Regardless of whether or not more intense rainfall events will occur, the forestry community needs to continue to document and share experiences of BMP applications across a variety of sites under differing management objectives and conditions. Perhaps the future direction of improving BMP recommendations involves beginning a library of site specific BMP success and failure examples through time.

Morris, B.C., M.C. Bolding, W.M. Aust, K.J. McGuire, E.B. Schilling, and J. Sullivan. 2016. Differing levels of forestry best management practices at stream crossing structures affect sediment delivery and installation costs. Water. 8(3): 92.

Western Region Events

Upcoming Events

Aug. 13-16 @ Asheville,
[Ecostream Conference](#)
 Sept. 11 & 12 @ Marion,
[ProLogger Base Course](#)
 Sept. 11-13 @ Charlotte,
[2018 GROW in Charlotte](#)

Piedmont Region Events

Upcoming Events

July 19 @ Winston-Salem,
[2018 GROW in Piedmont Triad Area](#)
 July 31 & Aug. 1 @ Raleigh,
[Aquatic Plants Workshop](#)
 Aug. 30 @ Raleigh
[NC Reg. Foresters Exam](#)

Eastern Region Events

Upcoming Events

July 20 & 21 @ Weldon,
[Sustainable Forestry and Land Retention Project Forestry Conference](#)
 Aug. 16 @ Fayetteville,
[2018 GROW in Fayetteville](#)



John Williams joined the NCFS as a Water Quality Forester in the western mountains Region (Districts 1 & 9). He brings the latest and greatest knowledge as a recent graduate from N.C. State University. We are very pleased to have John as one of our Water Quality Foresters!

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North Carolina Forest Service

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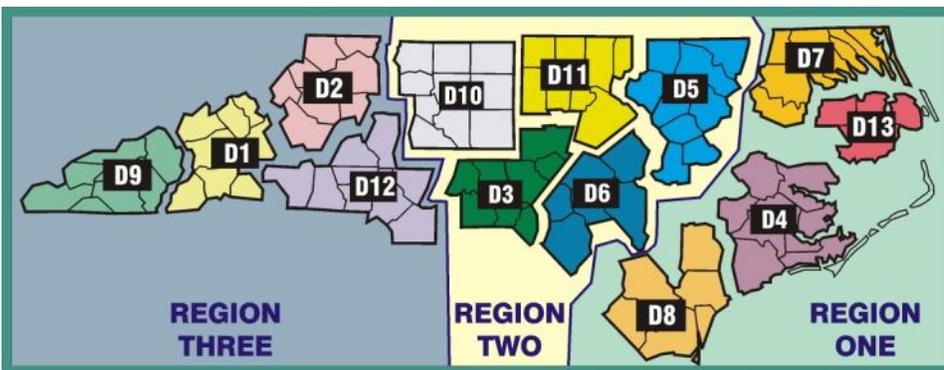
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Western Region

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Southern Piedmont (D3, D6, D10 [South of I-40])
 Matt Vincett: 910-334-0025

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Southern Coastal Plain
 (D4 [-Beaufort and Pitt], D8):
 Paul Mowrey: 252-286-0862