



North Carolina Forest Service

An agency of the N.C. Department of Agriculture & Consumer Services

BMP Newsletter

Best Management Practices for Water Quality & Soil Conservation



This month's cover photo was taken on the Hill Demonstration Forest in Durham County back in 2011. It sets the stage for this issue's BMP topic, "Protecting Soil Resources". This is an excellent example of using woody debris to reduce soil impacts along skid trails.

Protecting Soil Resources

The quality of the soil influences the productivity of the land. This is a fundamental concept that most people grasp, however, there is more to soil than just growing trees...forest soils influence:

- ⇒ Movement and exchange of water and nutrients
- ⇒ Atmosphere by absorbing and releasing gases
- ⇒ Provide habitat for soil organisms that make many of the chemical exchanges possible

Forest operations have the potential to negatively impact soil primarily through rutting and erosion. The range of disturbance can be minor to major depending on site characteristics, timing of the operation, and traffic frequency and weight. Researchers have shown that sites with finer soil texture, greater soil water content, and more frequent and heavy traffic tend to be more susceptible to soil disturbance. However, when BMPs are implemented and effective, forest management is sustainable!

In some cases, heavily rutted sites can be fixed through mechanical site preparation. However, having to do so reduces the profits gained from the timber harvest. Which tract do you think will be less costly to replant?

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Left photo shows an example of a harvest that protected soil resources by following Best Management Practices (note ample woody debris in the general harvest area and shrub-like vegetation in the streamside management zone). Right photo shows a different harvest site that needed additional site preparation to improve soil aeration. In addition to mechanical site prep, the right photo is at a higher risk for an FPG violation...look at the bare soil differences between pictures.

Setting Yourself Up for Success

Identify and summarize site characteristics through a process called **preharvest planning**. Preharvest planning is the first step to help you conserve soil and protect water resources. The 2006 N.C. BMP manual provides an 11-step planning process to assist you in planning for your harvest site (Page 33).

The N.C. Forest Service now offers a **FREE** online planning tool called the "[Forest Preharvest Planning Tool](#)" (FPPT). The FPPT allows users to create maps and plan forest operations anywhere in North Carolina. Users can identify areas of concern and potential soil limitations. Additionally, users can draw operational features such as skid trails, log decks, and streamside management zones, otopop of topographic and aerial maps. This tool incorporates several commonly used planning aids into one program and will be continually improved upon as we receive feedback from our users.

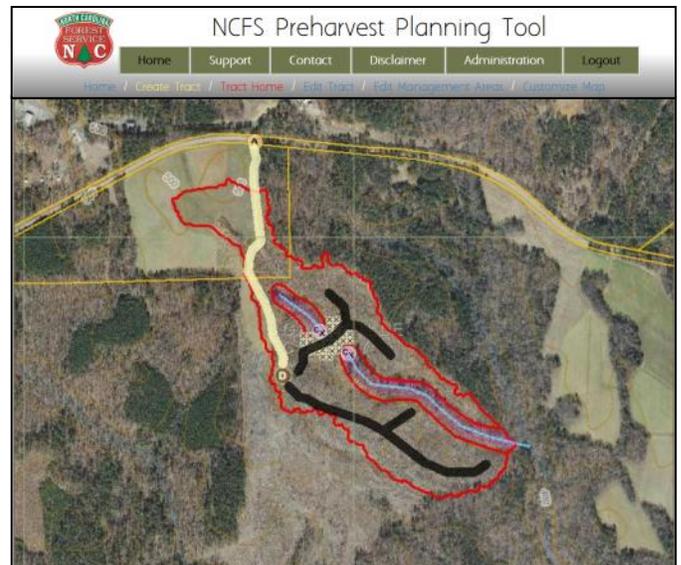
Check it out on our website:
<https://www.ncforestatlas.com>.

Pictured on the right is an example of the FPPT. Note this is one of several types of maps that can be produced.

As usual, N.C. Forest Service's county rangers and foresters can help with preharvest plans! Find out who your County Ranger is by visiting the N.C. Forest Service's web page:

http://www.ncforestservice.gov/contacts/contacts_main.htm.

If you have a group of 25 or more people that would like an in-person demonstration of the tool, contact Alan Coats at 919-857-4855 or alan.coats@ncagr.gov to make arrangements. N.C. Forest Service staff can bring the demonstration hardware to your location and help your group get started with online preharvest planning.



[Stay tuned to N.C. Forest Service's](#)

[Hot Topics](#)

[for upcoming events and products](#)

Western Region

What is the cost of N.C. Forest Services' recommended grass seed in the Western Region?

Estimating BMP material costs during preharvest planning can help estimate the profitability of timber harvests. However, folks may not be aware of how much the recommended seed costs in your area.

Grass seed is a frequently used BMP to stabilize cutslopes, fillslopes, stream crossings, and other unstable ground. Below we put together a table of grass seed application mixes and rates from the BMP manual (page 137) and added an average cost per acre column. Values assigned to the cost column were based on phone inquiries of farm supply stores and other retail stores in the Western Region of North Carolina (sample size = 15).

Upcoming Events

April 19 online webinar
[Southern Pine Beetle Biology, Ecology, and Management](#)

May 4 @ Waynesville:
[NC Wildlife Action Plan & Web-based Spatial Modeling Tools Workshop.](#)
 Contact Cindy Carr, NC Wildlife Resources
 Commission:
 919-707-0227.

June 12+13+14 @ Greenville, South Carolina
[2017 NCASI Southern Regional Meeting](#)
 Contact Tracy Stubbs:
 352-244-0900

	Application Mixes	Rate	Average Cost (\$/ac)
Spring	Creeping Red Fescue	20 lbs/ac	\$76.50
	Red Clover	10 lbs/ac	
	Oats	1-2 bags/ac	
Summer	German Foxtail	25 lbs/ac	\$23.66
	or		
	Browntop Millet	25 lbs/ac	
Early Fall	Creeping Red Fescue	20 lbs/ac	\$71.27
	Red Clover	10 lbs/ac	
	Wheat	1-2 bags/ac	
Late Fall	Creeping Red Fescue	20 lbs/ac	\$130.34
	Annual Ryegrass	10 lbs/ac	
	Rye	1-2 bags/ac	
Winter	Annual Ryegrass	20 lbs/ac	\$15.60

Piedmont Region

Nancy Blackwood is now the Water Quality Forester in the northern Piedmont Region. She brings several years of experience from within the N.C. Forest Service and industry. We are very pleased to have Nancy as one of our Water Quality Foresters!

Cell ph: 336-500-3661



What is the cost of N.C. Forest Services' recommended grass seed in the Piedmont Region?

The table below shows grass seed application mixes and rates from the BMP manual (page 137) and an average cost per acre.

	Application Mixes	Rate	Average Cost (\$/ac)
Spring	Creeping Red Fescue	20 lbs/ac	\$71.60
	Red Clover	10 lbs/ac	
	Oats	1-2 bags/ac	
Summer	German Foxtail	25 lbs/ac	\$20.39
	or Browntop Millet	25 lbs/ac	
Early Fall	Creeping Red Fescue	20 lbs/ac	\$69.46
	Red Clover	10 lbs/ac	
	Wheat	1-2 bags/ac	
Late Fall	Creeping Red Fescue	20 lbs/ac	\$128.26
	Annual Ryegrass	10 lbs/ac	
	Rye	1-2 bags/ac	
Winter	Annual Ryegrass	20 lbs/ac	\$13.50

Upcoming Events

April 19 online webinar
[Southern Pine Beetle Biology, Ecology, and Management](#)

APRIL 21 @ Salisbury
 May 12 @ Elkin
 June 15 @ Raleigh
[NC Wildlife Action Plan & Web-based Spatial Modeling Tools Workshop](#).
 Contact Cindy Carr, NC Wildlife Resources
 Commission: 919-707-0227.

MAY 2 @ Raleigh:
 Forestry Day at the Legislature.
 Contact [North Carolina Forestry Association](#):
 1-800-231-7723.

May 24+25 @ Troy:
[ProLogger Base Course](#).
 Contact North Carolina Forestry Association:
 1-800-231-7723.

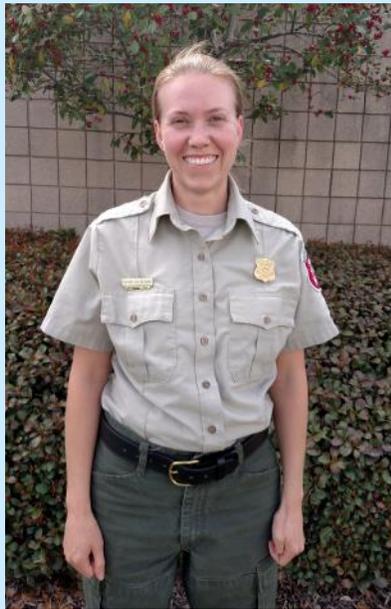
June 12+13+14 @ Greenville, South Carolina
[2017 NCASI Southern Regional Meeting](#)
 Contact Tracy Stubbs:
 352-244-0900

Values assigned to the cost column were based on phone inquiries of farm supply stores and other retail stores in the Piedmont Region of North Carolina (sample size = 25).

Eastern Region

Cathy Gilkeson is now the Water Quality Forester in the northern Coastal Plain Region. She brings several years of experience working with the forest industry in land management and harvesting operations. We are very please to have Cathy as one of our Water Quality Foresters!

Cell ph: 252-286-0881



Upcoming Events

APRIL 5 @ Williamston:
[NC Wildlife Action Plan & Web-based Spatial Modeling Tools Workshop.](#)

Contact Cindy Carr, NC Wildlife Resources Commission:
 919-707-0227.

April 19 online webinar
[Southern Pine Beetle Biology, Ecology, and Management](#)

May 2 @ Kenansville:
[N.C. Forest Service Water Quality Refresher Workshop:](#)

Under Hot Topics
 Contact Tom Gerow:
 919-857-4824

June 12+13+14 @ Greenville, South Carolina
[2017 NCASI Southern Regional Meeting](#)

Contact Tracy Stubbs:
 352-244-0900

What is the cost of N.C. Forest Services' recommended grass seed in the Eastern Region?

	Application Mixes	Rate	Average Cost (\$/ac)
Spring	Creeping Red Fescue	20 lbs/ac	\$67.54
	Red Clover	10 lbs/ac	
	Oats	1-2 bags/ac	
Summer	German Foxtail or	25 lbs/ac	\$20.50
	Browntop Millet	25 lbs/ac	
Early Fall	Creeping Red Fescue	20 lbs/ac	\$80.44
	Red Clover	10 lbs/ac	
	Wheat	1-2 bags/ac	
Late Fall	Creeping Red Fescue	20 lbs/ac	\$140.33
	Annual Ryegrass	10 lbs/ac	
	Rye	1-2 bags/ac	
Winter	Annual Ryegrass	20 lbs/ac	\$14.71

The table to the left shows grass seed application mixes and rates from the BMP manual (page 137) and an average cost per acre. Values assigned to the cost column were based on phone inquiries of farm supply stores and other retail stores in the Coastal Plain Region of North Carolina (sample size = 15).

North Carolina Forest Service

WATER RESOURCES BRANCH
1616 Mail Service Center, Raleigh, NC. 27699-1600



Protect, Manage and Grow Your Forest

www.ncforestservice.gov

Purchase NCFS Forest Tree Seedlings

www.buynctrees.com

NCDA&CS Agricultural Services

www.ncagr.gov

Keep Your Home Safe From Wildfire

www.ncfirewise.org

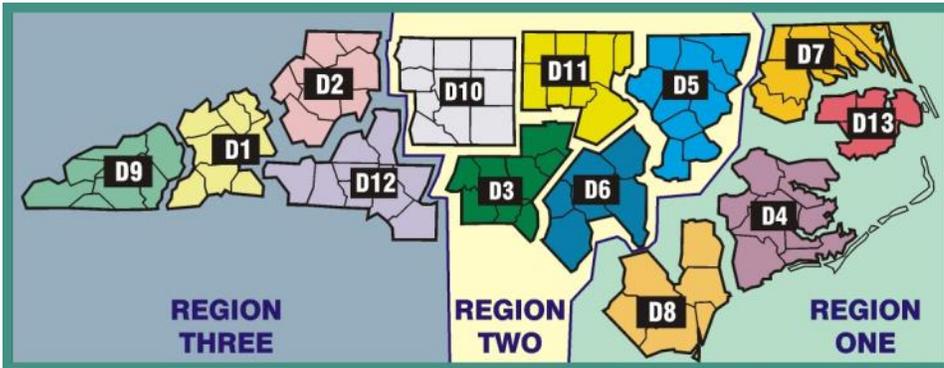
Go Out and Learn in the Forest

www.ncesf.org

Locate North Carolina Farm Products

www.ncfarmfresh.com

www.gottobenc.com



Western Region Water Quality Foresters

Western Mountains (D9, D1):
[vacant]
Office: 828-665-8688 (interim)

Foothills (D2, D12):
[vacant]
Office: 828-665-8688 (interim)

Piedmont Region Water Quality Foresters

Northern Piedmont (D5, D10, D11 [North of I-40])
Nancy Blackwood: 336-500-3661

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

Eastern Region Water Quality Foresters

Northern Coastal Plain
(D7, D13, +Beaufort and Pitt):
Cathy Gilkeson: 252-286-0881

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

What's Wrong With This Picture?

What are some problems with this waterbar?

- ⊗ This waterbar was constructed completely across the trail, but additional traffic has worn down the hump and filled in the trench.
- ⊗ No longer 'tied in' to the adjacent site/cutslope
- ⊗ Lacks soil stabilization.
- ⊗ There is only one waterbar along the 150 ft stretch of trail with a 22 percent grade. There should be at least four waterbars. See page 51 and 53-55 in the BMP manual for more information on waterbar spacing.



Remember

Waterbars are usually used when closing off, or 'retiring' skid trails and roads.

Simply piling soil on the trail or road surface IS NOT the same as installing a waterbar.