



## Culvert corner

These pictures show examples of how to protect the inlet and outlet of a culvert with a proper headwall and end wall.

**A.** Photo courtesy of U.S. Forest Service, EPA and Center for Dirt and Gravel Road Studies



**B.** Photo courtesy of U.S. Forest Service, EPA and Center for Dirt and Gravel Road Studies



**C.** Photo courtesy of U.S. Forest Service, EPA and Center for Dirt and Gravel Road Studies



## Inside this issue:

Make your forestry operation more appealing to the public eye 1

New hire - Duane Truslow 1

What's wrong with this picture? 2

It's raining, it's pouring 2

Forest management site prep 3

Terminology today 4

NCFS water quality forester contacts 4

# BMP Newsletter

Best Management Practices for Water Quality & Soil Conservation

## Make your forestry operation more appealing to the public eye

Forestry has a specific regulation for access road entrances ([FPG .0204](#)) to prevent sedimentation into streams. There are several BMP options for minimizing the amount of dirt reaching public roads. Utilize rock, stone, wooden mats or other suitable materials for a distance of at least 50 feet from public road if soils are muddy, wet or tacky. If you begin to see excessive mud on the road, clean it up using a shovel and/or broom.

In addition to safety and water quality concerns, it's a good idea to use BMPs for road entrances to maintain a good public appearance. A clean road entrance contributes to a positive perception and demonstrates the quality of work and degree of environmental protection.

When operations are conducted under dry soil conditions, and road entrances are located on higher ground with short roads, the access road may not need additional cover BMPs such as wooden mats or gravel.



In some wet soils, additional cover BMPs may be necessary to keep clean and accessible entrances (see left photo for a good example of using mats to minimize mud on the road).



## New hire - Duane Truslow

We are pleased to announce Duane Truslow as the division's new watershed and conservation staff forester. He is a Virginia Tech alumnus with a bachelor's degree in forestry. Recently, for more than 10 years, he was the district forester for NCFS District 2. Before that, he was an assistant district forester and water quality forester for NCFS District 8. Please join us in welcoming Duane to his new role. He can be reached at 828-726-7495 or [duane.truslow@ncagr.gov](mailto:duane.truslow@ncagr.gov).



### What's wrong with this picture?

Still think erosion isn't a big deal in the Coastal Plain? What are some problems with this haul road?

- ◇ Lack of cross-drainage culverts.
- ◇ Lack of monitoring road and ditch conditions.



Changes in land use upstream increased flashiness to the adjacent stream system. While the visible sediment did not reach the stream, it was deposited into a swampy area. Lesson to be learned: continue periodic monitoring of haul roads for issues or needs. Be aware of what is happening in your watershed.

### FPG Spotlight of the Quarter 02 NCAC 60C .0206 Pesticide Application

Remember this FPG when conducting your site prep spraying operations.

Application of pesticides shall be limited to those labeled for that intended use, shall be used in accordance with labeling and rules adopted by the N.C. Pesticide Board as set forth in 02 NCAC 09L .1005, Restricted Areas, and applied in a manner to prevent adverse impacts on water quality.

*History Note: Authority G.S. 113A-52.1; 143-214.1; 143-458;*

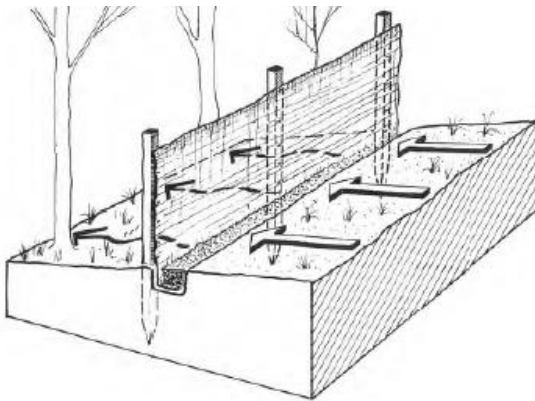
*Eff. January 1, 1990; Transferred from 15A NCAC 011.0206 Eff. April 1, 2014; Readopted Eff. April 1, 2018*

## It's raining, it's pouring...

Tips and tricks on how to slow the water down and spread it out.

### Use silt fence

Silt fence is a geotextile, or fabric, that is supported with stakes with the bottom partially buried into the ground used for temporarily capturing runoff. Utilizing a silt fence is most effective for temporarily capturing sediment and delaying runoff across the ground surface before it reaches a channel, or forms gullies and erosion trenches in the land. However, silt fence cannot effectively capture mass movement of sediment or runoff for an extended period of time.

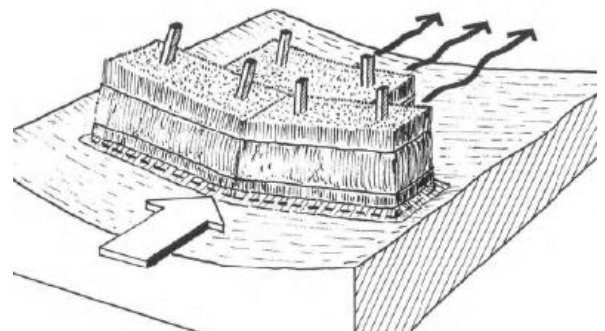


Silt fencing may be useful to capture sediment in areas of exposed bare soil until vegetation can be established. Due to the natural roughness and uneven terrain on forestry job sites, a silt fence can be very difficult to correctly install and remain effective.

### Use straw bales

Straw bales, or a bale of other natural fibers, can be a low-cost, effective tool to slow runoff and capture sediment. Bales are often better than silt fence or brush barriers since they can conform better to the ground surface.

Bales can be placed around the perimeter of an area with exposed soil or across the pathway of runoff flow. The bales will help control the runoff and act as a sediment filter. However, since they are natural fibers, the bales will eventually decompose and break down. As a result, they should be used for temporary runoff capture and control.





## Forest management site prep

It's the time of year when many forest managers are thinking about site prep and getting harvested tracts ready for the winter tree planting season. Keep the basics of FPGs and BMPs in mind when planning your site prep. Here is a quick review for rules related to site prep and forest management.

### Forest Practices Guidelines Related to Water Quality (FPGs)

There are nine performance standards for forestry operations that if followed, provide for exemption from the permitting requirements of the N.C. Sedimentation Pollution Control Act.

### North Carolina General Statute 77-13 and General Statute 77-14

Prohibits obstructing streams, waterways and ditches. Review the NCFS [Interpretive Guidance Letter on Stream and Ditch Obstructions # IGL-2018.1](#)

### DWR/EMC river basin and watershed 'riparian buffer rules'

These rules restrict certain mechanical site prep within the buffer zones. Consult each rule for details. These are found in the back of the [N.C. Forestry BMP Manual](#) beginning with Appendix 8, Page A-8-1.

### North Carolina Dredge and Fill Law

This state law requires permits for discharges of dredged or fill material in certain locations within the 20 CAMA counties. See Chapter 8, Page 88 in the [N.C. Forestry BMP Manual](#).

### U.S. Army Corps of Engineers / EPA Memorandum to the Field Related to the Silviculture Exemption (Mechanical Site Prep BMPs for Pine Plantations on Wetlands of the Southeast).

There are six federally required BMPs for mechanical site prep in wetlands. See Chapter 8, Page 98 in the [N.C. Forestry BMP Manual](#).

### Mechanical site prep and reforestation methods

**Prescribed Fire:** Removes leftover woody debris, opening up the site for seed fall, soil preparation or tree planting.

**Shearing/raking/piling:** Concentrates woody debris into piles, opening up the site for further site prep, reforestation or allowing piles to be burned more easily.

**Mulching/grinding:** Leftover trees and/or debris are shredded and mulched on-site as an alternative to shearing/raking/piling.

**Drum chopping:** Knocks down leftover trees and breaks apart woody debris, accelerating its decomposition and improving conditions for burning or herbicide application.

**Tilling/disking:** Breaks up hardened or compacted soil to improve root growth of new seedlings and infiltration of runoff.

**Bedding:** Creates raised linear beds for tree seedlings to be planted within, usually in wet soils. This method can also help control competing vegetation.

Site prep should accomplish silvicultural objectives while minimizing negative impacts to the soil, organic matter and hydrology. A site prep or 'regen' (regeneration) plan should be developed to outline BMPs and identify sensitive areas to avoid such as streams and waterbodies. More information on site prep is found in the [North Carolina Forestry BMP Field Guide, Ch. 9](#).



Bulldozer with V-blade pushing debris aside for bedding.



Ground level view of a freshly pulled bed.

## Terminology today

### Rolled Erosion Control Products (RECP)

1. **Wattles and logs:** May be used instead of a rock check dam. Their main purpose is to slow runoff, not necessarily to catch sediment.
2. **Matting and blankets:** Used in place of loose straw. These work well on steep slopes such as road or skid trail cut banks, and along ditches or stream channels.

Check dam made with a coir fiber wattle log, on top of excelsior matting



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

[The Forestry & Natural Resources Webinar Portal](#) | [How The River Flows Podcast](#) | [N.C. Forest Service BMP Videos](#)

#### References

[Environmentally Sensitive Road Maintenance Practices For Dirt And Gravel Roads](#)

USFS, EPA and Penn State Center for Dirt and Gravel Road Studies

**N.C. Forest Service - Water Quality**

<https://www.ncagr.gov/divisions/nc-forest-service/water-quality>

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