



# 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 is of a former stream crossing location where temporary bridges were set to allow skidder access. Tops/limbs/slash used on the approach way is an excellent soil stabilization method. When packed down by traffic and left to revegetate, this area poses minimal risk to water quality. Notice the other BMPs in this picture such as the narrow width of the approach way. It's just wide enough for one machine, the vegetation left adjacent to the approach way and stream. This is the streamside management zone.

Learn more about temporary stream crossing BMPs in Chapter 6 of the [North Carolina Forestry BMP manual](#) and [online](#)

### Inside this issue:

Forests are like a sponge	1
Tips and tricks for chemical handling: Equipment Fluids	2
Logging mats	3
Water & Forestry Webinars & Podcasts	4
NCFS Water Quality Forester areas	4

## Forests are like a sponge

The analogy refers to the tendency of forest soil to absorb or infiltrate rainfall and release it to sustain the flow of water into streams between rain events. Even when it isn't raining, water continues to flow in many streams. This flow is called baseflow. Baseflow is critical for supporting the aquatic ecosystems and maintaining a continuous supply of water for human use.

Runoff generated from storms reaches streams much quicker than water infiltrated through soils. As the infiltration capacity of soils is reduced within a watershed, the timing of water reaching the stream becomes quicker and the duration of base flow can become shorter. The result of a watershed with high levels of impermeable surfaces or low infiltration capacity is a flashy stream.

Timber harvest with proper implementation of BMPs can have nominal impacts on a soil's infiltration capacity. This is partly because the tree roots of the severed tree remain in place. These root systems create space for water to be stored in the soil.

A tree's root structure is long-lived and extends deep into the soil. The image on the right can help visualize the potential water storage capability of a single tree. Now imagine an entire stand or watershed!

New tree roots may also become established after cutting as trees will seed into the new opening, extend their roots and compete for space.



Taproot of a longleaf pine stump. Photo by U.S. Forest Service.

## **Tips and tricks for chemical handling: Equipment fluids**

Motor oil, hydraulic fluid, fuel, coolant and lubricants are common equipment fluids used to operate and service logging machinery. Large, powerful machines make harvesting and transporting logs a safer and faster proposition. However, to ensure these fluids remain in the machine and water quality is protected, it's important to follow a few best practices.

### **Designate machine fueling and repair locations on high, level ground.**

The designated area should be at least 100 feet from streams, wetlands, ditches and ephemeral channels if possible.

### **Prepare for spills! Have a spill kit onsite.**

A spill kit may include plugs or clamps to control a hose leak, containers to catch fluid, shovels and absorbent materials to soak up fluids and plastic sheeting or tarp to protect the soil.



### **Inspect equipment for leaks and make repairs promptly.**

Leaky machinery is just as bad for business as it is the environment. Don't let fuel go to waste by putting off maintenance needs.

### **Dispose of waste promptly and properly.**

Store waste securely onsite and remove it from the site regularly.

### **Notify NCDEQ per state law requirements**

Reference your [quick reference field guide 10-1](#) for the notification thresholds.

***Regardless of the amount or size of the spill, clean it up!***



## Logging mats

Wooden mats can help reduce soil compaction and rutting. These mats come in a variety of dimensions. When they are used on a roadway, it is important to have them placed where rutting does not already exist. Placing these wooden mats on top of ruts reduces the ability of distributing the traffic weight across the whole mat. Placing the mat ovetop of ruts subjects them to heavier wear and may cause them to break more easily. When placed in wet sections of road, they can help keep the road trafficable during wet weather.



**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.ncforestsservice.gov/water\\_quality/water\\_quality.htm](http://www.ncforestsservice.gov/water_quality/water_quality.htm)

**Healthy Trees, Healthy Lives**

[www.healthytreeshealthy lives.org](http://www.healthytreeshealthy lives.org)

# North Carolina Forest Service

WATER RESOURCES BRANCH

1616 Mail Service Center. Raleigh, NC. 27699-1600

**Protect, Manage and Grow Your Forest**  
[www.ncforestsservice.gov](http://www.ncforestsservice.gov)

**NCD&CS Agricultural Services**  
[www.ncagr.gov](http://www.ncagr.gov)

**Go Out and Learn in the Forest**  
[www.ncesf.org](http://www.ncesf.org)

**Purchase NCFS Forest Tree Seedlings**  
[www.buynctrees.com](http://www.buynctrees.com)

**Keep Your Home Safe From Wildfire**  
[www.resistwildfirenc.org](http://www.resistwildfirenc.org)

**Locate North Carolina Farm Products**  
[www.ncfarmfresh.com](http://www.ncfarmfresh.com)  
[www.gottobenc.com](http://www.gottobenc.com)

