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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

A section of the restored stream on Claridge State Forest Tree Nursery in Wayne County following Hurricane Matthew. Note the mudline on the vegetation in the background showing the water level at peak flood stage.

Inside this issue:

Special Edition!

When Disasters Strike

In response to flooding and wildfires, this special issue addresses a few questions asked post-disaster regarding forests and water quality. Natural disasters are major adverse events that are a result of natural processes beyond our control. Natural disasters create conditions that often exceed designs of forestry BMPs. Designing many forestry BMPs for such extreme events is often impractical, restrained by equipment limitations, and/or cost prohibitive. However, recognizing and planning your forest operation around predicted weather events and repairing the effects following a natural disaster are key to minimizing long-lasting sources of water pollutants.

***Left**: Bill Swartley, NCFS, as Public Information Officer at the Party Rock fire in Rutherford County. **Right**: Claridge State Forest Tree Nursery in Wayne County, flooded by post-Hurricane Matthew.*

Have forestry questions about recovering from storms and wildfires?

Visit the NCFS website here, view the Burned Area Emergency Response Treatments Catalog here, and Contact your County Forest Ranger here.

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Evaluate and Repair Damaged Access Roads

Natural disasters strike somewhere in the Southeastern US almost annually. Forest managers should plan to assess damages to roads and stream crossings soon after a significant weather event to identify potentially chronic sediment sources.

Some questions to consider may include:

- Are stream crossings and cross drains free of debris and allowing adequate drainage?
- Are culvert stream crossings and cross drains covered with adequate fill material and stabilized?
- Are stream crossing headwalls stabilized with vegetation or rock?
- Are stream crossing approachways stable and unlikely to contribute sediment to the stream?
- Are water control structures functioning appropriately and directing water away from riparian areas?

Harvesting Storm Damaged Timber within SMZs

- Keep in mind that the water quality rules still apply
  - ⇒ Follow the Forest Practice Guidelines Related to Water Quality (FPGs) [Leaflet #WQ1]
  - ⇒ Follow the two state laws that prohibit obstructing streams, ditches, or other drainages. [G.S. 77-13 & G.S. 77-14]
  - ⇒ Follow the Riparian Buffer Rules (Neuse, Tar-Pamlico, and Catawba river basins and Randleman Lake, Goose Creek, and Jordan Lake water supply watersheds).
  - ⇒ Refer to the BMP manual for recommendations.
  - ⇒ Follow BMPs for minimizing soil disturbance and avoid crossing the stream where possible (pages 44-46).

Windthrown tree within the streamside management zone

- If salvaged timber is to be used for firewood, remember that a good rule of thumb is to burn wood within a 50 mile radius of its origin. Visit NCFS forest health for additional information.

Wildfires

Tips for Loggers in High-Fire-Risk Areas

Careless debris burning is the top cause of wildfires in North Carolina. The NCFS encourages residents considering debris burning to contact their local county forest ranger. Loggers should follow these tips to protect property and prevent wildfires:

- Be careful with open flame, welding torch and metal cutting!
  - ⇒ Restrict sparks from igniting brush; wet-down the immediate area before torching or cutting; keep a charged water hose and water supply on-hand.
- Limit use of "warming fires." Make sure any fire is fully contained (metal ring or rock ring on bare dirt):
  - ⇒ Watch for flying sparks and embers; install a metal screen on top of fire to squelch sparks.
- Be sure that ashes/coals are dead-cold-out before you dump them, or leave the site.
  - ⇒ Feel the ashes/coals with the back of your hand; if you feel any warmth, do not dump them! Soak ashes/coals with water.
- Keep debris cleaned out from machines to avoid equipment fires; any fire will rapidly spread.
- Avoid parking hot machinery over tall, dry grass or vegetation.

Fireline Repair

Slow it down & spread it out

There is no exemption from FPG's for fire control

- ⇒ Try to prevent accelerated soil erosion that has the potential to cause sediment to wash into the stream.
- ⇒ Restrain visible sediment from reaching the stream.
- ⇒ Remove temporary stream crossings and stabilize the banks and approachways.
- ⇒ Re-contour firelines near streams.
  - Knock down berms, smooth over disturbed soils, backfill trenches, & prevent concentrated runoff.

Bottomline goal is to prevent, manage, and control sedimentation and erosion runoff.

Flooding

Before the Flood

If a hurricane or tropical storm is expected to produce heavy rains and flooding, plan accordingly:

- Be safe! Safety first.
- Plan to move machinery to higher ground.
  - ⇒ It only takes one foot of flowing water to move a small car.
- Plan to move and secure fuel and lubricant containers so that they are out of flood zone. At a minimum, move secured containers to higher ground.
- Stabilize loose or easily erodible soils.

After the Flood

Evaluate sites for damages, especially roads and stream crossings, and repair accordingly.

If possible, avoid heavy equipment operations when wet site conditions exist. However, wet weather can last for months in the south, and complete avoidance may be unrealistic.

If it is necessary to continue operating in wet conditions, minimize site impacts by:

Above: Pulpwood laid down as a skidding surface to minimize soil disturbance.

- Applying slash atop skid trails to prevent rutting.
- Use low-ground-pressure logging equipment
  - ⇒ Dual tires, tracked machines, tire cleats, etc.
- Log on relatively drier soils that have good drainage.
- Avoid logging in flooded tracts, or operating in standing water.

Right: Dual-tire skidder used to disperse the weight of the skidder.

North Carolina Forest Service

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

got to be NC FOREST PRODUCTS

Protect, Manage and Grow Your Forest
www.ncforestservice.gov
Purchase NCFS Forest Tree Seedlings
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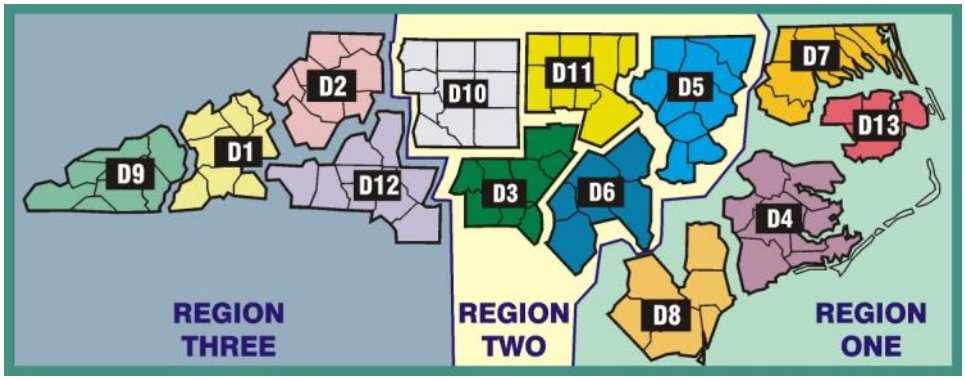
NCDA&CS Agricultural Services
www.ncagr.gov
Keep Your Home Safe From Wildfire
www.ncfirewise.org
Go Out and Learn in the Forest
www.ncesf.org
Locate North Carolina Farm Products
www.ncfarmfresh.com
www.gottobenc.com



Western Region Water Quality Foresters

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

Foothills (D2, D12):
Beth Plummer: 704-616-0747

Piedmont Region Water Quality Foresters

Northern Piedmont (D10, D11, D5):
[vacant]
Office: 919-542-1515 (interim)

Southern Piedmont (D3, D6):
Matt Vincett: 910-334-0025

Eastern Region Water Quality Foresters

Northern Coastal Plain (D7, D13):
[vacant]
Office: 252-520-2402 (interim)

Southern Coastal Plain (D8, D4):
Paul Mowrey: 252-520-2402

UPCOMING EVENTS

March 15-16 @ Raleigh
WRRI Annual Conference
Contact NC-WRRI: 919-515-2815.

TBD @ various locations across NC: Water Quality Refresher Workshops (Stay Tuned).

February 1-3 @ Raleigh
Southern Farm Show
Contact 704-376-6594.

Events Outside North Carolina
January 25-27 @ Charlottesville, VA: ApSAF Winter Meeting
February 21-24 @ Atlanta, GA: 2017 International Erosion Control Association Annual Conference
March 14-16 @ Blacksburg, VA: 19th Biennial Southern Silvicultural Research Conference

What's Wrong With This Picture?

This is a view from a closed-out stream crossing looking upslope.

Notice that there are not one, not two, but three skid trails joining just before the stream crossing.

This is an example of not minimizing the number and extent of skid trials.