



BMP Newsletter

Best Management Practices for Water Quality & Soil Conservation

Culvert corner

Can you guess what is wrong with each of the three culvert pictures?
Answer on Page 4!

A. Photo courtesy of U.S. Forest Service



B. Photo courtesy of N.C. Forest Service



C. Photo courtesy of Steve Coupal



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Preharvest planning tool — tips & tricks

One of the most important BMPs is being prepared and having a plan before a timber harvest begins. A preharvest plan includes information about sensitive areas on a tract and practices needed to reduce impacts on the natural environment.

To help with this, the NCFS created a Forest Preharvest Planning Tool (FPPT). This is a free online tool that allows users to create customizable maps and site specific reports.

There is a user guide and tutorial available online and NCFS Water Resources Branch staff can help answer your questions and assist with troubleshooting. If you have a group and would like an in-person demonstration, contact us.

The tutorials and guides are meant to be easy to understand, but here are some common tips and tricks for frequent questions users run into.

1. I've made an account—now what?

- An email will be sent to the support team who will review your request and grant your account access to the application.

2. What if I don't have an NCID? Can I still make an account?

- Yes! When you register an account on the homepage, enter your email as your username. DO NOT click the box next to "This is my NCID account" and you should be good to go.

3. Help! The report isn't generating or opening up when I click it.

- Please reach out if you are having this problem, however some pop-up blockers prevent the report from generating. If you would like, you can turn off the pop up blocker and see if this resolves the issue.

4. What browser do I use?

- Sometimes, certain browsers have individual settings that can cause the tool to gum up. If you are running into problems with the web page not loading, try a different browser. Most users have found success with Microsoft Edge.

5. Do I still need to look at the county soil or topographic map?

- Yes, applicable topographic and county soil maps will still need to be reviewed if the tract is found within a watershed subject to a riparian buffer rule.

To access the preharvest planning tool click [here](#) and for more information and tutorials click [here](#). Happy planning!

Analyze this picture

This stream crossing has steel bridgemats as a base with curb logs on the sides to catch debris and soil. If you look closely, you will see a layer of soil that has accumulated on the top of the mats. Looking at the terrain on both sides of your crossing and taking steps to cover the approaches with debris would be key to preventing this scenario in the future. It's a great idea to periodically inspect crossings and take action to provide for safety while protecting water quality from runoff, debris, soil or other pollutants.



Streamside management zones on perennial streams and wetlands

Streamside management zones (SMZ) around perennial streams can help reduce erosion, prevent sedimentation, support wildlife and provide other additional benefits.

Perennial streams, which flow more than 90% of the year, are required to have a SMZ per the forest practices guidelines (FPGs) of the North Carolina Sedimentation Pollution Control Act of 1973. Perennial streams eventually flow into rivers and rivers to oceans. This direct visible surface connection necessitates action to reduce water quality impacts so that people downstream have suitable water. This is partially accomplished by SMZs on forestry sites. Since the impacts of forestry operations can be compatible with water quality objectives, exemptions from otherwise necessary permitting is afforded to compliant forestry operations. Click [here](#) for the FPG standard for SMZs in North Carolina.



Streamside management zone on a perennial stream.



An eastern North Carolina wetland. Photo courtesy of NC Wetlands.

Wetlands are also protected by laws (e.g., Clean Water Act, Coastal Area Management Act, and others). These regulations help limit human-caused damage to wetland functions and benefits. Wetlands that contain commercially valuable timber can be harvested.

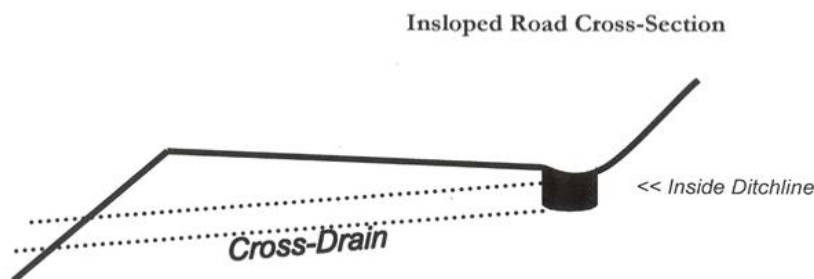
Most tree species cannot germinate or establish underwater, and therefore, forested wetlands were dry for certain periods to allow for tree establishment. Harvesting trees from a forested wetland does not convert them to uplands or result in the loss of wetlands, provided the site's hydrology is not significantly altered ([Slye et al., 2020](#)). While forested wetlands

often do not require designated SMZs, careful planning is essential to prevent long-term impacts. When conducted in accordance with best management practices (BMPs), forest harvesting in wetlands can promote early successional stages and support long-term forest health and sustainability ([King and Schlossberg, 2014](#)).

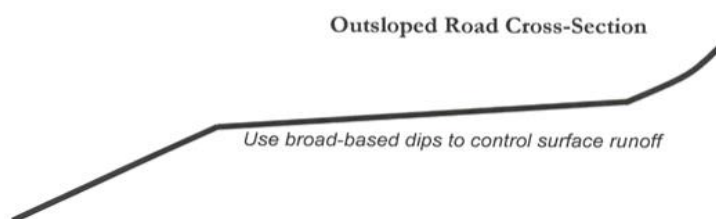
Road templates

The degree to which a road surface is tilted or angled influences runoff. Road templates refer to the general shape of the road prism and driving surface. There are three basic types of forest road surfaces: insloped, outsloped and crowned.

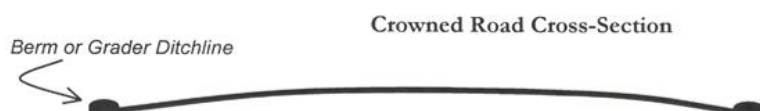
Insloping allows runoff to drain into an inside ditchline. With the ditchline between the uphill side/cut bank and the roadbed, the ditchline must be drained with a turnout or cross-drain.



Outsloping allows runoff to drain from the road surface towards the outside (downslope) edge of the road where the runoff can be controlled or allowed to absorb into the adjacent ground.



Crowning creates a slight hump across the road's cross section by having the centerline of the road higher than both roadside edges. If a road is to be crowned, other BMP tools to collect and/or capture runoff may be needed. Crowning is usually used on wider, permanent access roads or in flat lands with a ditch on at least one side to collect runoff.



Culvert corner — answers

A. This culvert has inlet damage, blocked by a large rock reducing its flow capacity. Protecting the culvert inlet and outlet with rock, riprap or other material (excluding asphalt) is one of the many BMP recommendations for culverts.

B. This culvert has a large “drop height” at the outlet. Culverts should be set to allow flow without a drop height. This can help prevent scouring and increase the culverts stability. For permanent crossings such as this, embed 10-20% of the culvert diameter into the stream bottom.

C. A beaver dam has plugged this culvert! A recommended practice in this scenario is to keep a record of beaver problems and set these sites as high priority for cleaning in advance of storms. A secondary flow bypass may be useful and potentially discourage beaver dam construction.

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

King, D.I., & Schlossberg, S. (2014). [Synthesis of the conservation value of the early-successional stage in forests of eastern North America](#). *Forest Ecology and Management*, 324, 186-195.

Slye, J.N., Lang, A.J., & Gerow Jr, T.A. (2020). [A limited rapid assessment of forest regeneration in 24 cypress and tupelo bottomland swamps following clearcutting and shovel logging in the coastal plain of North Carolina](#). *Forests*, 11(8), 854.

N.C. Forest Service - Water Quality

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

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