

Part 8: Wetlands

DISCLAIMER: This section is intended as a quick reference refresher for forestry operators who already have a functional knowledge of the requirements for operating in wetlands. This field guide does not contain all of the laws, rules or guidance for conducting silvicultural activities in wetlands. For more details, reference Chapter 8 of the desktop version of the N.C. Forestry BMP Manual (2021 edition) and its Appendix 10.

Section 404 Permit Exemption

Section 404(f)(1) of the federal Clean Water Act lists activities which are exempt from permitting to dredge material from or discharge into a waters of the U.S. These exemptions include normal farming, silviculture, and ranching activities such as plowing, seeding, cultivating, minor drainage and harvesting for the production of food, fiber, and forest products; and the construction or maintenance of farm roads or forest roads.

To retain the silvicultural exemption in Section 404, forestry activities in wetlands:

- ✓ Must not convert an area of the waters of the U.S. into a use to which it was not previously subject.
- ✓ Must not result in the immediate or gradual conversion of a jurisdictional wetland to a non-wetland.
- ✓ Must not discharge toxic materials.
- ✓ Must not impair the flow or circulation or reduce the reach of waters of the U.S.

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- ✓ Must comply with the 15 federally required BMPs for roads and skid trails; and follow the 2004 guidance issued by the Corps of Engineers related to forest road construction.
- ✓ Must comply with the six federally required BMPs for mechanical site prep if establishing a pine plantation.

Care must be taken to avoid and minimize wetland disturbance. To qualify for the silvicultural exemptions under Section 404, the activity must be related to the establishment, growth, and harvest of timber and forest products. Owners and operators should avoid undertaking activities that are questionable in relation to silviculture.

Below are some examples of activities in wetlands that likely would require permitting:

- × **Installing a waterfowl impoundment, dike, berm, pond, building, dock, blind, or other structure.**
- × **Constructing a road or stream crossing that is primarily for a non-silvicultural purpose.**
- × **Removing or piling topsoil or stumps in a wetland.**
- × **Ditching, filling, or draining a wetland.**
- × **Installing firebreaks in a wetland for controlled burning that is primarily for wildlife management purposes.**
- × **Clearing wetlands to plant wildlife food plots.**
- × **Altering a stream (damming or channelizing).**
- × **Converting from native forest tree species to non-native species or a different vegetation type.**

BMPs for Timber Harvesting in Wetlands

- Mark sensitive areas where equipment should avoid.
- Avoid using heavy equipment on saturated soil or near waterbodies. Suspend work during flooding.
- Concentrate skidding to the primary skid trails and decks. Avoid randomly dispersed traffic on the site.
- Consider ceasing operations or choosing a better harvest method if a single pass of heavy equipment produces ruts deeper than 12 inches across a significant area of the site beyond the primary skid trails and decks.

BMPs for Shovel Logging

- Minimize the number, width, length, and overall footprint of the shovel skid trails. Keep the skid trail to 1-skidder-width wide. If needed for skidders to pass, install a short, wide section of trail.
- Orient the shovel trails to prevent restriction of expected flood flows that may occur across the harvest area. Install temporary cross drains where needed.
- If the trail must cross a stream, use temporary bridgemats or log stringers. If the trail must go across a coastal marsh, first seek guidance from appropriate agency representatives.
- Build up the shovel trail so heavy equipment travels above the average soil surface. Minimize operation of rubber tired machines off shovel trails.

- Add more trees or logs if the shovel trail begins to sag, sink or break apart.
 - The intent is to avoid 'pumping' action of the soil from each pass of the skidder, which may increase sedimentation and/or turbidity.
- Promptly remove the shovel trail when not needed.
 - The removed logs/trees should be merchandized; or if not usable, scatter the woody material across the site, away from the SMZ.
- Keep the shovel trail at least 60 feet from the SMZ.
- Limit harvesting trees from the SMZ.
 - Full retention of trees in the SMZ can maximize its ability to restrain visible sediment and moderate stream temperature.
 - A fully retained SMZ can also provide a long-term seed source, a wildlife habitat corridor, minimize wind throw potential, and serve as a visual aesthetics screen along the waterway.
- If logging must stop before finishing the harvest, and you wish to keep the shovel trail intact to complete the harvest later, then create gaps in the skid trails if there are identifiable flow-ways, so floodwater can pass through.



Do not excavate new ditches.



Do not obstruct streams, ponds or lakes.

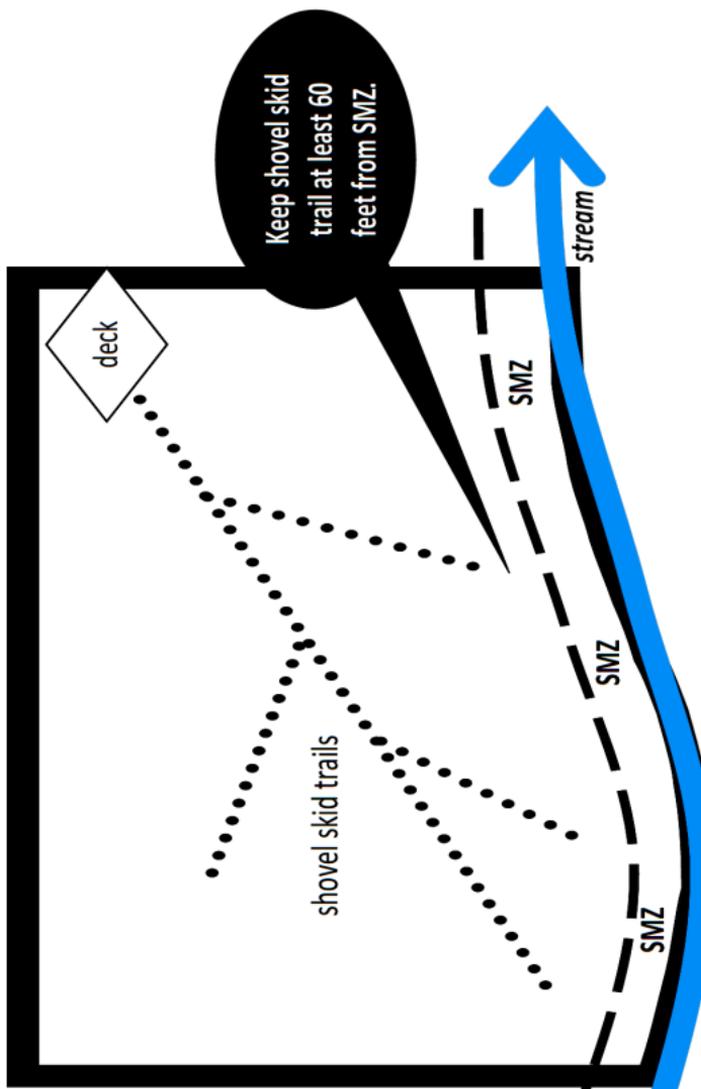


Do not deposit soil atop the shovel skid trail.



Do not excavate stumps or soil.

WETLANDS



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A shovel skid trail for a wetland forest timber harvest.



Side view of a skidder running atop of a shovel skid trail.

Supplemental Forest Management Considerations for Logging in Bottomland Swamps

- Retain some permanent seed source trees distributed across the harvest or small clumps/patches of seed source trees. Favor retention of cypress, tupelo, gum, oak or Atlantic white cedar (juniper).
- To promote stump sprouting (known as coppice), cut the stumps at, or slightly above the normal high water mark. This mark is often seen as a permanent water stain or moss line around the base of the trunk. If the stump is submerged underwater, coppice sprouting may be limited.
- Retain snags (if it is safe) and fallen rotten logs to support recruitment of seedlings on hummocks, and to offer wildlife habitat.
- Work with landowners upstream and downstream to promote natural, seasonal stream flows. Take action to prevent water from impounding upon the harvested area while the site regenerates (Examples: beaver dams, man-made berms or clogged culverts).



Much of this backwater slough was clearcut. Be aware that a “slough”, “run” or “gut” should be treated like a stream if it

- (1) is directly connected to a sound, river or other stream;
- (2) flows at least 30 percent of the year; and
- (3) has a well-defined channel.

In those cases, a SMZ is required. If the slough has perennial water, then adequate shade must be retained.

Forest Roads in Wetlands

Temporary and permanent roads constructed in wetlands for forestry purposes are exempt from Section 404 permitting if they are constructed in accordance with the mandatory 15 BMPs prescribed in the federal regulations.

In North Carolina, forestry roads in wetlands must also:

- ✓ Adhere to the specifications outlined in a 2004 guidance document from the U.S. Army Corps of Engineers.
- ✓ Comply with the FPGs.
- ✓ Meet the permitting exemption eligibility requirements of the state's CAMA rules, and Dredge & Fill Law (if located in a coastal zone county).

15 Federal Mandatory BMPs for Roads and Skid Trails in Wetlands

Construction of roads, skid trails and stream crossings in a wetlands, or waters of the U.S. for the production of forest products does not require a Clean Water Act Section 404 permit if the 15 federal baseline provisions (mandatory BMPs) listed below are followed:

1. Permanent roads (for farming or forestry activities), temporary access roads (for mining, forestry, or farm purposes) and skid trails (for logging) in waters of the U.S. shall be held to the minimum feasible number, width, and total length consistent with the purpose of specific farming, silvicultural or mining operations, and local topographic and climatic conditions.

2. All roads, temporary or permanent, shall be located sufficiently far from streams or other water bodies (except for portions of such roads which must cross water bodies) to minimize discharges of dredged or fill material into waters of the U.S.
3. The road fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows.
4. The fill shall be properly stabilized and maintained during and following construction to prevent erosion.
5. Discharges of dredged or fill material into waters of the United States to construct a road fill shall be made in a manner that minimizes the encroachment of trucks, tractors, bulldozers, or other heavy equipment within waters of the United States (including adjacent wetlands) that lie outside the lateral boundaries of the fill itself.
6. In designing, constructing, and maintaining roads, vegetative disturbance in the waters of the U.S. shall be kept to a minimum.
7. The design, construction and maintenance of the road crossing shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body.
8. Borrow material shall be taken from upland sources whenever feasible.

9. The discharge shall not take, or jeopardize the continued existence of, a threatened or endangered species as defined under the Endangered Species Act, or adversely modify or destroy the critical habitat of such species.
10. Discharges into breeding and nesting areas for migratory waterfowl, spawning areas, and wetlands shall be avoided if practical alternatives exist.
11. The discharge shall not be located in the proximity of a public water supply intake.
12. The discharge shall not occur in areas of concentrated shellfish production.
13. The discharge shall not occur in a component of the National Wild and Scenic River System.
14. The discharge of material shall consist of suitable material free from toxic pollutants in toxic amounts.
15. All temporary fills shall be removed in their entirety and the area restored to its original elevation.

2004 Guidance for Constructing Exempt Forest Roads in Wetlands of NC

That document contains guidance for road planning and generally accepted road design specifications. It may be presumed that maintaining the Section 404 exemption is contingent upon adhering to this guidance document. It is available in Appendix 10 of the BMP Manual, here:



A Note on Borrow Ditches: If a borrow ditch is dug to build a wetland forest road, then that ditch must not directly or indirectly connect to a stream or ditch outlet. The borrow ditch's un-excavated dead end may need to be as much as 150 feet away (or more) from a stream or another ditch, depending on the soil's drainage capacity.



A well done wetland forest road with its overall footprint kept to a minimum. No ditches were dug.



This is not an acceptable wetland forest road. Water is backing up (on right) and the road is not wide enough to support logging trucks. There is not enough groundcover stabilization to minimize soil erosion.



This culvert crossing in a swamp needs stabilization of the newly applied backfill.

Frequent monitoring is needed to remove debris blockages.



This wetland road is in unacceptable condition after logging. Debris must be removed. The road needs reshaping to allow water to pass and groundcover to stabilize the soil.



This rock ford on a wetland road allows water to pass.

Mechanical Site Prep in Wetlands

Mechanical site prep in most pine wetland forests is exempted from Section 404 permitting, as long as federally required BMPs are followed (next page).

However, a Corps of Engineers permit may be needed for site prep in any of these 9 wetland types:

1. Permanently flooded, intermittently exposed, and semi-permanently flooded wetlands.
2. Riverine bottomland hardwood wetlands.
3. Atlantic white cedar swamps.
4. Carolina Bay wetlands.
5. Non-riverine forest wetlands.
6. Low pocosin wetlands.
7. Wet marl forests.
8. Tidal freshwater marshes.
9. Maritime grasslands, shrub swamps, and swamp forests.

For more details, see Appendix 10 of the BMP Manual.

NOTE: The removal of stumps from a wetland (either fresh stumps or old fat lightered pine rosin stumps) may not be an exempt activity under Section 404. You should consult with the Corps of Engineers if you intend to remove stumps in a forested wetland when not associated with construction of a road or log deck.

Six Federal Mandatory BMPs for Mechanical Site Prep in Wetlands

1. Position shear blades or rakes at or near the soil surface and windrow, pile, and otherwise move logs and logging debris by methods that minimize dragging or pushing through the soil to minimize soil disturbance associated with shearing, raking, and moving trees, stumps, brush, and other unwanted vegetation.
2. Conduct activities in such a manner as to avoid excessive soil compaction and maintain soil tilth.
3. Arrange windrows in such a manner as to limit erosion, overland flow, and runoff.
4. Prevent disposal or storage of logs or logging debris in SMZs, to protect water quality.
5. Maintain the natural contour of the site and ensure that activities do not immediately or gradually convert the wetland to a non-wetland.
6. Conduct activities with appropriate water management mechanisms to minimize off-site water quality impacts.

Minor Drainage

There are many factors to assess when evaluating the applicability, need, benefit or effect of installing minor drainage ditches. Carefully review the federal rules, guidance, and N.C. Forestry BMP Manual, and consider discussing your objectives with the U.S. Army Corps of Engineers before starting.

Consider alternative silvicultural prescriptions that do not require minor drainage. Examples include establishing native wetland tree species or using alternative methods for harvesting timber (shovel logging) or site prep (bedding).

The BMPs included here focus on controlling erosion and sedimentation to help comply with the state FPGs.

In addition to these BMPs, review the guidance memo issued by the EPA and Corps of Engineers in July 2020 (see Appendix 10 of the N.C. Forestry BMP Manual and this QR code). That memo includes information about maintaining eligibility for the Section 404 exemptions while maintaining ditches.



BMPs for Installing Minor Drainage

- Conduct excavation and maintenance during periods of relatively dry soil. If the new minor drainage feature is expected to be deeper than 12 inches, or will directly connect to an outlet, then you should first seek advice from the Corps of Engineers.
- Minimize removal of tree stumps. Cut the tree/stump at ground level and retain the stump/rootwad intact to provide anchoring for the channel and to limit soil disturbance.
- When installing new minor drainage, start excavation near the discharge end while leaving a plug of soil in place to serve as a temporary dam in the newly excavated ditch. This soil plug allows sediment to settle out before connecting the new ditch with an existing drainage outlet.
- Deposit excavated material/spoil within 20 feet of its origin (**Note: This is a state of North Carolina rule requirement**).
- Keep spoil piles small with frequent gaps between them to minimize blockage of floodwaters.
- Stabilize the spoil for erosion and sedimentation control.
- After completing new excavation, stabilize exposed soil in the ditch channel and along the ditchbanks for a distance of 50 feet from the outlet, if there is one. Examples include seed and straw, erosion control matting, excelsior/straw wattles, coconut/coir logs, straw/hay bales, hydroseeding and/or check dams.

BMPs for Ditch Maintenance

- Conduct maintenance during periods of relatively dry soil.
- Minimize the excavation or pushing of trees. Cut the tree/stump at ground level and retain the stump/rootwad intact to provide anchoring for the channel and to limit soil disturbance.
- Install temporary check dams in the ditch to allow visible sediment to settle before the ditch outlet, if there is one.
- Only remove accumulated material down to the ditch's original dimension (depth, width, length).
- Deposit excavated spoil material atop existing adjacent roads or on top of old spoil. **(Note: North Carolina rules require that spoil be placed within 20 feet of its origin).**
- Keep spoil piles small with frequent gaps between them to minimize blockage of floodwaters.
- Stabilize the spoil for erosion and sedimentation control.
- After completing maintenance, stabilize exposed soil in the ditch channel and along the ditchbanks for a distance of 50 feet from the outlet. Examples include seed and straw, erosion control matting, excelsior/straw wattles, coconut/coir logs, straw/hay bales, hydroseeding and/or check dams.

Questions about the Section 404 silvicultural exemptions or guidance should be directed to the U.S. Army Corps of Engineers' Wilmington District Office: 910-251-4811.