

Section 10: Water Quality Regulations, Laws and Guidance

FPG

Since 1990, North Carolina has had **mandatory statewide** regulations for forestry activities that were established to protect water quality. These regulations are the Forest Practices Guidelines Related to Water Quality, often referred to as the “FPGs.”

- There are nine (9) performance standards defined within the FPGs.
- To maintain the forestry exemption specified within the North Carolina Sedimentation Pollution Control Act of 1973 (SPCA), all nine (9) of these FPG standards must be in compliance.
- Referral for enforcement action can take place if a violation of a FPG standard is determined and necessary improvements are not performed in a timely manner; some referrals are automatic.

Remember:

*In this field guide, **FPG** notifies you when a FPG rule may apply to the topic being discussed.*

*In this field guide, **RULE** notifies you when a rule or law other than the FPG's may apply to the topic being discussed.*

Citation of the North Carolina Forest Practices Guidelines Related to Water Quality (FPGs): 15A NCAC .011 .0100 - .0209

SECTION .0100 -GENERAL PROVISIONS

15A NCAC 011 .0101 INTRODUCTION AND PURPOSE

(a) Forests are a major contributor to the economy and quality of the environment in North Carolina. Forestry best management practices allow for the production, harvesting, and utilization of forest resources while maintaining satisfactory water quality. The rules in this Subchapter establish performance standards for the protection of water quality. The intent and purpose of these rules is not to cease or obstruct the lawful, proper and responsible use of forest resources. Persons must adhere to the standards related to land disturbing activities in order to retain the forestry exemption provided in the N.C. Sedimentation Pollution Control Act of 1973 as amended in 1989.

(b) The Division of Forest Resources is responsible for the protection and development of forest resources in North Carolina, and has been designated by the Secretary of North Carolina Department of Environment, Health, and Natural Resources as the Division within the Department best able to assist the Secretary in the implementation of these rules.

(c) The Forestry Best Management Practices Manual, published by the Division of Forest Resources in September, 1989, and as amended from time to time,

contains specifications for a variety of practices which may be used to meet the performance standards set forth in this Subchapter. Best Management Practices (BMPs) shall be selected to allow for the variation in weather, topography, soil, and vegetation expected for the site and season. Implementation of these rules shall recognize that extreme and unusual weather can cause reasonable and otherwise adequate application of BMPs to fail to control sedimentation. Where installed BMPs fail, additional and more effective BMPs may be required. This manual and the rules in this Subchapter may be obtained by contacting the Director, Division of Forest Resources, Raleigh, North Carolina.

History Note: Authority G.S. 113-3; 113-8; 113A-52(6);113A-52.1; 143B-10;Eff. January 1, 1990.

15A NCAC 011 .0102 DEFINITIONS

In addition to the terms defined in G.S. 113-44.4 and 113A-52, the following definitions shall apply throughout this Subchapter:

- (1) "Accelerated Erosion" means any increase over the rate of natural erosion, as a result of land-disturbing activities.
- (2) "Access Road" means a temporary or permanent access route.
- (3) "Adverse Impact" as used for pesticides and fertilizers means actions which result in a violation of adopted water quality standards of the Environmental Management Commission Sections 15A NCAC 2B .0200 - Classifications and Water Quality Standards Applicable to Surface Waters of North Carolina, 15A NCAC 2L .0200 -Classifications and Water Quality Standards (related to groundwater) and the N.C.

Water Quality Regulations, Laws and Guidance 10-4

Pesticide Board Rule 2 NCAC 9L .1005 -Restricted Areas.

- (4) "Best Management Practice" (BMP) means a practice, or combination of practices, that is determined to be an effective and practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
- (5) "Channel" means a natural water-carrying trough cut vertically into low areas of the land surface by erosive action of concentrated flowing water or a ditch or canal excavated for the flow of water.
- (6) "Colloidal Particles" means fine grained materials, organic or inorganic, that are easily suspended such as clay particles.
- (7) "Ford" means a submerged stream crossing which will bear intended traffic.
- (8) "Ground Cover" means any natural vegetative growth or other natural or manmade material which renders the soil surface stable against accelerated erosion.
- (9) "Land-Disturbing Activity" means any use of the land by any person in residential, industrial, educational, institutional or commercial development, highway and road construction and maintenance that results in a change in the natural cover or topography and that may cause or contribute to sedimentation.
- (10) "Groundwater" means phreatic water or subsurface water in the zone of saturation.

- (11) "Log Deck" means a place where logs are gathered in or near the forest for further transport, sometimes called a "landing".
- (12) "Mill Site" means any place where forest products are stored, altered, or processed.
- (13) "Permanently Stabilized" means the site is protected to the state at which no further accelerated erosion is expected to occur from the forestry activities.
- (14) "Pesticides" means a chemical used to kill pests. The term includes insecticides, fungicides, herbicides, and rodenticides.
- (15) "Site Preparation" means a forest activity to prepare the site for reforestation.
- (16) "Skid Trail" means a temporary pathway principally used to drag or transport felled trees or logs or other material to a landing.
- (17) "Stream" means a body of concentrated flowing water in a natural low area of the land surface.
 - (a) "Ephemeral stream" means a stream that flows only during and for short periods following precipitation and flows in low areas that may or may not have a well-defined channel.
 - (b) "Intermittent stream" means a stream that flows only during wet periods of the year (30-90 percent of the time) and flows in a continuous well-defined channel.
 - (c) "Perennial stream" means a stream that flows throughout a majority of the year (greater than 90 percent of the time) and flows in a well-defined channel.

Water Quality Regulations, Laws and Guidance 10-6

- (18) "Streamside Management Zone (SMZ)" means an area along both sides of intermittent and perennial streams and perennial waterbodies where extra precaution is used in carrying out forest practices in order to protect water quality.
- (19) "Visible Sediment" means solid particulate matter, both mineral and organic, which can be seen with the unaided eye that has been or is being transported by water, air, gravity, or ice from its site of origin. This does not normally include colloidal sized particles.
- (20) "Waterbody" means a natural or man-made basin that stores water, not including jurisdictional wetlands or beaver ponds.
- (18) "Working Days" means days exclusive of Saturdays and Sundays during which weather conditions or soil conditions permit land-disturbing activity to be undertaken.

History Note: Authority G.S. 113-44.4; 113A-52; 113A-52.1; Eff. January 1, 1990.

{FPG's continued on next page }

SECTION .0200 -PERFORMANCE STANDARDS

FPG

15A NCAC 011 .0201

STREAMSIDE MANAGEMENT ZONE

(a) A streamside management zone (SMZ) shall be established and maintained along the margins of intermittent and perennial streams and perennial waterbodies. The SMZ shall be of sufficient width to confine within the SMZ visible sediment resulting from accelerated erosion.

(b) Ground cover, or other means, within the SMZ shall be sufficient to restrain accelerated erosion.

(c) Access roads, skid trails, except as provided in Rule .0203 of this Section, logging decks and mill sites shall be placed outside of SMZs. When barriers such as property lines or limiting land features prohibit the location of any of these outside of SMZs, they can be located within the SMZs. When located within SMZs they shall have effective erosion control and sediment control structures or measures installed to restrain accelerated erosion and prevent visible sediment from entering intermittent or perennial streams or perennial waterbodies.

History Note: Authority G.S. 113A-52.1; Eff. January 1, 1990.

FPG

15A NCAC 011 .0202

PROHIBITION OF

DEBRIS ENTERING STREAMS AND WATERBODIES

Stream obstruction and the impediment of stream flow and/or degradation of water quality shall be prevented by keeping debris from construction, harvesting, mill site residue, and site preparation out of intermittent and perennial streams and perennial waterbodies.

History Note: Authority G.S. 77-13; 77-14; 113A-52.1; Eff. January 1, 1990.

FPG 15A NCAC 01I .0203 ACCESS ROAD AND SKID TRAIL STREAM CROSSINGS

Stream crossings shall be avoided when possible. Access roads and skid trails which must cross intermittent or perennial streams or perennial waterbodies shall be constructed so as to minimize the amount of sediment that enters the streams because of the construction. These crossings shall be installed so that:

- (1) stream flow will not be obstructed or impeded;
- (2) no stream channel or perennial waterbody shall be used as an access road or skid trail;
- (3) crossings are provided with effective structures or ground cover to protect the banks and channel from accelerated erosion;
- (4) they shall have sufficient water control devices to collect and divert surface flow from the access road or skid trail into undisturbed areas or other control structures to restrain accelerated erosion and prevent visible sediment from entering intermittent and perennial streams; and
- (5) ground cover, or other means, sufficient to prevent visible sediment from entering intermittent and perennial streams and perennial waterbodies shall be provided within ten working days of initial disturbance and will be maintained until the site is permanently stabilized.

History Note: Authority G.S. 113A-52.1; Eff. January 1, 1990.

FPG 15A NCAC 011 .0204

ACCESS ROAD ENTRANCES

Access road entrances intersecting public highways shall be constructed and maintained with measures, devices or techniques effective to prevent excessive soil and other debris from being carried to and deposited on the highway to the extent that sedimentation problems will result.

History Note: Authority G.S. 113A-52.1; Eff. January 1, 1990.

FPG 15A NCAC 011 .0205 PROHIBITION /

WASTE ENTERING STREAMS / WATERBODIES / GROUNDWATER

Measures shall be taken to prevent equipment servicing waste, petroleum, fertilizers or other chemical waste from entering streams, perennial waterbodies, and groundwater which result in a violation of an adopted water quality standard of the Environmental Management Commission in Sections 15A NCAC 2B .0200 -Classifications and Water Quality Standards Applicable to Surface Waters of North Carolina, and 15A NCAC 2L .0200 - Classifications and Water Quality Standards (related to groundwater).

History Note: Authority G.S. 113A-52.1; 143-214.1; Eff. January 1, 1990.

FPG 15A NCAC 011 .0206

PESTICIDE APPLICATION

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 2 NCAC 9L .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. Jan. 1, 1990.

Water Quality Regulations, Laws and Guidance 10-10

FPG 15A NCAC 011 .0207

FERTILIZER APPLICATION

When used, fertilizers shall be applied in a manner to prevent adverse impacts on water quality.

History Note: Authority G.S. 113A-52.1; 143-214.1; Eff. January 1, 1990.

FPG 15A NCAC 011 .0208

STREAM TEMPERATURE

Adequate shade within SMZs associated with natural perennial streams shall be retained to protect those streams from adverse temperature fluctuations which result in a violation of an adopted water quality standard of the Environmental Management Commission as contained in Rule 15A NCAC 2B .0211 -Fresh Surface Water Classifications and Standards.

History Note: Authority G.S. 113A-52.1; 143-214.1; Eff. January 1, 1990.

FPG 15A NCAC 011 .0209

REHABILITATION OF PROJECT SITE

Areas on the project site that have the potential for accelerated erosion, resulting in concentrated flow directly entering an intermittent or perennial stream or perennial waterbody, shall be provided with ground cover or other means of adequate sedimentation control within 30 working days after ceasing any phase of an operation or beginning a period of inactivity.

Treatment and maintenance of those areas shall be sufficient to restrain accelerated erosion and prevent visible sediment from entering intermittent and perennial streams and perennial waterbodies until the site is permanently stabilized.

History Note: Authority G.S. 113A-52.1; Eff. January 1, 1990.

Citation of stream / ditch obstruction laws

There are two state laws related to debris or obstructions in streams, ditches, drainageways and natural water passages. The laws are cited below: NCGS 77-13 and NCGS 77-14.

RULE North Carolina General Statute § 77-13. Obstructing streams a misdemeanor.

If any person, firm, or corporation shall fell any tree, or put any obstruction, except for the purposes of utilizing water as a motive power, in any branch, creek, stream, or other natural passage for water, whereby the natural flow of water through such passage is lessened or retarded, or whereby the navigation of such stream may be impeded, delayed, or prevented, the person, firm, or corporation so offending shall be guilty of a Class 2 misdemeanor. In addition to any fine or imprisonment imposed, the court may, in its discretion, order the person, firm, or corporation so offending to remove the obstruction and restore the affected waterway to an undisturbed condition, or allow authorized employees of the enforcing agency to enter upon the property and accomplish the removal of the obstruction and the restoration of the waterway to an undisturbed condition, in which case the costs of the removal and restoration shall be paid to the enforcing agency by the offending party. Nothing in this section shall prevent the erection of fish dams or hedges across any stream which do not extend across more than two thirds of its width at the point of obstruction. If the fish dams or hedges extend more than two thirds of the width of any stream, the said penalties shall attach. This section may be enforced by marine fisheries inspectors and wildlife protectors. Within the bounds of any county or

Water Quality Regulations, Laws and Guidance 10-12

municipality, this section may also be enforced by any law enforcement officer having territorial jurisdiction, or by the county engineer. This section may also be enforced by specially commissioned forest law-enforcement officers of the Department of Environment and Natural Resources for offenses occurring in woodlands. For purposes of this section, the term "woodlands" means all forested areas, including swamp and timber lands, cutover lands, and second-growth stands in previously cultivated sites.

(1872-3, c. 107, ss. 1, 2; Code, s. 1123; Rev., s. 3559; C.S., s. 7377; 1975, c. 509; 1977, c. 771, s. 4; 1979, c. 493, s. 1; 1987, c. 641, s. 12; 1989, c. 727, s. 218(19); 1991, c. 152, s. 1; 1993, c. 539, s. 581; 1994, Ex. Sess., c. 24, s. 14(c); 1997-443, s. 11A.119(a).)

RULE North Carolina General Statute § 77-14. Obstructions in streams and drainage ditches.

If any person, firm or corporation shall fell any tree or put any slabs, stumps, sawdust, shavings, lime, refuse or any other substances in any creek, stream, river or natural or artificial drainage ravine or ditch, or in any other outlet which serves to remove water from any land whatsoever whereby the drainage of said land is impeded, delayed or prevented, the person, firm or corporation so offending shall be guilty of a Class 2 misdemeanor: Provided, however, nothing herein shall prevent the construction of any dam or weir not otherwise prohibited by any valid local or State statute or regulation. In addition to any fine or imprisonment imposed, the court may, in its discretion, order the person, firm, or corporation so offending to remove the obstruction and restore the affected waterway to an undisturbed condition, or allow authorized employees of the enforcing agency to enter upon the property and accomplish the removal of the obstruction

and the restoration of the waterway to an undisturbed condition, in which case the costs of the removal and restoration shall be paid to the enforcing agency by the offending party. This section may be enforced by marine fisheries inspectors and wildlife protectors. Within the boundaries of any county or municipality this section may also be enforced by any law enforcement officer having territorial jurisdiction, or by the county engineer. This section may also be enforced by specially commissioned forest law-enforcement officers of the Department of Environment and Natural Resources for offenses occurring in woodlands. For purposes of this section, the term "woodlands" means all forested areas, including swamp and timber lands, cutover lands and second-growth stands on previously cultivated sites.

(1953, c. 1242; 1957, c. 524; 1959, cc. 160, 1125; 1961, c. 507; 1969, c. 790, s. 1; 1975, c. 509; 1977, c. 771, s. 4; 1979, c. 493, s. 1; 1987, c. 641, s. 13; 1989, c. 727, s. 218(20); 1991, c. 152, s. 2; 1993, c. 539, s. 582; 1994, Ex. Sess., c. 24, s. 14(c); 1997-443, s. 11A.119(a).)

Reference to DWQ Riparian Buffer Rules

RULE There are additional state rules that restrict your forestry operations if located within specific riverbasins or watersheds.

- These rules are commonly referred to as the DWQ “riparian buffer rules” and are enforced by the N.C. Division of Water Quality (DWQ).
- Each rule sets a predetermined buffer zone width that you must adhere to in addition to any needed SMZ requirements under the FPG's.

Water Quality Regulations, Laws and Guidance 10-14

- Each rule defines limits on how much timber you can harvest in the buffer. Also, there are restrictions on how you can conduct your logging and other forestry-related activities.
- The complexity of each rule does not allow for a description in this quick-reference field guide. Seek assistance from a forestry professional that is knowledgeable about these rules to understand what you can and cannot do within the designated riparian buffer zones and if you need to apply the buffer rule.
- The N.C. Forest Service has Forestry Leaflets that explain in simple terms the requirements of these rules as they relate to forestry activities. These Forestry Leaflets are printed in the North Carolina forestry BMP manual, are on the web site www.dfr.state.nc.us and available from local offices.
- At the time of this field guide's printing in 2007 there are riparian buffer rules in these areas of the state:
 - Catawba River & Mainstem Lakes.
 - Neuse River Basin.
 - Randleman Lake Watershed.
 - Tar-Pamlico River Basin.

Remember: *More riparian buffer rules for other areas of the state may be enacted over time. Stay familiar with potential changes in your operating area. The N.C. Forest Service county ranger or district office can help you stay informed.*

Wetland Rules Information

RULE In addition to above-mentioned rules and laws, there are several regulations or guidance documents that explain how certain forestry practices must be conducted within wetland areas.

Wetlands are more fully explained in the forestry BMP manual. Read and understand the information in that manual if you expect to conduct forestry (“silvicultural”) activities in wetlands.

To retain the silvicultural exemption within Section 404 of the Clean Water Act, the federal regulations require that forestry operators:

- (1) Must not convert an area of the waters of the U.S. into a use to which it was not previously subject;
- (2) Must conduct all forestry operations in a manner that:
 - Does not result in the immediate or gradual conversion of a jurisdictional wetland to a non-wetland and that;
 - Does not impair the flow or circulation or reduce the reach of waters of the U.S.
- (3) Conduct site preparation activities for establishment of pine plantations in accordance with specific practices that limit soil disturbance and hydrologic alterations.
- (4) Must comply with all BMPs that are required by regulation for that specific activity.

Water Quality Regulations, Laws and Guidance 10-16

Remember: ***Forestry activities in all wetlands, regardless of size, should be conducted in a manner that minimizes adverse impacts on the unique functions and conditions of these ecosystems.***

Refer to the following regulations and/or information documents when conducting forestry activities in wetlands:

- Fifteen (15) federally-required practices for forest roads in wetlands, as cited in 33 CFR Part 323.4(a)(6)(i - xv): Discharges Not Requiring Permits.

These 15 requirements are cited later in this section.

- The November 28, 1995 Memorandum to the Field issued jointly by the U.S. EPA and U.S. Army Corps of Engineers. This memo outlines six (6) federally-required practices for mechanical site prep work when performed for pine plantation establishment on jurisdictional wetlands and specifies when a Section 404 permit is needed to conduct these activities.

These 6 requirements are cited later in this section.

- The November 2004 information document from the U.S. Army Corps of Engineers entitled: Information Regarding Compliance with the Federal Clean Water Act Section 404(f)(1) Provisions for the Construction of Forest Roads Within Wetlands, in North Carolina. **Due to its length, this document is printed in the forestry BMP manual.**

- **North Carolina Dredge and Fill Law cited in N.C.GS 113-229.** This law requires a permit from the N.C. Division of Coastal Management if forestry related activities (such as road construction, minor drainage or other activities) create a discharge of dredged or fill material into estuarine waters, tidelands, marshlands or state-owned lakes. The definitions of these wetland types are provided in the North Carolina forestry BMP manual.
- **North Carolina Coastal Area Management Act (CAMA) cited in N.C.GS 113A-103(5)(b)(4).** In the 20 coastal zone counties, this law will require a permit if forestry production will involve the excavation or filling of estuarine or navigable waters or coastal marshland. The 20 coastal zone “CAMA” counties are listed in the following table:

20 Coastal Zone “CAMA” Counties of N.C.

Beaufort	Chowan	Hertford	Pasquotank
Bertie	Craven	Hyde	Pender
Brunswick	Currituck	New Hanover	Perquimans
Camden	Dare	Onslow	Tyrrell
Carteret	Gates	Pamlico	Washington

Remember:

Additional information about forestry operations in wetlands may be available from the U.S. Army Corps of Engineers Web site: www.saw.usace.army.mil

Water Quality Regulations, Laws and Guidance 10-18

RULE Fifteen (15) Federal Requirements for Forestry Roads Constructed in Wetlands

1. (i) 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. (ii) 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. (iii) The road fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows;
4. (iv) The fill shall be properly stabilized and maintained during and following construction to prevent erosion;
5. (v) 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. (vi) In designing, constructing, and maintaining roads, vegetative disturbance in the waters of the U.S. shall be kept to a minimum;
7. (vii) 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. (viii) Borrow material shall be taken from upland sources whenever feasible;
9. (ix) 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. (x) Discharges into breeding and nesting areas for migratory waterfowl, spawning areas, and wetlands shall be avoided if practical alternatives exist;
11. (xi) The discharge shall not be located in the proximity of a public water supply intake;
12. (xii) The discharge shall not occur in areas of concentrated shellfish production;
13. (xiii) The discharge shall not occur in a component of the National Wild and Scenic River System;

Water Quality Regulations, Laws and Guidance 10-20

14. (xiv) The discharge of material shall consist of suitable material free from toxic pollutants in toxic amounts; and

15. (xv) All temporary fills shall be removed in their entirety and the area restored to its original elevation.

RULE

Six (6) Federal Requirements for Mechanical Site Prep Undertaken for Pine Plantation Establishment 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 streamside management zones -- defined areas adjacent to streams, lakes, and other waterbodies -- 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; and
- 6) Conduct activities with appropriate water management mechanisms to minimize off-site water quality impacts.