



North Carolina Forest Service

# FORESTRY Leaflets

July 2012

WQ-10

## A Guide to Implementing the Catawba Riparian Buffer Rule For Forest Harvesting Activities in North Carolina

The permanent "Catawba Riparian Buffer Rule" 15A NCAC 02B .0243 became effective August 1, 2004. There are certain restrictions on forest harvesting activities within this riparian buffer.

### Where This Rule Applies along the Catawba River

The Catawba Riparian Buffer Rule only applies in North Carolina along the main-stem of the Catawba River below Lake James and along the main-stem lakes from and including Lake James, to the NC/SC border.

This Leaflet is not intended to provide legal advice or a final interpretation of the Catawba Riparian Buffer Rule. Obtain assistance from NC Division of Water Resources in determining the applicability of this rule on a specific site.

On intermittent and perennial streams or waterbodies where the Catawba Riparian Buffer Rule does not apply **a SMZ is still required** during forestry-related site disturbing activities to comply with the North Carolina Forest Practices Guidelines Related to Water Quality (FPGs).

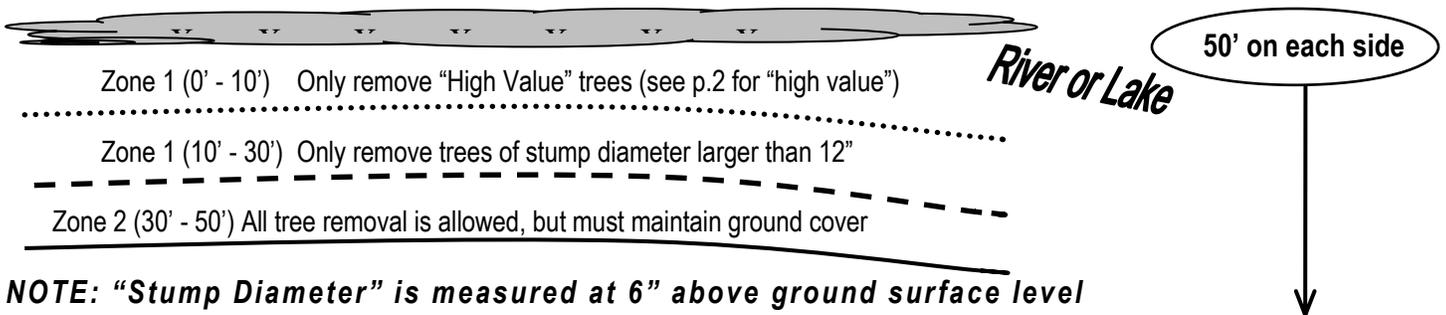
There may be other requirements in this 'buffer rule' that forestry activities must comply with that are not covered in this Leaflet. Check the entire rule document for all requirements related to road construction and land disturbing activities.

### Required Riparian Buffer Width and Zones

**The Catawba Riparian Buffer is made up of two zones that together equal 50 feet in width:**

**Zone 1** = the closest 30 feet (10' + 20') extending outward from the waterbody (see section below) **and**,

**Zone 2** = the next 20 feet extending from the end of Zone 1 out away from the waterbody



**NOTE: "Stump Diameter" is measured at 6" above ground surface level**

### How to Measure the Catawba Riparian Buffer

**For Catawba River:** Measurement starts "at the most landward limit of the top of the bank"

**For the main-stem lakes:** Measurement starts at the "most landward limit of the full-pond level." The full-pond level may be obtained from the Lake Levels section of the Duke Energy Company website [www.duke-energy.com/lakes](http://www.duke-energy.com/lakes) or by calling Duke Energy Company toll-free at 1-800-829-LAKE (1-800-829-5253).

## **Timber Harvesting in the Catawba Riparian Buffer**

**Selective timber harvesting is only allowed to occur in the 50-foot buffer if:**

- 1) A forest management plan for the property is prepared or approved by a Registered Forester, **OR**
- 2) The property has “a deferment for use-value under forestry”.

### **Riparian Buffer Zone 1 ( 0’ to 30’ )**

<b>Allowed</b>	Trees shall be removed with minimal disturbance to soil and residual vegetation.
<b>Allowed with Limitations</b>	Tracked or wheeled vehicles are not permitted except at stream crossings designed, constructed and maintained in accordance with N.C. FPG .0203
<b>Not Allowed</b>	Soil disturbing site preparation activities

#### **Inner Zone 1 ( 0’ to 10’ )**

- Allowed** Removal of only individual “High Value” trees; Protect and maintain other forest vegetation
- “High Value” trees are defined as any tree whose stump diameter is 18” or larger

**NOTE** =====► **“Stump Diameter” is measured at 6” above ground surface level**

#### **Outer Zone 1 ( 10’ to 30’ )**

- Allowed** Limited amount of timber removal
- Harvest of any tree with a stump diameter larger than 12”
    - \* Re-entry into natural forest shall be no more frequent than every 15 years.
    - \* Re-entry into plantation forest shall be no more frequent than every 5 years.
- In either case, the trees remaining after harvest shall be as evenly spaced as possible.

### **Other Forestry Activities in Zone 1 of the Catawba Riparian Buffer**

#### **Forestry activities allowed in Zone 1 of the riparian buffer**

- √ Individual trees may be treated to maintain or improve their health, form or vigor.
- √ Removal of individual trees that are in danger of causing damage to structures or human life.

#### **Forestry activities allowed with limitations, in Zone 1 of the riparian buffer**

- Harvesting of dead or infected trees or application of pesticides necessary to prevent or control extensive tree pest and disease infestation. *These practices must be approved by the N.C. Forest Service for a specific site.* The N.C. Forest Service must notify the Division of Water Resources of all approvals.
- Timber felling shall be directed away from the waterbody.
- Skidding shall be directed away from the waterbody and shall be done in a manner that minimizes soil disturbance and prevents the creation of channels or ruts, and must comply with N.C. FPG .0203
- Natural regeneration of forest vegetation and planting of trees, shrubs, or ground cover plants to enhance the buffer, provided that soil disturbance is minimized. Plantings shall consist primarily of native species.
- Application of fertilizer only allowed as necessary for permanent stabilization. Broadcast application of fertilizer or herbicides to the adjacent forest stand shall be conducted so that the chemicals are not applied directly to or allowed to drift into the buffer.

#### **Forestry activities not allowed in Zone 1 of the riparian buffer**

- ✗ Logging decks or sawmill sites.
- ✗ Prescribed burns.

### **Riparian Buffer Zone 2 ( 30’ to 50’ )**

**Harvesting and regeneration of the forest stand is allowed as long as these activities comply with the N.C. FPGs**

There may be additional requirements of this ‘buffer rule’ that forestry activities must comply with that are not covered in this Leaflet. Check the entire rule document for all necessary requirements related to road construction and other land disturbing activities.





# FORESTRY Leaflets

July 2014

WQ-11

## A Guide to Implementing Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules for Forest Management Activities

Additional rule information is available on the 'Water Quality' portion of the N.C. Forest Service Web site [www.ncforestservice.gov](http://www.ncforestservice.gov).

### WHERE TO APPLY THESE RIVER BASIN RIPARIAN BUFFER RULES

The Neuse River Basin and Tar-Pamlico River Basin 'Riparian Buffer Rules' apply to perennial streams, intermittent streams, ponds, lakes, and estuaries located in either river basin, and which are approximately shown on either the most recent printed version (based on the 2006 Interpretive Ruling by the NC Environmental Management Commission) of a NRCS soil survey map or the most recent version of a USGS 1:24000 (7.5 minute) quad topographic map.

The Neuse River or Tar-Pamlico River Riparian Buffer Rules do not apply to the following waterbodies:

- x Any "surface waters" that do not appear on either of the above named soils or topographic maps
- x Any ephemeral streams (sometimes referred to as sloughs, swales, gullies, or stormwater channels)
- x Man-made ditches or canals that are not intended for water navigation or boat access
- x Man-made ponds and lakes that are located outside natural drainage ways



Seek advice from a professional trained in stream identification and determination when assessing 'buffer rule' applicability. Modified streams may look like ditches but still require these riparian buffer rules. This Leaflet is not intended to provide legal advice or final interpretation of these buffer rules. A SMZ is still required in all cases along intermittent streams, perennial streams and perennial waterbodies as mandated by the statewide rules known as the "Forest Practices Guidelines Related to Water Quality" (FPGs).

### REQUIRED RIVER BASIN RIPARIAN BUFFER WIDTH and ZONES

The buffer area is made up of two zones that together equal a 50-foot wide buffer that must be "measured horizontally on a line perpendicular to the surface water".

**Zone 1 - For streams:**

Zone 1 begins at the most landward limit of the top of bank, or the rooted vegetation, and extends towards the land for 30 feet on all sides.

**Zone 1 - For ponds, lakes, reservoirs:**

Zone 1 begins at the most landward limit of the normal water level, or the rooted vegetation, and extends towards the land for 30 feet.

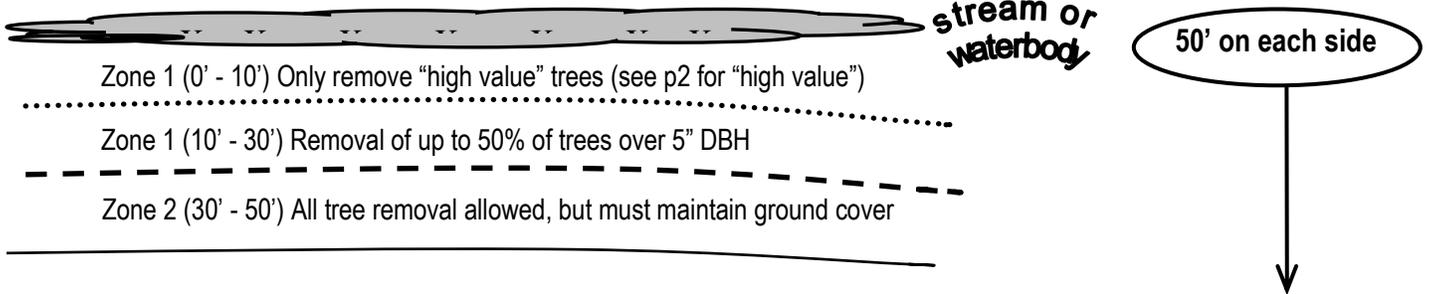
**Zone 1 - For the 20 Coastal NC counties:**

Zone 1 begins at the most landward limit of the following options, whichever is more restrictive (*see a,b,c below*) and extends toward the land for 30 feet:

- (a) the normal high water level, or (b) the normal water level, or
- (c) the landward limit of coastal wetlands as defined by NC Div. of Coastal Management

**Zone 2 - For all sites:**

Zone 2 begins at the outer edge of Zone 1 and extends outward 20 feet and shall consist of a stable, vegetated area. Ground cover must allow water infiltration and diffusion.



## **TIMBER HARVESTING IN THE NEUSE/TAR-PAM RIPARIAN BUFFER**

### **Selective timber harvesting is only allowed to occur in the 50 foot buffer if:**

- 1) A forest management plan for the property is prepared or approved by a Registered Forester, **or**
- 2) The property is enrolled in that county's Present-Use Tax Valuation Program for forestry use.

### **All of Zone 1: 0 ft. to 30 ft.** (includes 'Inner' & 'Outer' areas defined below)

<b>Allowed</b>	Tree removal, provided that disturbance to soil and residual vegetation is minimized.
<b>Allowed with Restrictions</b>	<b>Tracked or wheeled vehicles are not permitted except at stream crossings designed, constructed, and maintained in accordance with FPG .0203</b>
<b>Not Allowed</b>	No soil disturbing site preparation activities

### **Zone 1 - Inner 10 feet: 0' to 10'** (land immediately adjacent to the stream or waterbody)

<b>Allowed</b>	Removal of individual "High Value" trees
<b>Allowed with Restrictions</b>	<ul style="list-style-type: none"><li>• "High Value" Pine trees are defined as any tree with a DBH of 14" and greater <b>or</b> a stump diameter of 18" and greater</li><li>• "High Value" Hardwood and Wetland trees are defined as any tree with a DBH of 16" and greater, <b>or</b> a stump diameter 24" and greater</li></ul>
<b>Not Allowed</b>	<b>No removal of any tree with exposed primary roots visible in the streambank.</b> <ul style="list-style-type: none"><li>• It is recommended to mark/flag residual "leave" trees to make sure they are protected.</li></ul>

### **Zone 1 - Outer 20 feet: 10' to 30'** (land adjoining the inner 10 feet area)

<b>Allowed</b>	<ul style="list-style-type: none"><li>• Limited amount of timber removal</li><li>• Remaining trees left standing should be as evenly spaced as possible.</li></ul>
<b>Allowed with Restrictions</b>	Harvest of no more than 50% of the trees over 5" DBH <ul style="list-style-type: none"><li>• Re-entry for natural forest is allowed every 15 years.</li><li>• Re-entry for plantation forest is allowed every 5 years.</li></ul>
<b>Not Allowed</b>	No removal of trees 5" DBH and smaller

### **All of Zone 2: 30 ft. to 50 ft.** (The outermost 20 feet of the entire riparian buffer)

There are no tree harvesting or site-prep restrictions in Zone 2, so long as there is sufficient ground cover maintained to provide for diffusion and infiltration of water runoff. *All activities must still comply with the N.C. FPGs.*

## **OTHER FORESTRY ACTIVITIES IN THE RIPARIAN BUFFER**

### **Forestry Activities Allowed in the Entire 50-foot Riparian Buffer**

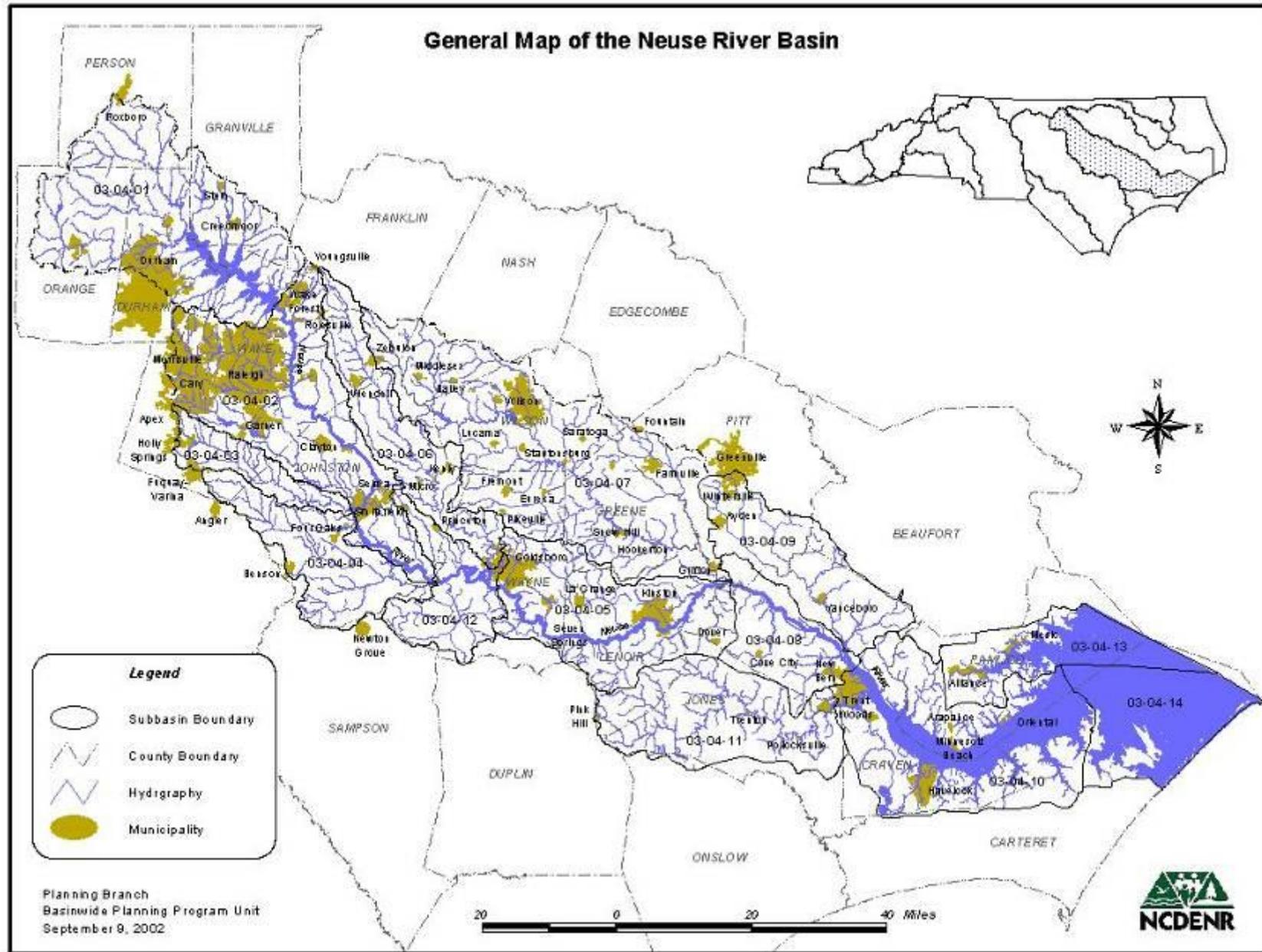
- ✓ Individual trees may be treated to maintain or improve their health, form, or vigor.
- ✓ Harvesting of dead or infected trees or application of pesticides necessary to prevent or control extensive tree pest and disease infestation. These practices must be approved by the N.C. Forest Service for a specific site. The N.C. Forest Service must notify the Division of Water Resources of all approvals.
- ✓ Removal of individual trees that are in danger of causing damage to structures or human life.

### **Forestry Activities Allowed with Restrictions, in the Entire 50-foot Riparian Buffer**

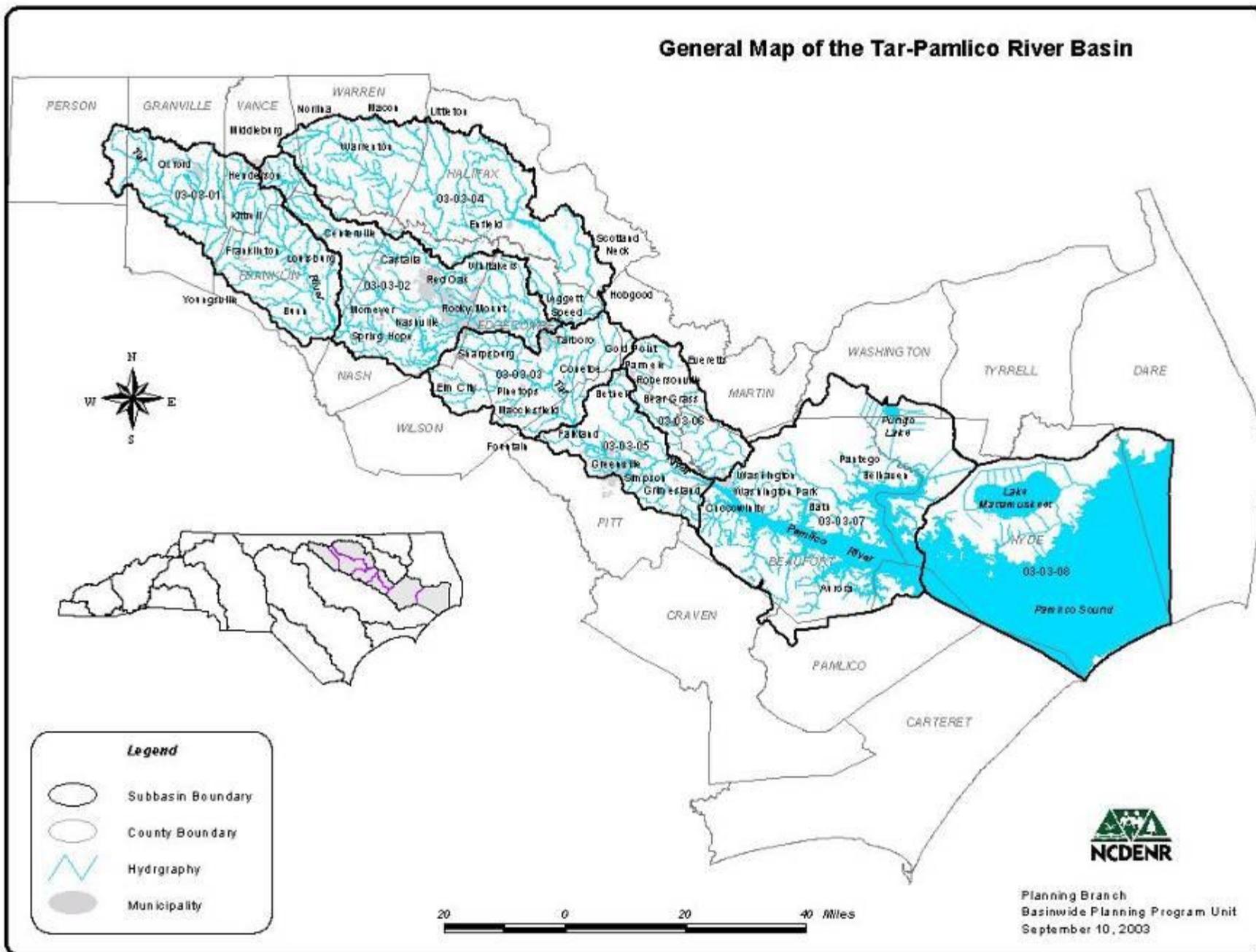
- Access roads and skid trails only allowed for temporary and permanent stream crossings, which are established in accordance with FPG .0203. Temporary stream crossings shall be permanently stabilized after any site disturbing activity is completed.
- Timber felling shall be directed away from the stream or waterbody.
- Skidding shall be directed away from the stream or waterbody and shall be done in a manner that minimizes soil disturbance and prevents rutting or the creation of channels.
- Natural regeneration of forest vegetation and planting of trees, shrubs, or ground cover plants to enhance the buffer shall be allowed provided that soil disturbance is minimized. Plantings shall consist primarily of native species.
- Application of fertilizer only allowed as necessary for permanent stabilization. Broadcast application of fertilizer or herbicides to the adjacent forest stands shall be conducted so that the chemicals are not applied directly to or allowed to drift into buffer.

### **Forestry Activities Not Allowed in the 50-foot Riparian Buffer**

- ✗ NO logging decks or sawmill sites placed in the buffer
- ✗ NO high intensity prescribed burns.



## General Map of the Tar-Pamlico River Basin





# FORESTRY Leaflets

JULY 2012

WQ-12

## A Guide to Implementing the Randleman Lake Watershed Riparian Buffer Rule for Forest Management Activities

N.C. Administrative Code (15A NCAC 02B .0250) requires protecting and maintaining riparian areas along waterbodies located in the watershed of Randleman Lake. This Lake is located northwest of Randleman, NC but its watershed is in portions of Forsyth, Guilford and Randolph counties. Contact the N.C. Division of Water Resources Winston-Salem Regional Office or NC Forest Service Lexington District Office for more details.

**\*\*NOTE\*\*** This rule was revised and the updated rule became effective June 1, 2010.  
This updated *Forestry Leaflet* replaces all former WQ-12 (and FM-37) leaflets.

### Where to Apply This Buffer Rule

This buffer rule applies to all intermittent streams; perennial streams; lakes; reservoirs; and ponds in the watershed of Randleman Lake if the water body *“is approximately shown on any of the following references, or if there is other site specific evidence that indicates”* the presence of a water body that is not shown on any of these maps:

- The most recent version of the USGS 1:24000 scale topographic (topo) map; or
- The most recent version of the hardcopy soil survey maps developed by the USDA-NRCS; or
- A map approved by the N.C. Geographic Information Coordinating Council and the Environmental Management Commission.

### This buffer rule also applies to:

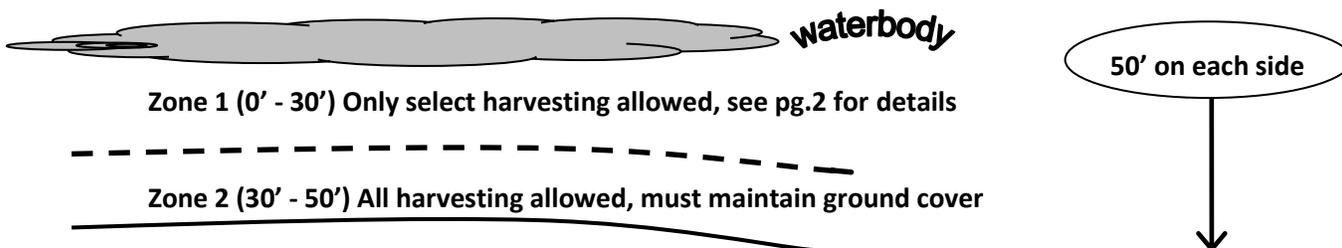
- Modified natural streams
- A ditch or man-made conveyance that delivers untreated stormwater runoff from an adjacent source directly to an intermittent stream or perennial stream.

**NOTE..... A SMZ is still required in certain situations as described within the FPG’s, even if the water body does not require implementing the Randleman Lake Riparian Buffer Rule zone.**

### Required Buffer Zone Width

The buffer zone is comprised of 2 zones that together equal 50 feet:

- **Zone 1** = The closest 30 feet from the edge of the waterbody extending towards land, **AND**;
- **Zone 2** = the next 20 feet towards land, extending from the end of Zone 1



## How to Measure the Randleman Lake Watershed Buffer Zone Width

The buffer zone is comprised of 2 zones that together equal 50 feet:

### **Zone 1 is the closest 30-feet from the water body:**

- To measure Zone 1 for streams: “Zone 1 shall begin at the most landward limit of the top of the bank or the rooted herbaceous vegetation and extend landward a distance of 30 feet on all sides of the surface water, measured horizontally on a line perpendicular to a vertical line marking the edge of the top of the bank.”
- To measure Zone 1 for ponds, reservoirs, and lakes: “Zone 1 shall begin at the most landward limit of the normal high water level or the rooted herbaceous vegetation and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to a vertical line marking the edge of the surface water or rooted herbaceous vegetation.”

**Zone 2 shall begin at the outer edge of Zone 1** and extend landward 20 feet as measured horizontally on a line perpendicular to the surface water.

## Timber Harvesting in the Riparian Buffer

**Selective timber harvesting is only allowed to occur in the 50 foot buffer if:**

- The property is enrolled in that county’s Present-Use Valuation Tax Program for forestry use; **or**
- The property has a forest management plan that has been prepared or approved by a Registered Forester.

### ***All of Zone 1 (0 to 30 feet): Includes Inner and Outer areas defined below.***

<b>Allowed</b>	Trees shall be removed with the minimum disturbance to soil and vegetation.
<b>Allowed with Restrictions</b>	Tracked or wheeled vehicles are allowed for selective timber harvesting, where there is no other practical alternative for removal of individual trees. This activity must comply with the FPG’s. If equipment is used, <i>no equipment shall operate within the first 10-feet of the buffer.</i>
<b>Prohibited</b>	No soil disturbing site prep is allowed.

### ***Inner Zone 1 (0 to 10 feet from water)***

<b>Allowed</b>	Removal of individual “ <i>high value</i> ” trees.
<b>Allowed with Restrictions</b>	<ul style="list-style-type: none"> <li>• “<i>High Value</i>” pine trees are defined as any tree with a 14-inch or larger DBH; <b>or</b> a 18-inch or larger stump diameter.</li> <li>• “<i>High Value</i>” hardwood and wetland trees are defined as any tree with a 16-inch or larger DBH; <b>or</b> a 24-inch or larger stump diameter.</li> </ul>
<b>Prohibited</b>	<ul style="list-style-type: none"> <li>• No equipment shall operate within the first 10-feet of the buffer zone.</li> <li>• No tree shall be removed if that tree has exposed primary roots in the streambank.</li> </ul>

### ***Outer Zone 1 (10 to 30 feet from water)***

<b>Allowed</b>	<ul style="list-style-type: none"> <li>• Diameter-Limit Cut harvest of timber.</li> <li>• All remaining trees shall be as evenly spaced as possible.</li> </ul>
<b>Allowed with Restrictions</b>	<ul style="list-style-type: none"> <li>• Harvest of no more than 50% of trees that have a DBH larger than 5-inches.</li> <li>• Re-entry into Outer Zone 1 for natural forest is allowed every 15 years.</li> <li>• Re-entry into Outer Zone 1 for plantation forest is allowed every 5 years.</li> </ul>
<b>Prohibited</b>	No removal of any tree with a DBH of 5-inches or smaller is allowed.

### ***All of Zone 2 (30 to 50 feet from water)***

<b>Allowed</b>	Harvesting and regeneration of the forest stand is allowed as long as all activities comply with the FPG’s.
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## **Other Forestry Activities in the Randleman Lake Watershed Buffer**

### **Forestry Activities Allowed in the Entire 50-foot Riparian Buffer**

- Removal of individual trees that are in danger of causing damage to structures or human life.
- Individual trees may be treated to maintain or improve their health, form, or vigor.
- Harvesting of dead or infected trees or other cutting techniques necessary to prevent or control extensive tree pest and disease infestation. These practices must be approved by the N.C. Forest Service (NCFS) and must comply with the FPG's. The NCFS must notify the local government of all approvals.

### **Forestry Activities Allowed with Restrictions in the Entire 50-foot Riparian Buffer**

- Access road and skid trails are prohibited except for stream crossings when established in accordance to the FPG's.
- Temporary stream crossings shall be permanently stabilized after any site disturbing activity is completed.
- Timber felling shall be directed away from the stream or body of water.
- Skidding shall be directed away from the stream or body of water. Skidding shall be done in a manner that minimizes soil disturbance and prevents the creation of channels or ruts.
- Natural regeneration of forest vegetation and planting of trees, shrubs, or ground cover plants to enhance the riparian buffer shall be allowed, provided that soil disturbance is minimized. Plantings shall consist primarily of native species.
- Fertilizer application is only allowed for one-time use that is necessary for permanent stabilization.
- Broadcast application of fertilizer or herbicides to the adjacent forest stand shall be conducted so that the chemicals are not applied directly to or allowed to drift into the riparian buffer.

### **Forestry Activities Not Allowed in the Entire 50-foot Riparian Buffer**

- Logging decks and sawmill sites shall not be placed in the buffer.
- High intensity prescribed burns are not allowed.

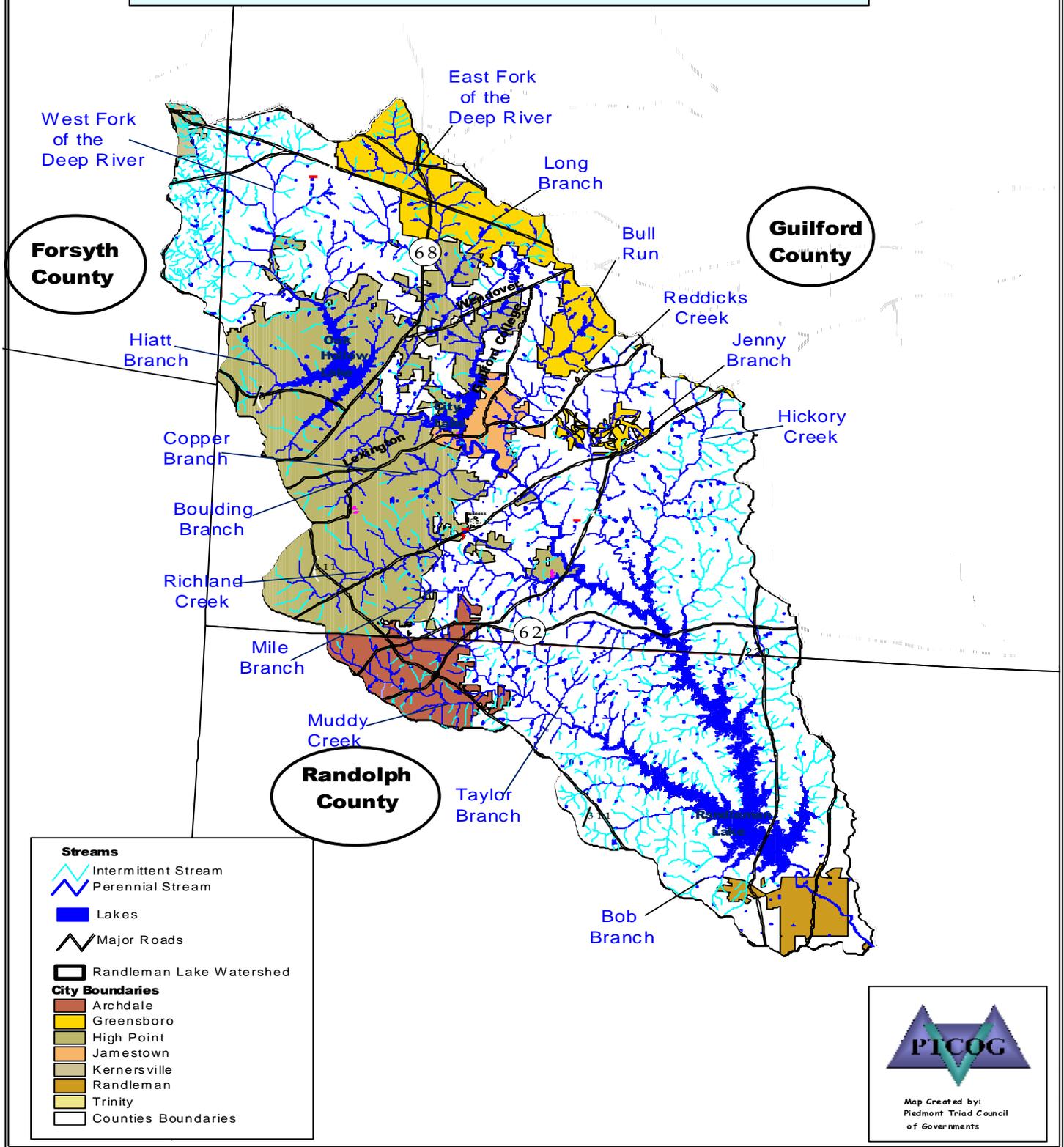
## **Diffuse Flow of Runoff**

Diffuse flow of runoff shall be maintained in the entire 50-foot riparian buffer by dispersing concentrated flow and re-establishing vegetation.

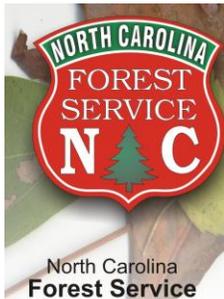
- Concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow at non-erosive velocities before the runoff enters Zone 2 of the riparian buffer.
- Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.
- No new stormwater conveyances are allowed through the buffers except for those specified in Item (9) of this Rule addressing stormwater management ponds drainage ditches, roadside ditches, and stormwater conveyances.

**This Forestry Leaflet is not intended to provide legal advice or final interpretation of the Randleman Lake riparian buffer rule. Seek assistance from the NC-DWR, or a Registered Forester who is certified to make stream determinations for buffer rule applicability. There may be additional requirements of this buffer rule that are not disclosed in this Forestry Leaflet -- you are encouraged to read and understand the complete rules.**

# Randleman Lake Watershed



Watershed map created by and provided courtesy of the Piedmont Triad Regional Council [www.ptrc.org](http://www.ptrc.org)



# FORESTRY Leaflets

July 2012

WQ-13

## A Guide to Implementing the Goose Creek Watershed Riparian Buffer Rule for Forest Management Activities

Effective February 1, 2009, N.C. Administrative Code rule 15A NCAC 02B .0600-.0609 requires protecting and maintaining riparian areas along waterbodies located in the Goose Creek watershed of the Yadkin Pee-Dee River Basin. This watershed includes Goose Creek, Stevens Creek, Paddle Branch, Duck Creek, and all of their tributaries as located in Union or Mecklenburg counties (see map). Contact the N.C. Division of Water Resources (DWR) Mooresville Regional Office at 704-663-1699 for more information.

### Where To Apply This Rule

**This rule applies to perennial and intermittent streams, lakes, ponds and estuaries located in the Goose Creek watershed if it is indicated by any of these methods:**

- It appears on the most recent version of a USGS 1:24000 (“7.5 Minute Quad”) topographic map.
- It appears on the most recent published version of an USDA-NRCS Soil Survey map. For a list of acceptable versions visit <http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/maps> Click on the “Most recent published Soil Survey Table” link.

**The following waterbodies do NOT require the Goose Creek Watershed riparian buffer rule:**

- Any “surface waters” that do not appear on either of the above named soil or topographic maps;
- Any ephemeral streams (sometimes referred to as sloughs, swales, gullies, or stormwater channels);
- Man-made ditches or canals that are not intended for water navigation or boat access;
- Man-made ponds and lakes that are located outside natural drainage ways;
- Areas mapped as intermittent streams, perennial streams, lakes, ponds, or estuaries on the most recent versions of either a USGS 1:24000 scale topographic map or published NRCS soil survey map where no perennial waterbody, intermittent waterbody, lake, pond or estuary actually exists on the ground. This type of determination must be made by DWR or those to which they have delegated that authority.

**Seek advice from a professional who is certified in DWR’s “Surface Water Identification Training and Certification Program” when determining this rule’s applicability. Modified streams may look like ditches, but still require implementing these watershed buffer rules. This leaflet is not intended to provide legal advice or final interpretation of the Goose Creek Watershed riparian buffer rules.**

**On waterbodies where the Goose Creek Watershed riparian buffer rules do not apply, a Streamside Management Zone (SMZ) of appropriate width is still required to comply with the Forest Practices Guidelines Related to Water Quality (FPGs).**

Information on FPGs can be found at [www.ncforestservice.gov/publications/Forestry%20Leaflets/WQ01.pdf](http://www.ncforestservice.gov/publications/Forestry%20Leaflets/WQ01.pdf)

***There may be additional requirements of the Goose Creek Watershed Buffer Rule not covered in this Leaflet with which forestry activities must comply. Check the entire rule document for all necessary requirements related to road construction and other land disturbing activities.***

### How To Measure the Required Buffer Width

#### For streams:

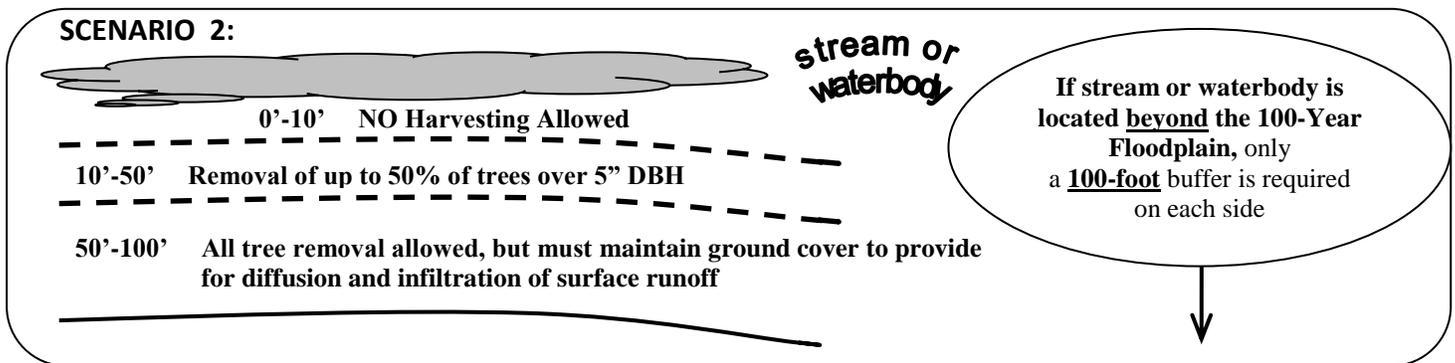
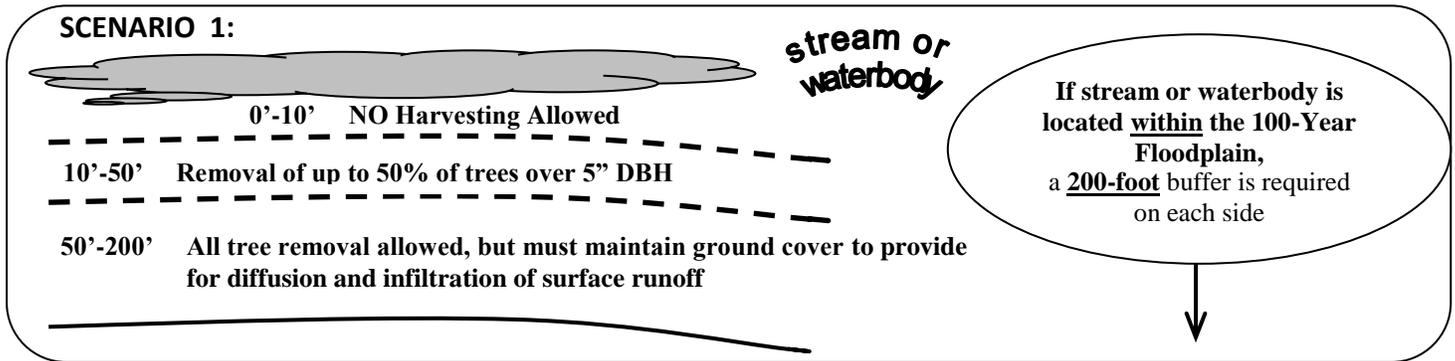
Measurement will “begin at the most landward limit of the top of bank or the rooted herbaceous vegetation and extend landward on all sides of the surface water, measured horizontally on a line perpendicular to the surface water.”

#### For any other waterbody:

Measurement will “begin at the most landward limit of the normal water level or the rooted herbaceous vegetation and extend landward, measured horizontally on a line perpendicular to the surface water.”

### Required Riparian Buffer Widths

The buffer has 2 different requirements depending on where the stream or waterbody exists in relation to the 100-Year Floodplain. If it exists within the 100-Year Floodplain then a 200-foot buffer is required. If it exists beyond the 100-Year Floodplain then a 100-foot buffer is required. The 100-Year Floodplain is delineated by the North Carolina Floodplain Mapping Program of the N.C. Division of Emergency Management: [www.ncfloodmaps.com](http://www.ncfloodmaps.com)



### Timber Harvesting In The Goose Creek Riparian Buffer

Timber harvesting is only allowed to occur within the 100-foot or the 200-foot buffer if:

- 1) A forest management plan for the property is prepared or approved by a Registered Forester, or
- 2) The property is enrolled in that county's Present-Use Tax Valuation Program for Forestry use.

Copies of either the approval of the deferment for use-value under forestry or the forest management plan shall be produced upon request.

#### Area from 0 ft. to 10 ft. of either the 100-foot or the 200-foot buffer

Not Allowed No harvesting is allowed. The first 10 feet of the riparian buffer directly adjacent to the stream or waterbody shall be undisturbed.

Allowed with Restrictions **Tracked or wheeled vehicles are not allowed except at stream crossings designed, constructed, and maintained in accordance with FPG .0203**

#### Area from 10 ft. to 50 ft. of either the 100-foot or the 200-foot buffer

- Allowed
- Selective harvest is allowed. Trees shall be removed with the minimum disturbance to the soil and residual vegetation.
  - Remaining trees left standing should be as evenly spaced as possible.

Allowed with Restrictions **Tracked or wheeled vehicles are not allowed except at stream crossings designed, constructed, and maintained in accordance with FPG .0203**

Harvest of no more than 50% of the trees over 5" Diameter Breast Height (DBH).

- Re-entry for natural forests are allowed every 15 years.
- Re-entry for forest plantations are allowed every 5 years.

Not Allowed No removal of trees 5" DBH and smaller.

**Area from 50 ft. thru the remainder of either the 100-foot or the 200-foot buffer**

**Allowed** • Trees shall be removed with the minimum disturbance to the soil and residual vegetation.

**Allowed with Restrictions** • Harvesting and regeneration of the forest stand is allowed provided that sufficient ground cover is maintained to provide for diffusion and infiltration of surface runoff. Soil disturbing site preparation activities for regeneration are not allowed.

**Forestry Activities in the Goose Creek Watershed Riparian Buffer**

**REQUIRED in the entire 100-foot or 200-foot buffer**

- Diffuse flow of water shall be maintained in the riparian buffer by dispersing concentrated runoff flow and re-establishment of vegetation.
- Concentrated runoff from new ditches or man-made conveyances shall be converted to diffuse flow before the runoff enters the riparian buffer area.
- Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.

**ALLOWED in the entire 100-foot or 200-foot buffer**

- ✓ Stream crossings associated with timber harvesting allowed only if performed in accordance with the FPGs.
- ✓ Natural regeneration of forest vegetation and planting of trees, shrubs, or ground cover plants to enhance the riparian buffer, provided that soil disturbance is minimized. Plantings shall consist primarily of locally native species. Soil disturbing site preparation activities are not allowed.
- ✓ Horticulture or silvicultural practices to maintain the health of individual trees.
- ✓ Removal of individual trees that are in danger of causing damage to structures or human life.
- ✓ Removal of dead or infected trees or application of pesticides necessary to prevent or control extensive tree pest and disease infestation when approved by the N.C. Forest Service for a specific site. A copy of the approval must be provided to the Division of Water Resources (DWR).
- ✓ Timber removal and skidding of trees shall be directed away from the stream or waterbody. Skidding shall be done in a manner that minimizes soil disturbance and prevents the creation of channels or ruts. Any tree removal must be performed in a manner that does not compromise the intended purpose of the riparian area and is in compliance with applicable FPGs.
- ✓ Existing drainage ditches, roadside ditches, and stormwater outfalls provided that they are managed to minimize the sediment, nutrients, etc. which they convey to waterbodies.
- ✓ Emergency fire control measures provided that topography is restored.

**POTENTIALLY ALLOWED in the entire 100-foot or 200-foot buffer (only with DWR approval)**

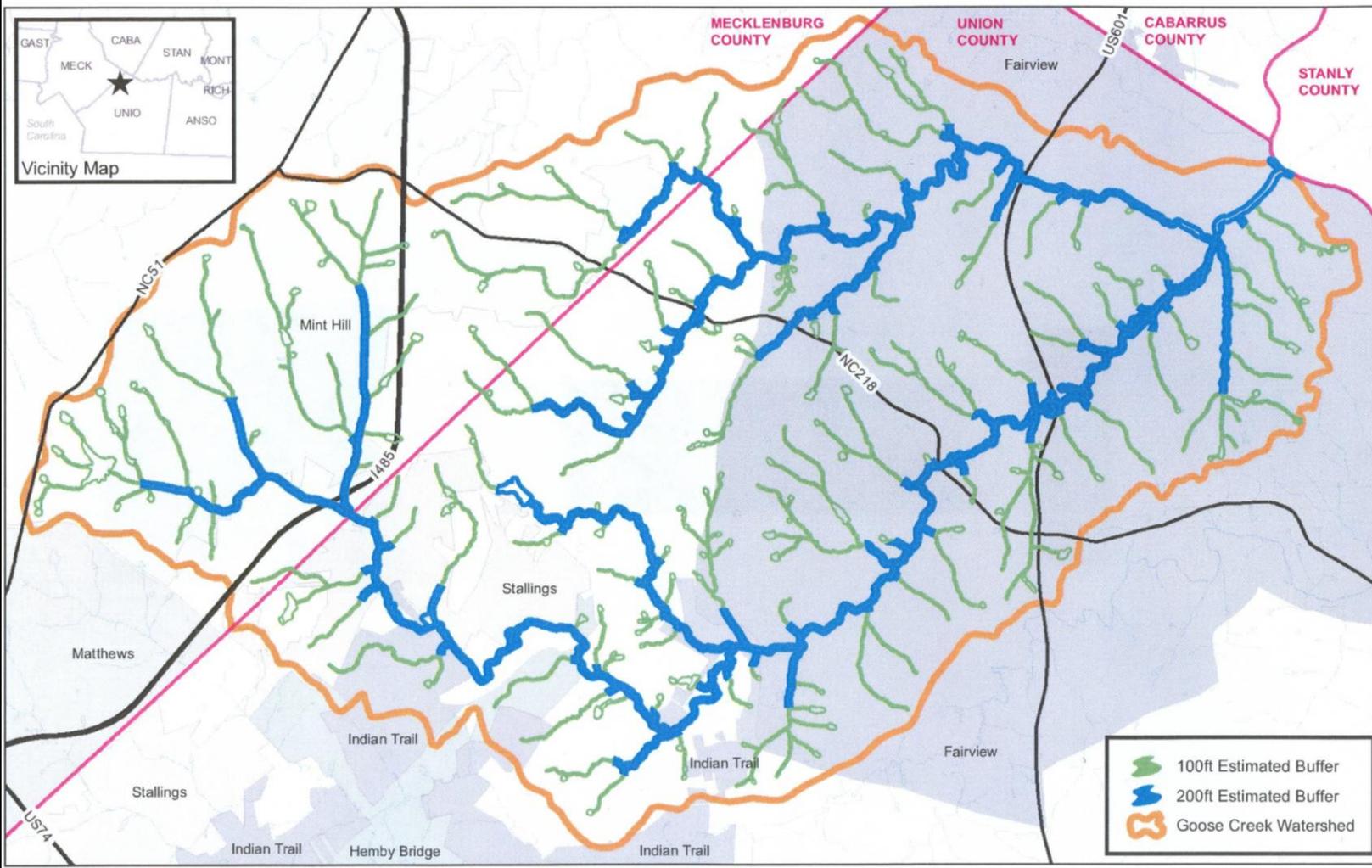
- ✓ Periodic maintenance of modified natural streams such as canals and a grassed travelway on one side of the surface water when alternative forms of maintenance access are not practical.

**NOT ALLOWED in the entire 100-foot or 200-foot buffer**

- ✗ Application of fertilizer is not allowed except as necessary for permanent stabilization. Broadcast application of fertilizer or herbicides to the adjacent forest stand shall be conducted so that the chemicals are not applied directly to or allowed to drift into the riparian buffer.
- ✗ Access roads and skid trails are prohibited except for temporary and permanent stream crossings established in accordance with the FPGs.
- ✗ High intensity prescribed burns shall not be allowed.
- ✗ Soil disturbing site preparation activities are not allowed.
- ✗ Logging decks and sawmill sites shall not be placed in the riparian buffer.

# Goose Creek Watershed Estimated Buffers\*

Fairview, Hemby Bridge, Indian Trail, Matthews, Mint Hill, Stallings, Mecklenburg County, Union County - North Carolina



	100ft Estimated Buffer
	200ft Estimated Buffer
	Goose Creek Watershed



Map Source: NCDWQ, Published: 2Feb2009; Municipality Source: NCDOT, Published Jun2007; Hydrography Source: NCDWQ, Published: 29Nov2007  
 \*On-site determinations by DWQ or delegated local authorities are required for determining locations of streams and buffers. This map does not show all buffers.  
 This map is only as good as the data available when it was printed and is not intended to replace any rule, regulation or classification schedule.

North Carolina Division of Water Quality - 512 N. Salisbury St. Raleigh, NC 27604 (919)807-6300





# FORESTRY Leaflets

July 2012

WQ-14

## A Guide to Implementing the Jordan Lake Water Supply Watershed Riparian Buffer Rules for Forest Management Activities

Effective August 11, 2009, N.C. Administrative Code rule 15A NCAC 2B .0263 through .0273 and .0311(p) requires protecting and maintaining riparian areas along waterbodies located throughout the Jordan Lake watershed. This watershed includes the three tributary subwatersheds known as the Upper New Hope, the Lower New Hope, and the Haw River arms of the Jordan Reservoir (see map). Contact the N.C. Division of Water Resources (DWR) Raleigh or Winston-Salem Regional Offices for more information.

### Where To Apply This Riparian Buffer Rule

This rule applies to perennial streams, intermittent streams, ponds, lakes, and reservoirs located in the Jordan Lake Water Supply Watershed if it is approximately shown on any of the following references:

- It appears on the most recent version of a USGS 1:24000 (“7.5 Minute Quad”) topographic map.
- It appears on the most recent published version of an USDA-NRCS Soil Survey map. For a list of acceptable versions, visit <http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/maps>. Click on the “Most recent published Soil Survey Table” link.
- Other maps approved by the Environmental Management Commission (EMC) as more accurate than those identified above.

The Jordan Lake Water Supply Watershed Riparian Buffer Rules do not apply to the following waterbodies:

- ✗ Any “surface waters” that do not appear on any of the referenced maps.
- ✗ Any ephemeral streams.
- ✗ Ditches or other man-made water conveyances, other than modified natural streams.
- ✗ Man-made ponds and lakes that are located outside natural drainage ways.
- ✗ Areas mapped as intermittent streams, perennial streams, lakes, ponds, or reservoirs on the most recent versions of either a USGS 1:24000 scale topographic map or published NRCS soil survey map where no perennial waterbody, intermittent waterbody, lake, pond or reservoir actually exists on the ground. This type of determination must be made by DWQ or those to which they have delegated that authority.

- Seek advice from a professional certified in DWR’s “Surface Water Identification Training and Certification Program” when determining this rule’s applicability. The NC Forest Service has personnel that are certified through this program for making determinations in forestry situations.
- Modified streams may look like ditches, but still require implementing these watershed buffer rules. This leaflet is not intended to provide legal advice or final interpretation of the Jordan Lake Water Supply Watershed riparian buffer rules.
- On waterbodies where the Jordan Lake Water Supply Watershed riparian buffer rules do not apply, a Streamside Management Zone (SMZ) of appropriate width is still required to comply with the Forest Practices Guidelines Related to Water Quality (FPGs). Information on FPGs: <http://ncforestservice.gov/publications/Forestry%20Leaflets/WQ01.pdf>
- There may be additional requirements of the Jordan Lake Water Supply Watershed Riparian Buffer Rules not covered in this Leaflet with which forestry activities must comply. Check the entire rule document at <http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules> for all necessary requirements related to road construction and other land disturbing activities.

### How To Measure the Required Buffer Width

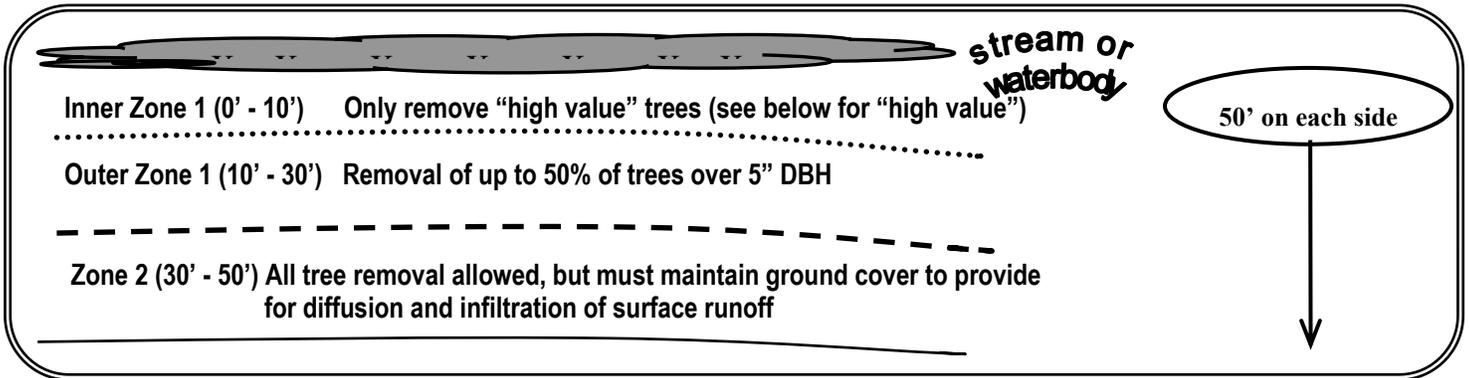
**For streams:** Measurement will “begin at the top of the bank and extend landward” and “on all sides of the surface water, measured horizontally on a line perpendicular to a vertical line marking the top of the bank.”

**For other waterbodies:** Measurement will “begin at the normal water level and extend landward” and will be “measured horizontally on a line perpendicular to a vertical line marking the normal water level.”

## Required Riparian Buffer Widths and Zones

The buffer area is made up of two zones that together are 50-foot wide around all sides of the waterbody

- Zone 1:** The closest 30 feet from the edge of the waterbody extending towards land. Zone 1 is subdivided into two areas that have different selective harvesting requirements. See illustration below.
- Zone 2:** The next 20 feet towards land, extending from the end of Zone 1.



## Timber Harvesting In The Jordan Lake Watershed Riparian Buffer

**Timber harvesting is only allowed to occur in Zone 1 (30 feet closest to the stream or waterbody) of the buffer if:**

- 1) A forest management plan for the property is prepared, **or**
  - 2) The property is enrolled in that county's Present-Use Tax Valuation Program for forestry use.
- Copies of either the approval of the deferment for use value under forestry or the forest management plan shall be produced upon request.

### Zone 1 - Inner 10 feet: 0 to 10 feet (land immediately adjacent to the stream or waterbody)

<b>Allowed</b>	<ul style="list-style-type: none"> <li>• Selective harvest of individual "High Value" trees. Trees shall be removed with minimum disturbance to soil and residual vegetation.</li> </ul>
<b>Allowed with Restrictions</b>	<ul style="list-style-type: none"> <li>• "High Value" Pine trees are defined as any tree with a Diameter Breast Height (DBH) of 14" and greater, <b>or</b> a stump diameter of 18" and greater.</li> <li>• "High Value" Hardwood and Wetland trees are defined as any tree with a DBH of 16" and greater, <b>or</b> a stump diameter of 24" and greater.</li> </ul>
<b>Prohibited</b>	<ul style="list-style-type: none"> <li>• No tracked or wheeled vehicles allowed except at stream crossings designed, constructed, and maintained in accordance with FPG .0203.</li> <li>• No removal of any tree with exposed primary roots visible in the streambank. <ul style="list-style-type: none"> <li>○ Unless listed as an exempt activity under Vegetation Management in the Table of Uses, Sub-Item (9) of this Rule.</li> <li>○ It is recommended to mark/flag residual "leave" trees to make sure they are protected.</li> </ul> </li> <li>• No soil-disturbing site preparation activities.</li> </ul>

### Zone 1 - Outer 20 feet: 10 to 30 feet (land adjoining the inner 10 feet area)

<b>Allowed</b>	<ul style="list-style-type: none"> <li>• Selective harvest is allowed. Trees shall be removed with minimum disturbance to soil and residual vegetation.</li> <li>• Remaining trees left standing should be as evenly spaced as possible.</li> </ul>
<b>Allowed with Restrictions</b>	<ul style="list-style-type: none"> <li>• Tracked or wheeled vehicles are permitted for the purpose of selective timber harvesting where there is no other practical alternative for removal of individual trees and provided that activities comply with NC FPGs.</li> <li>• Harvest of no more than 50% of the trees over 5" DBH: <ul style="list-style-type: none"> <li>○ Re-entry for natural forests is allowed every 15 years.</li> <li>○ Re-entry for forest plantations is allowed every 5 years.</li> </ul> </li> </ul>
<b>Prohibited</b>	<ul style="list-style-type: none"> <li>• No removal of trees 5" DBH and smaller.</li> <li>• No soil-disturbing site preparation activities.</li> </ul>

### All of Zone 2: 30 to 50 feet (The outermost 20 feet of the entire riparian buffer)

<b>Allowed</b>	Harvest and regeneration of the forest stand is allowed, so long as there is sufficient ground cover maintained to provide for diffusion and infiltration of water runoff. <b>All activities must still comply with the FPGs.</b>
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## **Forestry Activities In The Jordan Lake Watershed Riparian Buffer**

### **Required in the Entire 50-foot Riparian Buffer**

- Diffuse flow of water shall be maintained in the riparian buffer by dispersing concentrated runoff flow and re-establishment of vegetation.
- Concentrated runoff from new ditches or man-made conveyances shall be converted to diffuse flow before the runoff enters Zone 2 of the riparian buffer.
- Periodic corrective action to restore diffuse flow shall be taken as necessary and shall be designed to impede the formation of erosion gullies.
- No new stormwater conveyances are allowed through the buffers except for those specified in Item (9) of this Rule addressing stormwater management ponds, drainage ditches, roadside ditches, and stormwater conveyances.

### **Forestry Activities Allowed in the Entire 50-foot Riparian Buffer**

- Individual trees may be treated to maintain or improve their health, form, or vigor.
- Harvesting of dead or infected trees or application of pesticides necessary to prevent or control extensive tree pest and disease infestation. These practices must be approved by the NC Forest Service for a specific site. The NC Forest Service must notify the Division of Water Resources of all approvals.
- Removal of individual trees that are in danger of causing damage to structures or human life.

### **Forestry Activities Allowed with Restrictions in the Entire 50-foot Riparian Buffer**

- Access roads and skid trails only allowed for temporary and permanent stream crossings, which are established in accordance with FPG .0203. Temporary stream crossings shall be permanently stabilized after any site disturbing activity is completed.
- Timber felling shall be directed away from the stream or waterbody.
- Skidding shall be directed away from the stream or waterbody and shall be done in a manner that minimizes soil disturbance and prevents rutting or the creation of channels.
- Natural regeneration of forest vegetation and planting of trees, shrubs, or ground cover plants to enhance the buffer shall be allowed provided that soil disturbance is minimized.
- Application of fertilizer only allowed as necessary for permanent stabilization. Broadcast application of fertilizer or herbicides to the adjacent forest stands shall be conducted so that the chemicals are not applied directly to or allowed to drift into buffer.

### **Forestry Activities Not Allowed in the 50-foot Riparian Buffer**

- ✗ NO logging decks or sawmill sites placed in the buffer.
- ✗ NO high intensity prescribed burns.

