

## EXECUTIVE SUMMARY

Session Law 2011-394 (17)(e), required the Department of Environment and Natural Resources (DENR) to study the application and implementation of the Neuse River Basin Riparian Buffer Rules (15A NCAC 02B .0233) and Tar-Pamlico River Basin Riparian Buffer Rules (15A NCAC 02B .0259). Specifically, DENR considered:

- (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- (ii) Exempting all single family residence lots (lots of two acres in size or less) platted prior to August 1, 2000.

DENR solicited comments from the development community, the agricultural community, the forestry industry, the environmental community, local governments, property owners and other interested parties through a memo posted on the Division of Water Quality(DWQ) public notice website and the DWQ 401 and Planning listservs. This memo had a 30-day public comment period.

By the end of the comment period, 37 letters were received. 10 of the letters recommended changes to the current buffer rules.

The common themes brought up in the 10 letters recommending changes to the buffer rules included exempting all single family residential lots platted prior to August 1, 2000, including wetlands and other coastal vegetation towards part of the 50-foot protected riparian buffer measurement, and combining the buffer rules made into one comprehensive rule. The 27 letters of support however did not wish to see them revised or weakened.

Scientific literature indicates that a 50-foot buffer, as required by the current Neuse and Tar-Pamlico buffer rules, is necessary for effective nutrient removal from existing landscapes to protect the water quality in the Neuse and Tar-Pamlico River Basins. Removing the existing riparian buffer requirements would place an increased burden for nutrient reductions on other sources, such as wastewater treatment plants, industrial dischargers, local government stormwater systems and agriculture. Getting additional reductions from those sources is typically more costly than maintaining existing riparian buffers.

Under Session Law 2011-394(17), a grandfather provision allows some encroachment into the buffer if that is necessary to construct a residence on a single-family residential lot (two acres in size or less) platted lots prior to Aug. 1, 2000 in the coastal area. The provision allows additional flexibility in siting structures on these small, previously platted lots without having to go through a variance process for impacts in Zone 2 of the protected riparian buffer.

DENR recommends expanding the grandfather provision outlined in Session Law 2011-394 to all single family residential lots (lots of two acres in size or less) throughout the Neuse and Tar-Pamlico River Basins. As provided under S.L. 2011-394, where application of the riparian buffer requirements would preclude construction of a single-family residence and necessary

infrastructure, such as an on-site wastewater system, this would allow a single-family residence to encroach on the buffer if all of the following conditions are met:

- (1) The residence is set back the maximum feasible distance from the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable, on the existing lot and designed to minimize encroachment into the riparian buffer.
- (2) The residence is set back a minimum of 30 feet landward of the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable.
- (3) Stormwater generated by new impervious surface within the riparian buffer is treated and diffuse flow of stormwater is maintained through the buffer.
- (4) If the residence will be served by an on-site wastewater system, no part of the septic tank or drainfield may encroach into the riparian buffer.

**STATE OF NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES**

**Study of the Neuse Buffer Rules (15A NCAC 02B .0233) and the  
Tar-Pamlico Buffer Rules (15A NCAC 02B .0259)  
Pursuant to SL 2011-394**

**Feb. 1, 2012**

## **INTRODUCTION**

Pursuant to Session Law 2011-394 (17)(e), the Department of Environment and Natural Resources (DENR) conducted a study of the application and implementation of the Neuse River Basin Riparian Buffer Rules (15A NCAC 02B .0233) and Tar-Pamlico River Basin Riparian Buffer Rules (15A NCAC 02B .0259). Specifically, DENR considered:

- (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- (ii) Exempting all single family residence lots (lots of two acres in size or less) platted prior to Aug. 1, 2000.

DENR solicited comments from the development community, the agricultural community, the forestry industry, the environmental community, local governments, property owners and other interested parties through a memo posted on the Division of Water Quality(DWQ) public notice website and the DWQ 401 and Planning listservs. This memo had a 30-day public comment period.

## **HISTORY**

### Neuse

During the summer of 1995, algal blooms and massive fish kills in the Neuse River and the Neuse River estuary led the N.C. General Assembly to pass Session Law 1995-572. The session law directed the Environmental Management Commission (EMC) to develop a plan to reduce the average annual load of nitrogen to the Neuse River estuary by 30 percent from 1991-1995 levels. After an extensive stakeholder process, the EMC adopted the Neuse River Basin - Nutrient Sensitive Waters Management Strategy. To reach the necessary 30% reduction in nutrient loading, the strategy included both stricter limits on nitrogen and phosphorus in wastewater discharges (from wastewater treatment plants and other facilities) and measures to reduce nitrogen loading from non-point sources of nutrients. The non-point sources included runoff from developed areas that carried nitrogen and phosphorus from fertilizer, failing septic systems and other sources into the Neuse River tributaries. The Neuse River Basin Riparian Buffer Rules were developed to reduce the amount of nitrogen and phosphorus carried by runoff from developed areas to the Neuse River system.

Temporary buffer rules were adopted by the EMC on June 11, 1997. Session Law 1998-221 directed the EMC to revise the buffer rules such that they protected and enhanced water quality, but did not impose an undue burden on the regulated public. A stakeholder advisory committee, consisting of 23 organizations that included developers, the agricultural community, local governments, the mining industry, the forestry industry and environmental parties, was formed to revise the rule. Permanent buffer rules were adopted by the EMC and became effective Aug.1, 2000.

## Tar-Pamlico

In the late 1980s, the Pamlico estuary experienced increased algal blooms and fish kills that were linked to excessive nutrient levels in the river. The entire Tar-Pamlico River Basin was designated as Nutrient Sensitive Waters (NSW) by the EMC in 1989, which required the state to develop a nutrient management strategy for the basin. This management strategy involved a two-phase approach. The first phase produced an innovative point source/nonpoint source “trading” program that allowed point sources, such as wastewater treatment plants and industry, to achieve reductions in nutrient loading in a more cost-effective way by allowing the trading of nutrient reduction credits between dischargers. The second phase established two goals: a 30 percent reduction in nitrogen loading from 1991 levels and holding phosphorus loading to 1991 levels.

In addition to point sources, the second phase called on nonpoint sources to contribute to the reduction goals, and established a set of nonpoint source rules addressing agriculture, urban stormwater, fertilizer management across all land uses, and riparian buffer protection. After an extensive stakeholder process, the EMC adopted the Tar-Pamlico River Basin: Nutrient Sensitive Waters Management Strategy, which included the Tar-Pamlico River Basin Riparian Buffer Rules. The Tar-Pamlico Buffer Rules went into effect on Jan. 1, 2000, and were revised effective Aug. 1, 2000.

State law directs the EMC to determine the relative contribution of nutrients from different types of sources contributing to excess nutrient loading (wastewater discharges, development activity, agricultural operations, etc.) and develop a nutrient management strategy based on the proportional contribution from each category. DWQ uses water quality monitoring and modeling to determine the allocation of nutrient loading between the different source categories. That information becomes the basis for a nutrient management strategy that -- as directed by the General Assembly -- ensures that all sources jointly share the responsibility of reducing the pollutants in the State’s waters in a fair, reasonable and proportionate manner. N.C. General Statute 143-215.8B. The riparian buffer rules are one of the most important tools for addressing nutrient loading from development activity.

## **IMPORTANCE OF THE RIPARIAN BUFFER**

A riparian buffer is a strip of forested or vegetated land bordering a body of water. The riparian buffer performs many natural functions including: filtering sediment, nutrients and other contaminants; reducing the effect of drought on stream flow; supporting aquatic habitat by providing woody debris to the stream, controlling temperature and controlling light; and providing habitat for wildlife (Wenger 1999 and Schueler 1995). Riparian buffers also provide many financial benefits to both the property owner and the community, including: minimizing flood damage; decreasing the need for public investment in stormwater management, flood control and pollution removal; increased property values; and reduced land maintenance costs (compared to formal lawns and other landscaped areas) (Schueler 1995).

### Nutrient, Sediment and Pollutant Removal

The Neuse and Tar-Pamlico buffer requirements exist to take advantage of the riparian buffer's ability to reduce the amount of nutrients entering surface waters from developed areas. Riparian buffers slow the flow of stormwater runoff, greatly reducing the amount of sediment entering water bodies. They also maximize filtering of stormwater runoff through the soil, causing excess nutrients to be taken up by plant roots and to bind to soil particles.

Studies show that the first 50 feet adjacent to a body of water provides the highest proportion of water quality functions. They have demonstrated that riparian buffers remove 60-97 percent of sediment, 4-80 percent of nitrogen, and 28-77 percent of phosphorus (Peterjohn and Correll 1984, USEPA 1995 and Lowrance et al. 1995). Dillaha et al. (1988) found that even a fairly narrow buffer of 15 feet removed 76-87 percent of sediment while wider buffers of 30 feet were more effective and removed from 88-95 percent of sediment. Mayer et al. (2007) examined the results of 89 buffers from 45 published studies and concluded that riparian buffers were very effective in removing nitrogen from water flowing through the riparian zone. Specifically, they found that a 50-foot wide riparian buffer removed about 70 percent of the total nitrogen entering the buffer through stormwater. Wenger (1999) reviewed four published studies and found that a 30-foot wide riparian buffer removed 46-79 percent of the total phosphorus.

The Neuse and Tar Pamlico buffer rules were based on science that examined the relationship between buffer width and nutrient removal.

### Other Buffer Benefits

Although the Neuse and Tar-Pamlico buffer rules were adopted to reduce excess nutrient loading, riparian buffers have other benefits including:

#### Removal of Pesticides, Heavy Metals, Bacteria and Viruses

Buffers can also be an effective tool at minimizing pesticides and heavy metals in our waterways. Neary et al. (1993) reviewed several studies in the Southeast and found that high concentrations of pesticides in water only occurred when there was no protected riparian buffer or pesticides were applied within the buffer. A 1992 study by the Metropolitan Seattle Water Pollution Control Department found that riparian buffers were effective at removing/retaining hydrocarbons and metals from stormwater runoff (Herson-Jones et al. 1995).

Buffers have also been shown to be effective at removing pathogens such as bacteria and viruses from stormwater runoff. Trask et al. (2004) reported that buffers were very effective in removing *Cryptosporidium parvum* from simulated runoff. Similarly, Collins et al. (2004) found that fecal bacteria (*E. coli* and *Campylobacter sp.*) were removed by buffer strips and concluded that buffers of at least 15 feet were needed to markedly reduce the levels of fecal bacteria. Finally, Stout et al. (2005) examined runoff transport of fecal bacteria from manure and concluded that buffers are effective at removing these pollutants.

#### Flood Control

Riparian buffers slow stormwater runoff, allowing water to infiltrate the soil and recharge the groundwater supply. This helps control flooding and maintain stream flow during

dryer times of the year (Connecticut River Joint Commissions 1998). It also replenishes the water supply during periods of lower rainfall (Virginia Department of Forestry 2011).

#### Streambank Stabilization

Wooded buffers have significant effect on stabilizing stream banks and preventing erosion which can impact downstream waters. A study of more than 700 stream bends found that 67 percent of bends without vegetation eroded during a storm, while only 14 percent of bends with vegetation showed erosion (Beeson and Doyle 1995).

#### Maintaining Waterfront Property Value

A study done in Craven County found that waterfront property commands a higher premium compared to an otherwise equivalent property (Bin et. al., 2008). The study also found that the mandatory riparian buffer rules did not lower waterfront property values. The benefits that buffers provide in the form of improved water quality and general aesthetics may actually enhance riparian property values.

A study done in Minnesota found that waterfront properties on lakes with better water quality were purchased at a higher price than those on lakes with lower water quality (Krysel et al. 2003). Studies completed in Michigan, Maine and the Chesapeake Bay also found that water quality had a significant effect on residential property values (Brashares 1995; Michael et al. 1996; Boyle et al. 1998, and Leggett & Bockstael 2000).

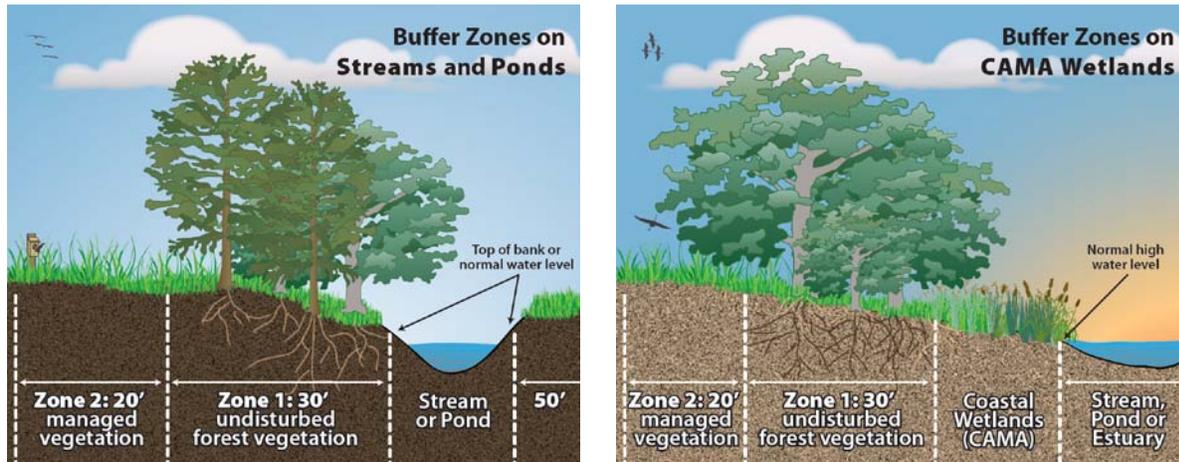
#### Lower Cost Alternative

According to USDA economists, 40-45 million acres of cropland have been converted to conservation areas in Maryland at an annual cost of \$1 billion. These conservation areas have generated \$3.5-4.5 billion annually in water quality benefits, including reduced erosion, increased recreational fishing, navigation improvements, water storage, nutrient removal and flood control (Lynch et. al. 1999). Having an existing riparian buffer is less expensive than having to later acquire land for conservation.

### **BUFFER RULES OVERVIEW**

The rules require a 50-foot riparian buffer that is divided into two zones. The 30 feet closest to the water (Zone 1) must remain undisturbed. The outer 20 feet (Zone 2) can be managed vegetation, such as lawns or shrubbery. The riparian buffer rules also require diffuse flow of stormwater runoff. Diffuse flow refers to overland water flow that is spread out over the landscape, not concentrated into a defined channel. It is required on all buffered streams and must be achieved before stormwater runoff enters the riparian buffer from any new ditch or manmade conveyance. The buffers apply to intermittent streams, perennial streams, lakes, ponds, estuaries and modified natural streams that are depicted on the most recent printed version of the soil survey map prepared by the Natural Resources Conservation Service or the 1:24,000 scale quadrangle topographic map prepared by the U.S. Geologic Survey.

Figure 1



The riparian buffer rules allow for uses that are present and ongoing (i.e. existing uses) to remain in the buffer. For new uses, the riparian buffer rules include a Table of Uses that lists the activities allowed in each zone of the buffer. (Appendix 1- Neuse Table of Uses. Appendix 2- Tar-Pamlico Table of Uses). There are three different categories of allowable activities:

Exempt uses are allowed in the riparian buffer without approval from DWQ.

Allowable uses may occur in the buffer only after written authorization from DWQ.

Allowable with mitigation uses may occur in the buffer only after written authorization from DWQ that includes a mitigation strategy.

Uses that are listed as prohibited or uses that are not included in the Table of Uses are prohibited unless a variance is granted. Minor variances can be granted by DWQ for impacts to Zone 2 only. Major variances can be granted by the EMC for impacts to Zone 1 or Zones 1 and 2.

Soon after adopting the final version of the Neuse buffer rules, the Environmental Management Commission also issued a general major variance for the Neuse and Tar-Pamlico basins to allow additional buffer impacts on lots of less than two acres that were platted prior to August 1, 2000 (the date the final buffer rules went into effect in the Neuse River basin). Under the variance, a single-family residence in the coastal counties in the Neuse and Tar-Pamlico basins could encroach on the buffer as long as buffer impacts were minimized and any on-site wastewater system was installed landward of the buffer. There were also some additional conditions related to management of stormwater. The variance was only available to the person who owned the property at the time the buffer rules went into effect, although the variance approval could be transferred from the original owner to a later purchaser.

In 2011, the General Assembly adopted a “grandfather” provision for lots of less than 2 acres that were platted prior to August 1, 2000 in the Neuse or the Tar Pamlico basin. (Session Law 2011-394). The new grandfather provision, which has conditions very similar to the earlier EMC

variance, will eliminate the need to request a variance and be available to any lot owner without regard to when the property was purchased.

Both the EMC variance and the more recent session law were intended to prevent small coastal lots that were platted before the buffer rules went into effect from being unbuildable as a result of the buffer requirements. The conditions strike a balance between allowing use of these lots for residential development as originally intended, while still maintaining water quality benefits afforded by conserving as much of the riparian buffer as possible.

### **COMMENTS RECEIVED**

DENR solicited comments from the development community, the agricultural community, the forestry industry, the environmental community, local governments, property owners and other interested parties through a memo posted on the DWQ public notice website and the DWQ 401 and Planning listservs. This memo had a 30-day public comment period (see page 15).

By the end of the comment period, 36 letters were received (see pages 16 to 66). 10 of the letters recommended changes to the current buffer rules while 26 letters supported the current buffer rules and did not wish to see them revised or weakened.

#### **Summary of Comments Recommending Changes to the Buffer Rules (10 of 37 Letters)**

1. Nine letters were received from parties in favor of exempting all single family residential lots platted prior to Aug. 1, 2000.

*DENR does not recommend exempting all single family residential lots in the Neuse and Tar-Pamlico River Basins as this would significantly reduce the nutrient reduction benefits buffers provide. This effect would be cumulative throughout the basins and could be detrimental to water quality. From Aug.1, 2000 to Nov. 1, 2011, approximately 500 buffer authorizations were issued for single family private residential properties. Approximately 350 commercial buffer authorizations were issued during that same time period.*

2. Five letters stated that coastal wetlands and other coastal vegetation should be measured as part of the 50-foot protected riparian buffer.

*Currently for the coastal counties that are in the Neuse and Tar-Pamlico basins, the riparian buffer measurement starts landward of the coastal wetlands (as shown in Figure 1). DENR does not recommend altering the method for measuring the protected riparian buffer on shorelines where there are coastal wetlands. The term “coastal wetland” does not refer to all wetlands in the coastal counties; it refers specifically to what are commonly called “salt marshes” – wetlands that are regularly or irregularly flooded by tides. Buffers are measured from the landward edge of these salt marshes because the marsh functions as part of the estuarine surface water system.*

*As a result of the close connection between estuarine waters and salt marshes, measuring the buffer in a way that allows coastal wetlands to form part of the buffer would not serve the intended purpose of keeping nutrients and other pollutants out of the waters.*

*Also, on some shorelines the fringe of coastal wetlands may also be more than fifty feet wide and counting those wetlands as part of the 50 foot riparian buffer would suggest to property owners that it may be possible to build in the coastal wetland itself. That would potentially create a conflict with federal law and other state laws. Restrictions on development in coastal wetlands exist to protect fish and shellfish that make up North Carolina's commercial and recreational fishing industry. Ninety percent of the total value of North Carolina's commercial catch is supported by the coastal marsh system [N.C. General Statute 113A-102 (a)].*

3. One letter stated the provision in [15A NCAC 02B .0233(9)(a)(i)(E) and [15A NCAC 02B. 0259(9)(a)(i)(E)] should be deleted. That provision states that the applicant is not eligible to receive a variance if the property was purchased after the effective date of the buffer rule.

*The General Major Variance issued by the EMC for development of small lots platted before August 1, 2001 was limited to property owners who had purchased their lots before the buffer rules went into effect. The commenter's concern about this limitation on the availability of the General Major Variance has recently been addressed in Session Law 2011-394 which created a grandfather provision that applies to those previously platted lots. The grandfather provision can be used by anyone who owns a lot of less than two acres in size that was platted prior to August 1, 2001 without regard to when they may have purchased the property.*

4. One letter stated there should be a general permit for buffer disturbance associated with piping streams, construction of bulkheads and retaining walls and building support pilings.

*Currently, there is a general permit for shoreline stabilization (including bulkhead installation) and a general permit for creation of access ways to piers and dock facilities. Piping streams could include any number of uses and thus would be difficult to permit under a general permit. Buildings, including their support pilings, require a major variance; therefore a general permit cannot be developed. Since there is not a high demand for permitting retaining walls, DENR does not plan to develop a general permit for this activity at this time.*

5. Four letters came from parties wanting to see changes to the vegetation in the buffers in the coastal counties to allow for a better viewshed. One stated there should not be a requirement to have any vegetation above 2 feet in height in order to preserve the value of the property and to protect the water body, and the other two comments stated any vegetation that is less than 5 inches diameter breast height should be allowed to be cleared without significant ground disturbances and left in its natural condition.

*In the current buffer rules, Zone 2 must remain vegetated, which can include grass or any other type of vegetation, at any height (including less than 2 feet). Zone 1 must remain*

*undisturbed; however, existing trees and shrubs can be pruned without a permit and invasive vegetation can be removed without a permit.*

*Vegetation that is above 2 feet in height would primarily include native hardwood trees and shrubs. The well-developed root structure associated with native hardwood trees and shrubs provide for the nutrient, sediment and pollutant removal and more effective shoreline stabilization. The native hardwood tree canopy provides temperature control, light control and terrestrial habitat.*

*To maintain the important water quality functions of the riparian buffer, the current protections to the vegetation should remain in effect.*

6. One letter stated that internal memos between staff members or rulings from court cases should not have any effect on a property owner who was not a party to the case that the memo or ruling referred to.

*Where applicants have raised issues of ambiguity of the current buffer rules, DENR staff responded with memos to clarify the interpretation of the rules. DWQ provides public notice of these interpretation memos on the DWQ riparian buffer website and through the DWQ 401 listserv. DWQ will review those buffer interpretation memos to determine whether any need to be adopted as rule amendments. Court decisions that deal with interpretation of state laws and rules can have an effect that goes beyond the parties to the case. That is especially true if the decision comes from an appeals courts, because all other courts in the state have to follow those decisions. DENR also has a legal obligation to follow the law, including any interpretations of the law made by the state's courts.*

7. Two letters were from parties wanting to see changes in how mitigation is regulated in these two basins.

*Pursuant to General Statute 143-214.20, DENR is moving forward with a draft consolidated buffer mitigation rule based on stakeholder input on how buffer mitigation is regulated.*

8. One letter suggested the correction of a codification error in the purpose statement of the Tar-Pamlico Riparian Buffer Rule that will protect riparian owners from having to defend against erroneous arguments about the purpose of the rule.

*DENR appreciates this comment and will research this further.*

9. Two letters stated the Neuse and Tar-Pamlico buffer rules should be made into one comprehensive rule and one letter stated these buffer rules should be clarified.

*DENR concurs that one comprehensive rule would be easier to understand and implement. DENR would need to address this modification through the rulemaking process.*

10. One letter stated building set-back provisions should be re-examined to ensure conformity with local regulations and to prevent duplication.

*DENR does try to coordinate with local governments to prevent duplication when possible. However, DENR believes the building set-back provisions are necessary for the riparian buffer to function and protect water quality.*

11. One letter stated that the current Best Management Practices (BMPs) should be revised by removing all ineffective or outdated techniques.

*DENR does revise the Stormwater BMP manual regularly based on public input and new and innovative science and engineering standards.*

12. One letter stated these rules have a significant impact on waterfront properties and annual studies by NCDENR indicate no improvement in water quality, so these rules need to be curtailed or sunsetted in the future.

*Removing the existing function of the existing buffers would increase the nonpoint source load to the water bodies. Per General Statute 143-215.8B, all point sources and nonpoint sources of pollutants jointly share the responsibility of reducing the pollutants in the State's waters in a fair, reasonable and proportionate manner. Removing the existing riparian buffer requirements would shift the burden of nutrient reductions to other sources such as farmers, local governments, etc., with engineered controls such as constructed wetlands and bioretention cells, which would be much more costly than maintaining existing riparian buffers.*

13. One letter stated that all variances should be handled at the staff level and not require EMC approval.

*Currently, minor variances for Zone 2 impacts are handled at the staff level. Major variances for Zone 1 impacts do require EMC approval. The EMC processes approximately 3-10 major variances a year and DENR processes approximately 45-50 minor variances a year. DENR recommends keeping the EMC as the decision maker for major variances due to the low volume of major variance applications and due to the fact that the EMC has flexibility to approve variances that have very unique circumstances.*

14. One letter stated that all "Allowable" activities in the Table of Uses should be converted to "Regulation by Rule." This approach eliminates the need to have staff approve such activities and will save considerable time and expense for property owners.

*Within the Table of Uses for each riparian buffer rule, there are "Exempt" uses that do not require DENR approval. "Allowable" uses require DENR staff review and approval prior to the activity occurring in the buffer. By having DENR staff review the "Allowable" use applications, the staff can ensure that the final permitted activity will minimize the impacts to the buffers and provide protection to the natural resources, while still allowing development to occur within the buffers. DENR recommends keeping the current approval process in place for allowable uses.*

15. One letter proposed only requiring a 30-foot riparian buffer, but in exchange for "surrendering" Zone 2, the state should require a 30-foot riparian buffer in other river basins, targeting the most impaired basins first.

*Scientific literature shows the 50-foot wide buffer is necessary to achieve the 30 percent nitrogen reduction goals required by Session Law 1995-572. The buffer rules were created in response to significant nutrient loads to the Neuse and Tar-Pamlico estuaries. Maintaining existing buffers in these two basins is part of an overall nutrient management strategy to reduce the nutrient loads in these two estuaries. Per General Statute 143-215.8B, all point sources and nonpoint sources of pollutants jointly share the responsibility of reducing the pollutants in the state's waters in a fair, reasonable and proportionate manner. Removing the existing riparian buffer requirements would shift the burden of nutrient reductions to other sources, such as farmers, local governments, etc., with engineered controls such as constructed wetlands and bioretention cells, which would be much more costly than maintaining existing riparian buffers. DENR does not support reducing the width of the protected riparian buffer.*

**Summary of Comments Supporting Current Buffer Rules (27 of 37 Letters)**

16. Two letters stated that protection of forested riparian buffers is widely recognized as the most effective, reliable and low-cost way to keep streambanks from eroding and to retain or assimilate many common stormwater pollutants.
17. One letter stated there is no practical artificial means of achieving the combination of stream-bank stabilization (erosion protection) and stormwater infiltration (pollutant removal) that riparian tree roots and undisturbed forest soils provide.
18. Four letters were from parties that did not want single family residential lots platted prior to August 2000 to be exempted. Single family residential lots comprise a very large proportion of existing developed and yet-to-be-developed stream-front parcels in the Neuse and Tar-Pamlico basins, as well as elsewhere throughout North Carolina. Another similar comment for not exempting lots was for possible lawsuits associated with owners of lots that would now be considered exempt wanting compensation.
19. Twenty-three letters stated this buffer zone was established to minimize disruption to stormwater runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats.
20. Two letters stated that continued water quality degradation will result in high cleanup and compliance costs.

## RECOMMENDATIONS

Based on the results of the study, DENR offers the following recommendations:

- (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins.

*Scientific literature indicates that a 50-foot buffer, as required by the current Neuse and Tar-Pamlico buffer rules, is necessary for effective nutrient removal from existing landscapes to protect the water quality in the Neuse and Tar-Pamlico River Basins. Removing the existing riparian buffer requirements would place an increased burden for nutrient reductions on other sources, such as wastewater treatment plants, industrial dischargers, local government stormwater systems and agriculture. Getting additional reductions from those sources is typically more costly than maintaining existing riparian buffers.*

- (ii) Exempting all single family residence lots (lots of two acres in size or less) platted prior to Aug. 1, 2000.

*Under Session Law 2011-394(17), a grandfather provision allows some encroachment into the buffer if that is necessary to construct a residence on a single-family residential lot (two acres in size or less) platted prior to Aug. 1, 2000 in the coastal area. The provision allows additional flexibility in siting structures on these small, previously platted lots without having to go through a variance process for impacts in Zone 2 of the protected riparian buffer.*

*DENR recommends expanding the grandfather provision outlined in Session Law 2011-394 to all single family residential lots (lots of two acres in size or less) throughout the Neuse and Tar-Pamlico River Basins. As provided under S.L. 2011-394, where application of the riparian buffer requirements would preclude construction of a single-family residence and necessary infrastructure, such as an on-site wastewater system, this would allow a single-family residence to encroach on the buffer if all of the following conditions are met:*

- (1) The residence is set back the maximum feasible distance from the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable, on the existing lot and designed to minimize encroachment into the riparian buffer.*
- (2) The residence is set back a minimum of 30 feet landward of the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable.*
- (3) Stormwater generated by new impervious surface within the riparian buffer is treated and diffuse flow of stormwater is maintained through the buffer.*

*(4) If the residence will be served by an on-site wastewater system, no part of the septic tank or drainfield may encroach into the riparian buffer.*

### **CONCLUSION**

Scientific literature indicates that a 50-foot riparian buffer performs many functions that protect water quality, including nutrient, sediment and pollutant removal, flood and temperature control, and stream bank stabilization. The Neuse and Tar Pamlico buffer rules were adopted specifically to address nutrient loading from developed areas as part of a larger nutrient management strategy that also requires reductions from municipal and industrial dischargers and agriculture. Removing the existing riparian buffer requirements would shift the burden of additional nutrient reductions to those other sources, such as farmers, local governments, etc., which would be much more costly than maintaining existing riparian buffers.

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North Carolina Department of Environment and Natural Resources

Division of Water Quality  
Coleen H. Sullins  
Director

Beverly Eaves Perdue  
Governor

Dee Freeman  
Secretary

August 18, 2011

TO: 401 Water Quality Certification Mailing List and Other Interested Parties

FROM: <sup>CBK</sup> Cyndi Karoly, Wetlands and Stormwater Branch Manager

RE: Study of the Neuse and Tar-Pamlico Riparian Buffer Rules

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The purpose of this Public Notice is outline below. This notice is available electronically at <http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices>.

Study of the Neuse and Tar-Pamlico Riparian Buffer Rules

The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

- (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- (ii) Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:

<http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules>.

A copy of Session Law 2011-394 is available at:

<http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf>.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or [Amy.Chapman@ncdenr.gov](mailto:Amy.Chapman@ncdenr.gov). If you have any questions about the study, please contact Ms. Chapman at [Amy.Chapman@ncdenr.gov](mailto:Amy.Chapman@ncdenr.gov) or 919-807-6400.

cc: DWQ Regional Wetland contacts  
Matt Matthews  
Chuck Wakild  
Coleen Sullins

September 16, 2011

Via Electronic Mail

Ms. Amy Chapman  
Wetlands, Buffers, Stormwater  
Compliance & Permitting Unit  
1650 Mail Service Center  
Raleigh, NC 27699-1650

Dear Ms. Chapman,

Please accept these comments on the Neuse and Tar-Pamlico River Basin Riparian Buffer Rules on behalf of the Tar-Pamlico Basin Association.

As mandated by session law 2011-394, the Division of Water Quality (DWQ) is seeking comments on the application and implementation of the Neuse and Tar-Pamlico River Basin Riparian buffer rules. More specifically the Division is seeking comments on:

- i. Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- ii. Exempting all single family residential lots platted prior to August 1, 2000.

**Buffers are a key component of DWQ's Nutrient Reduction Strategy**

N.C. General Statute § 143-215.8B required that the Environmental Management Commission develop and implement a basinwide management plan in the Neuse and Tar-Pamlico River Basins. Because the River Basins were designated as nutrient sensitive waters, the EMC was required to establish nutrient reduction goals to "reduce the average annual mass load of nutrients that are delivered to surface waters within the basin from point and nonpoint sources."

N.C. General Statute § 143B-282(d) required the EMC to incorporate the maximum daily loads for nutrients into "rules setting out the strategies necessary for assuring that water quality standards are met by any point or nonpoint source or by any category of point or nonpoint sources that is determined by the Commission to be contributing to water quality impairment."

DWQ's nutrient reduction strategy includes both point source agreements and nonpoint source rules. In the Tar-Pamlico River Basin, the Tar-Pamlico Basin Association of point sources has consistently exceeded its nutrient reduction requirements. Nonpoint source discharges continue to be a substantial problem in the Tar-Pamlico River Basin, as noted in the most recent

Basinwide Water Quality Plan. Riparian buffer rules are a key component of DWQ's nutrient reduction strategy for the Tar-Pamlico, as they filter nonpoint source runoff and prevent nutrients from reaching impaired water bodies.

### **Key findings from the 2010 Tar-Pamlico River Basin Water Quality Plan**

1. Despite the fact that the targeted point and nonpoint pollution sources have been able to meet their nutrient reductions, total nitrogen and total phosphorous concentrations do not show a downward trend and loads have not fallen below the 1991 baseline load goals. (WQP at 6.1)
2. The 2010 water quality assessment of the Pamlico River Estuary indicates ~28,923 acres are impaired because they failed to meet chlorophyll a water quality standards (over 10% of the samples taken within a five year data window exceeded the chlorophyll a standard of 40 µg/L). (WQP at 6.1)
3. Based on the trend analyses the TN 30% loading reduction goal has not been reached and the TP load has exceeded the 1991 maintenance level. There is also no decrease in TN or TP concentrations trends. (WQP at 6.6)
4. The implementation of the NSW strategy has thus far not resulted in meeting water quality standards in the Pamlico River Estuary. The decrease in annual loads of TP and TN below the baseline levels as shown in Figures 6-1 and 6-2 [see WQP for figures], during the drought years of 2007-2008, suggest recent nutrient loading to the estuary is likely a result of nonpoint source contributions. (WQP at 6.6)
5. The TPBA has consistently and reliably kept its nutrient loadings beneath the caps without relying on banked credits. (WQP at 6.10)
6. Due to the decades of chronic overloading, the time lag required for nonpoint source input reductions to be fully expressed, and the likelihood of nutrient cycling within the estuary, it may be some time before current reductions in nutrient loading will reflect in improved water quality, and before a definitive assessment of the effect of the strategy on the estuary can be made. (WQP at 6.29)
7. Summary and Necessary Actions: Develop, strengthen and enforce riparian buffer ordinances. (WQP at 6.31)

### **The TPBA has consistently met its nutrient reduction obligations**

The Tar-Pamlico Basin Association, which represents the largest point sources of nutrients in the Tar-Pamlico River Basin, consists of 15 WWTPs with permitted flows ranging from 0.15 to 21 million gallons per day (MGD). Throughout each phase of the Tar-Pamlico nutrient strategy, the TPBA has consistently met its nutrient reduction obligations.

- During Phase 1, the Association kept nutrient loading beneath an annually decreasing cap, reducing overall nitrogen and phosphorus loads by about 20% despite growth as reflected in a flow increase of about 7%. Members did so largely by improving treatment.

- In Phase 2, the Association stayed beneath both nitrogen and phosphorus caps, steadily reducing its loading of both nutrients despite increases in flow. In addition, the Association contributed funds and acquired grant funding for agricultural BMP implementation. The combined total of their contributions was \$850,000 that funded nutrient-reducing BMPs like nutrient management plans, waste lagoon closures, cover crops, and water control structures.
- In Phase 3, monitoring by the Association has shown their TP and TN loads to be in compliance with the required nutrient reductions.<sup>1</sup>

Members consider reductions below what is required by the cap as cushions for population growth in the watershed, ensuring that they will continue to stay below the cap as flows increase.

### **Further nutrient reductions will be increasingly expensive**

The success of the Tar-Pamlico Basin Association has come at a cost: most TPBA members have invested in upgrades to control nutrients that cost millions of dollars per plant. These costs are born by taxpayers and water and sewer users in order to comply with the Tar-Pamlico nutrient management rules. Furthermore, despite point sources' success, overall conditions in the estuary have not improved significantly. If the nutrient conditions in the watersheds continue to fall below Total Maximum Daily Load requirements, the state or EPA may reopen the TMDL and assign additional reduction obligations. The likely outcome is that this additional burden would fall on point sources, with potentially colossal financial consequences.

If greater nutrient restrictions on point sources are enforced, the Tar-Pamlico sources may be forced to invest in even more advanced technology. The U.S. EPA's Municipal Nutrient Removal Technologies Reference Document states that upgrade costs vary greatly, depending on the nature of the existing facility, the required upgrade, and other site-specific factors. Their review of the costs for modification ranged from a low of \$0.20 to a high of \$5.25 per gallon per day (gpd) capacity.<sup>2</sup> When these costs are applied to the members of the Tar-Pamlico Basin Association, retrofit costs could range from \$30,000 (assuming the low cost and smallest WWTP) to over \$15 million (assuming the high cost and largest WWTP without advanced nutrient removal technology).

### **Exempting platted lots**

Widespread, stringent application of the buffer rules is essential to maintaining current water quality levels in the Tar-Pamlico River basin. Further actions are needed to improve water quality. Without consistent application of protective rules, DWQ's own analyses make clear that

<sup>1</sup> N.C. Division of Water Quality. "Point Source Agreements." Available at: <http://portal.ncdenr.org/web/wq/ps/nps/tarpampointsource>

<sup>2</sup> U.S. Environmental Protection Agency. 2008. Municipal Nutrient Removal Technologies Reference Document. Available at: <http://water.epa.gov/scitech/wastetech/upload/mnrt-volume1.pdf>

nonpoint sources will continue to degrade water quality in these basins, limiting the benefit of reductions made by point source dischargers and agricultural sources. The buffer network in these systems cannot be effective if the properties platted before rule implementation are exempted from the rules.

If any legitimate harm were caused to individual property owners as a result of the riparian buffer rules, existing variance procedures are adequate to address it. True hardships, those that can be documented and would preclude reasonable use of property, can be remedied by seeking a major or minor variance under existing procedures. In fact, since implementation of the Tar-Pamlico buffer rule there have been a total of 36 general major variances and 59 minor variances. (WQP at 6.16)

### **Allowing buffer encroachment will cause more harm than good**

The nutrient limits established by the TMDLs in the Tar-Pamlico and Neuse River Basins must be met one way or another. If low- or no-cost measures such as preserving existing buffers are given up, then more expensive measures such as wastewater treatment plant retrofits must be undertaken. Arguments that landowners will benefit from SL2011-394 are baseless, as shown by a 2008 study conducted in the Neuse River basin that found the riparian buffer rule has no effect on residential property values.<sup>3</sup> Not only does allowing buffer encroachment not make economic sense, but it essentially creates a mechanism for indirect mitigation, in which developers pass nutrient reduction obligations onto others in the watershed – who are already required by law to reduce their own emissions. It is clear that maintaining existing riparian buffers is the least-cost option to reduce nutrient delivery to the Tar-Pamlico estuary. Each carve into a buffer is also a carve-out for developers, and increases the overall cost of compliance with the TMDLs.

### **Conclusions**

DWQ has correctly identified buffers as a critical and most cost-effective tool in their efforts to comply with the Clean Water Act and attain water quality standards in the Tar-Pamlico River Basin. Any further weakening or greater exemptions to the buffer rules will unfairly shift the costs of water quality protection and improvement to TPBA members, other nutrient sources, and to future landowners, local governments, water and sewer customers, and new development. The Tar-Pamlico Basin Association supports strong buffer rules and does not support exemptions for platted lots.

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<sup>3</sup> Okmyung, Bin, et al., Riparian Buffers and Hedonic Prices: A Quasi-Experimental Analysis of Residential Property Values in the Neuse River Basin, *American J. of Agricultural Economics*, Vol. 91, Issue 4, 1067-1079 (2009).

Signed,

*Camy P Thomas*  
CHAIRMAN

Pamlico-Tar River Foundation • Neuse Riverkeeper Foundation • Environmental Defense Fund  
Southern Environmental Law Center • NC Conservation Network • WakeUP Wake County

September 16, 2011

Via Electronic Mail

Ms. Amy Chapman  
Wetlands, Buffers, Stormwater  
Compliance & Permitting Unit  
1650 Mail Service Center  
Raleigh, NC 27699-1650

Dear Ms. Chapman,

Please accept these comments on the Neuse and Tar-Pamlico River Basin Riparian Buffer Rules (“buffer rules”) on behalf of the Pamlico-Tar River Foundation, Neuse Riverkeeper Foundation, Environmental Defense Fund, Southern Environmental Law Center, North Carolina Conservation Network, and WakeUP Wake County.

It is our understanding that the Division of Water Quality (“DWQ”) intends to submit these and other comments on the Buffer Rules in response to Session Law 2011-394’s requirement that the agency study:

- (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- (ii) Exempting all single family residential lots platted prior to August 1, 2000.

Through various documents described below, DWQ has plainly and clearly acknowledged that the Neuse and Tar-Pamlico River basins need more riparian buffers to prevent continued decline of water quality in the basins and eventually allow those rivers to meet water quality standards. As explained below, either weakening the existing rules to allow the loss of additional riparian buffers through amending or implementing the rules differently or exempting properties platted prior 2000 will result in further impairment to these river basins and will necessarily result in additional pollution-reduction burdens on point sources and agricultural dischargers. The clear environmental and economic choice is to strengthen the existing buffer rules.

#### **I. Buffers Are The Most Cost-Effective Tool For Protecting Water Quality From Nonpoint Source Pollution.**

DWQ’s strategies for restoring the health of the Tar-Pamlico and Neuse river systems are found in their respective, statutorily required basinwide management plans. *See* N.C. Gen. Stat. § 143-215.8B. Because both basins are designated as nutrient sensitive waters – a reality often highlighted by frequent chlorophyll *a* water quality standard violations and massive fish kills in the estuaries – the plans must establish nutrient reduction goals to “reduce the average annual mass load of nutrients that are delivered to surface waters within the basin from point and nonpoint sources.” Importantly, the responsibility to

reduce nutrients is to be “jointly share[d]” between point and nonpoint sources “in a fair, reasonable, and proportional manner.” *Id.*

A robust riparian buffer program is the only feasible way to meet this requirement, as illustrated by DWQ’s basinwide water quality plans for each system. The recently revised Neuse River Water Quality Plan (“Neuse WQP”) emphasizes the importance of buffers. The plan notes that point sources and agricultural users have reduced their pollution levels by approximately 65 and 45 percent, respectively. Neuse River WQP at 464, *see* Tar-Pamlico River Basin Water Quality Plan (“Tar-Pam WQP”) at 6.1 (noting that point sources and agricultural sources have met reduction goals). Despite those reductions there has not been “any significant decrease in actual nitrogen loading to the estuary,” indicating that nonpoint sources continue to prevent the system from meeting water quality standards. Neuse River WQP at 7. The WQP goes on to conclude that “more needs to be done to reduce nutrient load.” Neuse River WQP at 358. The consequences of failing to do so are clear in that “many more stream miles are likely to become impaired during the next assessment period if this trend continues.” *Id.* at 358-59. To prevent that outcome, DWQ determined that “it is important to protect the existing buffers and to establish new and possibly wider buffers where at all possible.” *Id.* at 360, *see* Tar-Pam WQP at 6.31.

For those reasons, the riparian buffer program is an essential part of the TMDLs created to address the impairments in the basins as required by the Clean Water Act. When TMDLs were established in the Neuse and Tar-Pamlico river basins, large point sources in each basin were assigned collective nitrogen reduction goals of 30% and formed discharger associations to ensure that these limits were met. The Tar-Pamlico Basin Association, which represents the largest point sources of nutrients in the Tar-Pamlico River Basin, consists of 15 WWTPs with permitted flows ranging from 0.15 to 21 million gallons per day (MGD). The Neuse River Compliance Association consists of 26 facilities that emit greater than 0.5 MGD. In the Neuse, association members invested over \$250 million in plant improvements and succeeded in reducing nitrogen discharge by 46%. The Tar-Pamlico Basin Association also reduced nitrogen levels underneath its collective cap. Further reductions below members’ allocations serve as cushions for population growth in the watershed.

Despite point sources’ success, overall conditions in both estuaries have not improved significantly. If the nutrient conditions in the watersheds continue to fall below TMDL requirements, the state or EPA may reopen the TMDLs and assign additional reduction obligations. Due to the fact that the Clean Water Act provides greater regulatory authority over point sources, the likely outcome is that the additional burden would fall on wastewater treatment plants, with potentially colossal financial consequences. In the Tar-Pamlico, most of the WWTPs have invested in upgrades that cost millions of dollars per plant, yet only a few have advanced nutrient removal technology. If greater nutrient restrictions on point sources are enforced, the Tar-Pamlico sources may be forced to invest in even more advanced technology. In the Neuse, all but a few of the large point sources have already installed advanced nutrient removal technology, therefore additional reduction requirements would first remove their cushion reserved for growth and then force the plants to find means of reducing nutrients beyond the limits of technology. Remaining options include greater regulation of small point sources, non-discharge wastewater management by large point sources, and funding best management practices to reduce nonpoint source pollution.

It would cost a 0.5 MGD facility, the smallest of the WWTPs in the Neuse River Compliance Association, \$100,000 to \$2,625,000 to upgrade to advanced nutrient removal technology that could be

necessary to offset the lost water quality benefits provided by riparian buffers if the buffer rules are relaxed or a significant number of properties are exempted.

The economic benefit of riparian buffers as opposed to other nutrient control methods was recently studied by RTI. As shown in the table below, which is excerpted a 2007 RTI report, riparian buffers offer us the least cost alternative for water quality protection and removal of nutrients. It should be noted that this study measured the cost of installing new riparian buffers. Maintaining existing buffers is, of course, even less expensive.

**Table 1: Average Costs of Best Management Practices (BMPs) for Phosphorous and Nitrogen Removal**

BMP	Nitrogen (\$/lb-N per 30 year, \$2011)		Phosphorous (\$/0.10lb-P per 30 year, \$2011)	
	Tar-Pamlico	Neuse	Tar-Pamlico	Neuse
Riparian Buffers	\$18.65	\$23.75	\$28.86	\$36.85
Stormwater Wetlands	\$87.25	\$91.02	\$69.15	\$72.93
Large Bioretention Areas	\$626.93	\$637.47	\$421.13	\$428.02
Wet Ponds	\$286.60	\$293.04	\$180.15	\$183.59

Source: RTI International 2007<sup>1</sup>

The nutrient limits established by the TMDLs in the Tar-Pamlico and Neuse River Basins are not a bureaucratic target; they are a scientific reality that also has legal consequences. If the pollution reductions required by the TMDL are not met, water quality in the estuary will not meet the levels needed to sustain public and private uses of the estuary. But beyond that, federal regulations forbid new or expanded discharges into impaired waters. Legislation that weakens riparian buffers and allows greater loadings from nonpoint places a firm obstacle in the path of all point sources in the watershed – cities cannot grow, stormwater systems cannot be expanded, new industries cannot be approved. Strong riparian buffer protections are thus critical to protecting economic growth in the Neuse and Tar-Pamlico watershed.

Finally, the only study we are aware of that evaluated the economic impact of the riparian buffer rules found that buffer rules do not have a negative impact on property value, and may increase the value of waterfront property by improving water quality. In a study published in 2009, researchers from East Carolina University evaluated the impact of the Neuse Buffer Rules on property values in Craven County.<sup>2</sup> The researchers evaluated sales data from 3,176 sales of riparian and non-riparian properties from 1992 through 2002. *Id.* at 8. Although they expected to find some diminution of property value as a result of the buffer rules, the researchers found that the buffer rules did not lower property values of riparian properties within the study area when compared to non-riparian properties. *Id.* at 18. Further, the researchers suspected that the improved water quality that would result from an intact buffer network would offset any adverse effect of the buffer rules on property values because “a simultaneous restriction on neighboring properties that is expected to improve water quality and general aesthetics

<sup>1</sup> [RTI international. 2007. A study of the costs associated with providing nutrient controls that are adequate to offset point source and nonpoint source discharges of nitrogen and other nutrients. Prepared for the North Carolina Environmental Review Commission.](#)

<sup>2</sup> Okmyung, Bin, et al., Riparian Buffers and Hedonic Prices: A Quasi-Experimental Analysis of Residential Property Values in the Neuse River Basin, *American J. of Agricultural Economics*, Vol. 91, Issue 4, 1067-1079 (2009).

may enhance property value.” *Id.* at 19 (emphasis added). The study found that hog farms and hazardous waste sites negatively affect property values, but that the riparian buffer rules do not.

As made clear by this study, the buffer rules impact on property values is, if anything, positive. Therefore, any changes that have the effect of “reducing the impact” on property owners, as envisioned by the Session Law, would reduce this positive impact. Active agriculture, businesses, roadways and industry have all continued under the rules. These modest rules are specifically designed only to (1) maintain existing buffers, and (2) minimize new paved or built-on surfaces near the water. The rules do not deprive the land of its economic value, but rather preserve the economic value of downstream lands and the health of our commonly held waters.<sup>3</sup>

## **II. Weakening Existing Rules or Exempting Properties Would Jeopardize Water Quality, Fisheries, and Burden Point Sources.**

Widespread, stringent application of the buffer rules is essential to maintaining current water quality levels in both the Neuse and Tar-Pamlico River basins. Session Law 2011-394 suggests a movement towards weaker, piecemeal protections for riparian buffers. DWQ should forthrightly oppose that movement because of the detrimental long-term impacts for the Neuse and Tar-Pamlico River systems. As DWQ has repeatedly stated, further actions are needed to improve water quality. Without consistent application of protective rules, DWQ’s own analyses make clear that nonpoint sources will continue to degrade water quality in these basins, limiting the benefit of reductions made by point source dischargers and agricultural sources.

Both study options threaten to punch holes in existing buffer protections in a manner that would increase landowner confusion and decrease water quality protections. Amending the buffer rules to allow more flexibility in approving buffer impacts or limiting their implementation – thereby allowing additional development in some buffers – could create disparities between landowners that would promote misunderstandings of the buffer rules, promote violations of the rule, and hamper DWQ’s efforts to enforce the rules. Just the opposite is needed to provide clarity for landowners and benefits to water quality.

Similarly, exempting certain properties will only ensure confusion and water quality degradation by creating patchwork buffers and treating similarly situated properties differently. Moreover, it is wholly unnecessary. If any legitimate harm were caused to individual property owners as a result of the riparian buffer rules, existing variance procedures are adequate to address it. True hardships, those that can be documented and would preclude reasonable use of property, can be remedied by seeking a major or minor variance under existing procedures. 15A N.C. Admin. Code 02B. 0233(9), .0259(9).

## **III. Summary**

The Neuse and Tar-Pamlico River Basins need more riparian buffers to prevent continued decline of water quality and eventually allow those rivers to meet water quality standards. Additional changes to the rules that allow for greater losses to riparian buffers will result in further impairment to these river basins. Furthermore, weakening provisions or greater exemptions to the rules will unfairly shift the costs of water quality protection and improvement to other nutrient sources and to future landowners, local governments, water and sewer customers, new development, etc. DWQ has correctly

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<sup>3</sup> Riparian Buffers: Common Sense Protection of North Carolina’s Water. 2003. Environmental Defense.

identified buffers as a critical and most cost-effective tool in their efforts to comply with the Clean Water Act and attain water quality standards in the Neuse and Tar-Pamlico River Basins.

Therefore, we strongly object to any additional exemptions to the buffer rules for lots platted prior to rule implementation and any amendments that result in greater loss of riparian buffers.

To conclude:

- Buffers are the most cost-effective tool for maintaining current water quality;
- Continued water quality degradation will result in high cleanup and compliance costs;
- Existing variance procedures are adequate at addressing legitimate hardships due to buffer rule implementation;
- Buffers result in better protections for water quality, thus yielding positive influences on property values;
- Without proper buffer rules, the nutrient reductions being achieved by point-source and row crop agriculture will be negated.

We appreciate your consideration of these comments.

Sincerely,

/s/

Heather Jacobs Deck  
Pamlico-Tar Riverkeeper  
Pamlico-Tar River Foundation

Geoff Gisler  
Staff Attorney  
Southern Environmental Law Center

Maggie Clary  
Policy Analyst  
Environmental Defense Fund

Larry Baldwin  
Lower Neuse Riverkeeper  
Neuse Riverkeeper Foundation

Grady McCallie  
Policy Director  
NC Conservation Network

Karen Rindge  
Executive Director  
WakeUP Wake County

16 Sept 2011

**Subject:** Comments on Session Law 2011-394 directive to consider changes to riparian buffer rules.

Dear Ms. Chapman, DWQ staff, and EMC Commissioners:

I have been working for a private environmental consulting firm in NC since 1987, and have dealt with DWQ's riparian buffer programs on many public and private projects since their inception. As both a consultant representing my clients' interests and a citizen concerned about aquatic ecosystem health, I would like to offer my perspectives on revising the Neuse and Tar-Pamlico Riparian Buffer Rules and their implementation policies, as directed by Session Law 2011-394.

**1) Can the Neuse and Tar-Pamlico riparian buffer rules be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins?**

**Comment:** Protection of forested riparian buffers is widely recognized as the most effective, reliable and low-cost way to keep stream-banks from eroding and to retain or assimilate many common stormwater pollutants. There is no practical artificial means of achieving the combination of stream-bank stabilization (erosion protection) and stormwater infiltration (pollutant removal) that riparian tree roots and undisturbed forest soils provide.

Considering the enormous growth of urban and suburban development in the Neuse and Tar-Pamlico basins over the past 30 year, forested buffers are crucial to protecting water quality and fish habitat in streams and estuaries. Any proposed changes to the buffer rules MUST provide equal or greater protection to channel stability, water quality and aquatic habitat.

One alternative might be to vary the required buffer width according to pre-construction local topography, so that natural ridges in the riparian zone could have a reduced zone 1 width in exchange for greater width in the low areas. Zone 1 (maintain as forest) could be reduced to 15 feet on ridges, IF it is increased to 40 feet in the adjacent swales. This flexibility option would allow stream-front owners more use of high-ground near the stream, while providing more undisturbed forest in the low areas where more soil-water is flowing. This option would be most useful along small Piedmont streams where the riparian zone has some natural topographic undulation. Along streams with a flat floodplain or terrace 50 feet or wider (no distinct ridges and swales), it would not be applicable.

**2) Should the Buffer Rules exempt all single family residential lots platted prior to August 1, 2000?**

**Comment:** No, single family residential lots platted prior to August 2000 should definitely NOT be exempted. Single family residential lots comprise a very large proportion of existing developed and yet-to-be-developed stream-front parcels in the Neuse and Tar-Pamlico basins, as well as elsewhere throughout NC. Allowing these owners or developers to clear their riparian forests to the stream-bank would contribute to massive levels of stream-bank erosion, and would soon be followed with massive releases of fertilizers as owners try to establish lawns or ornamental landscaping on these areas.

Thank you for the opportunity to comment on this important environmental protection issue.

Gerald Pottern  
Robert J. Goldstein & Associates, Inc.  
RJG&A Environmental Consultants  
1221 Corporation Parkway, Suite 100  
Raleigh, NC 27610 Tel: 919-872-1174  
[gpottern@RJGAcarolina.com](mailto:gpottern@RJGAcarolina.com)

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DWQ PUBLIC NOTICE

**Study of Neuse and Tar-Pamlico Riparian Buffer Rules, per Session Law 2011-394**

18 Aug 2011 from Cyndi Karoly, Wetlands & Stormwater Branch Manager

The purpose of this Public Notice is outline below. This notice is available electronically at  
<http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices>.

Study of the Neuse and Tar-Pamlico Riparian Buffer Rules

The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

- (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- (ii) Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:  
<http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules>.

A copy of Session Law 2011-394 is available at:  
<http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf>.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or [Amy.Chapman@ncdenr.gov](mailto:Amy.Chapman@ncdenr.gov). If you have any questions about the study, please contact Ms. Chapman at [Amy.Chapman@ncdenr.gov](mailto:Amy.Chapman@ncdenr.gov) or 919-807-6400.

>> Submit comments to Amy Chapman by Sept 17

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15 Sept 2011 DWQ Notice:

This fact sheet outlines the buffer rule changes for the eight coastal counties in the Neuse and Tar-Pamlico basins per Session Law 2011-394(17)(c). The buffer rule changes apply only to a coastal lot in the Neuse and Tar-Pamlico basins of two acres or less in size that was platted and recorded in the appropriate county's Register of Deeds prior to August 1, 2000.

The fact sheet can be viewed in its entirety at:

<http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers>

Session Law 2011-394 can be viewed in its entirety at:

<http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf>

## Chapman, Amy

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**From:** Michael Horan [mhoran@wilsonnc.org]  
**Sent:** Tuesday, August 23, 2011 3:40 PM  
**To:** Chapman, Amy  
**Subject:** RE: Study of the Neuse and Tar-Pamlico Buffer Rules as required by SL 2011-394(17)(e)

Do not exempt lots platted prior to 2000, implications from such action could cause owners of said lots that have been enforced on and assessed penalties or were restricted from building could come back and ask for some type of compensatory action for their loss/trouble (possible lawsuits).

---

**From:** Chapman, Amy [<mailto:amy.chapman@ncdenr.gov>]  
**Sent:** Thursday, August 18, 2011 3:13 PM  
**To:** [jhayes@nchba.org](mailto:jhayes@nchba.org); [richbq@mindspring.com](mailto:richbq@mindspring.com); [sig@sighutchinson.com](mailto:sig@sighutchinson.com); [LBaldwin@ec.rr.com](mailto:LBaldwin@ec.rr.com); [bud@tarheelbuilding.com](mailto:bud@tarheelbuilding.com); [willokelly@gmail.com](mailto:willokelly@gmail.com); [tom@beaufortcdc.com](mailto:tom@beaufortcdc.com); [lmartin@nchba.org](mailto:lmartin@nchba.org); [jnhill@co.pitt.nc.us](mailto:jnhill@co.pitt.nc.us); [rivins@co.orange.nc.us](mailto:rivins@co.orange.nc.us); [ggisler@selcnc.org](mailto:ggisler@selcnc.org); [riverkeeper@ptrf.org](mailto:riverkeeper@ptrf.org); Stanfill, Jim; Recktenwald, Marc; [matt.flynn@townofcary.org](mailto:matt.flynn@townofcary.org); [dan.mclawhorn@raleigh.nc.gov](mailto:dan.mclawhorn@raleigh.nc.gov); [kmartin@sandEC.com](mailto:kmartin@sandEC.com); [julia.mullen@durham.nc.gov](mailto:julia.mullen@durham.nc.gov); [megan.bolejack@chathamnc.org](mailto:megan.bolejack@chathamnc.org); Michael Horan; [mark.senior@raleigh.nc.gov](mailto:mark.senior@raleigh.nc.gov); [norton@ebxusa.com](mailto:norton@ebxusa.com); [rwadkins@townofmorrisville.org](mailto:rwadkins@townofmorrisville.org); [rsmith@pcsposphosphate.com](mailto:rsmith@pcsposphosphate.com); [anne.coan@nc.fb.org](mailto:anne.coan@nc.fb.org); Thorpe, Gregory J; Nicole Clift; [carol.wright1951@yahoo.com](mailto:carol.wright1951@yahoo.com); [cpeters@email.unc.edu](mailto:cpeters@email.unc.edu); [fmi@embarqmail.com](mailto:fmi@embarqmail.com); [Bryan.Hulka@weyerhaeuser.com](mailto:Bryan.Hulka@weyerhaeuser.com); [alissa@neuseriver.org](mailto:alissa@neuseriver.org); [riverkeeper@neuseriver.org](mailto:riverkeeper@neuseriver.org); Ernest Larkin; Hodge, Al; Adams, Amy; Smith, Danny; Gregson, Jim; [jrudek@edf.org](mailto:jrudek@edf.org); [Todd.StJohn@kimley-horn.com](mailto:Todd.StJohn@kimley-horn.com); [cbromby@hunton.com](mailto:cbromby@hunton.com); [jhutton@wildlandsinc.com](mailto:jhutton@wildlandsinc.com); Steenhuis, Joanne; Coburn, Chad  
**Cc:** Reid, Dianne; Kreiser, Gary; Dorney, John; Karoly, Cyndi; Steenhuis, Joanne; Coburn, Chad; Gregson, Jim; Hodge, Al; Adams, Amy; Smith, Danny; Witherspoon, Lauren; Richmond, Martin; Landry, Natalie; Scheller, Roberto; Wrenn, Brian; Ridings, Rob; Wainwright, David; Higgins, Karen  
**Subject:** Study of the Neuse and Tar-Pamlico Buffer Rules as required by SL 2011-394(17)(e)

August 18, 2011

The purpose of this Public Notice is outline below. This notice is attached for you and available electronically at:  
<http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices>.

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This notice was also published on the 401 listserv and the Planning listserv as well. This email may be a duplicate for you.

Amy Chapman  
Wetlands, Buffers, Stormwater, Compliance and Permitting Unit (WeBSCaPe)  
NCDENR/Division of Water Quality - Wetlands and Stormwater Branch  
1650 Mail Service Center  
Raleigh, NC 27699-1650  
Office: (919) 807-6400  
Fax: (919) 807-6494  
Website: <http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers>  
E-mail: [amy.chapman@ncdenr.gov](mailto:amy.chapman@ncdenr.gov)

*E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.*

September 15, 2011

**TO:** Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

**FROM:** Concerned Homeowner Lake Royale Community, Louisburg, NC

**RE:** 1) Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules Notice dated August 18, 2011

2) Session Law 211-394 Section 17

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I do not support Session Law 211-394 Section 17 reducing the riparian buffer zone from 50 to 30 feet. This buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

These agencies have worked diligently to protect North Carolina coastal and non-coastal waters from further degradation. Their efforts to protect natural habitats, water quality and the fishing industry are being compromised.

We must not only maintain existing policies, but continue to introduce additional policies and guidelines to maintain the effectiveness, beauty and economic benefits of our waterways. The reduction of the buffer zone appears to be of benefit to a few waterfront homeowners or developers without regard to the environmental impact to our state waters.

  
Mim S. Dyer

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WETLANDS AND STORMWATER BRANCH

September 15, 2011

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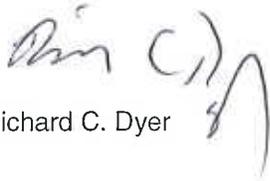
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Richard C. Dyer

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WETLANDS AND STORMWATER BRANCH

September 15, 2011

**TO:** Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

**FROM:** Jonathan Grobani, Lake Royale resident (Franklin County) *Box 752, Burr, NC 27508*

**RE:** Response to Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules - Notice dated August 18, 2011 (pursuant to Session Law 211-394 Section 17)

I hereby express my opposition to any reduction in the riparian buffer zone currently in place under North Carolina law. As you are aware, this buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

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*Kenneth V Smith  
1160 Lake Royale  
1031 Sagamore Drive  
Louisburg, NC 27549*

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Nicole Clift

1349 Sagamore

1213 Lake Royale

Louisburg NC

27549

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WETLANDS AND STORMWATER BRANCH

**DATE:** September 17, 2011

**TO:** Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

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*JR O'Neil*  
209 Lake Royale  
122 Oklahoma Dr  
Louisburg, NC.  
27549

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*Willie M. Wallace*  
110 Pontiac Cove  
123 Lake Royale  
Louisburg, NC 27549

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*Joseph Sereni*  
Joseph Sereni  
116- Custer Cove  
Louisburg, NC 27549

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Paulie Mueller  
1218 Lake Royale  
104 Doe Drive  
Louisburg, NC 27549

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*W. J. ...*  
*Mary Louise*

502 Lake Royale  
671 Sagamore  
Louisburg, NC 27549

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*Cheryl B. Van Graafeiland*  
*Cheryl B. Van Graafeiland*  
*9024 Lake Royale*  
*Louisburg NC 27549*

*cherylwang@nr.nc.com*

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Chris & Christina Eschbach  
110 Palomino Cove  
Louisburg, NC 27549

Christina Eschbach  
*[Signature]*

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*Suzanne M. Bozosi  
113 Tishamungo  
Lake Royale*

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**TO:** Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

**FROM:** Concerned Homeowner Lake Royale Community, Louisburg, NC

**RE:** 1) Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules Notice dated August 18, 2011

2) Session Law 211-394 Section 17

---

I do not support Session Law 211-394 Section 17 reducing the riparian buffer zone from 50 to 30 feet. This buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

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We must not only maintain existing policies, but continue to introduce additional policies and guidelines to maintain the effectiveness, beauty and economic benefits of our waterways. The reduction of the buffer zone appears to be of benefit to a few waterfront homeowners or developers without regard to the environmental impact to our state waters.

**RECEIVED**  
SEP 21 2011  
DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

  
Ryan Daniel Winkler  
346 Lake Royale  
Louisburg, NC  
27549

**DATE:** September 17, 2011

**TO:** Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

**FROM:** Concerned Homeowner Lake Royale Community, Louisburg, NC

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*Marshall Tolles*  
*77 Lake Royale*  
*Louisburg NC*  
*27549*

**RECEIVED**  
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DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

**DATE:** September 17, 2011

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*Kathleen Thomas*  
*599 Lake Royale*  
*Louisburg, NC*  
*27549*

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9-17-11

*Paul G. Barabasz*

118 CUSTER COVE.

LOUISBURG, NC. 27549

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SEP 21 2011

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*Raymond Smith*  
*1315 Sagamon Dr*  
*Lot 2806*

**RECEIVED**  
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*Amy Chapman*  
105 Nebow  
Lake Royale

**RECEIVED**

SEP 21 2011

DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

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Don Gowen  
M. J. Hall  
1083 Lake Royale  
Louisburg, NC  
27549

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*T. Coleman*

T. COLEMAN

9/17/11

139 Wennebag Loop

RECEIVED  
SEP 21 2011  
DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

**DATE:** September 17, 2011

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*Deborah K. Ladd - 104 Custer Cove*

**RECEIVED**  
SEP 21 2011  
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WETLANDS AND STORMWATER BRANCH

Kent Smith  
215 Lake Royale  
220 Choctaw Drive  
Louisburg NC 27549

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SEP 21 2011

DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

September 19, 2011

Ms. Amy Chapman  
Wetlands, Buffers, Stormwater – Compliance & Permitting Unit  
North Carolina Department of Environment and Natural Resources  
1650 Mail Service Center  
Raleigh, NC 27699-1650

*President*  
Stephanie G. Walker  
ABR, CRS, GRI, RSPS, SRES

*President-Elect*  
Lou Baldwin  
GRI

*Treasurer*  
Thomas A. Barton  
CREA

*Immediate Past President*  
Mary Edna Williams  
ABR, CDPE, CLHMS, CRB, CRS, GRI

Dear Ms. Chapman,

This letter is intended to provide formal written comments from the North Carolina Association of REALTORS® to the Department of Environment and Natural Resources pursuant to the Department's request for feedback with regard to the application and implementation of the Neuse River Basin and Tar-Pamlico Basin Riparian Buffer Rules.

We are specifically providing comments regarding the following two items:

- i. Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
- ii. Exempting all single family residential lots platted prior to August 1, 2000.

The steps currently being taken by the Department to seek public comment on these issues are to be commended. However, some legitimate questions must first be asked with regard to the current goals and implementation of the Rules and the programs put in place around them. We believe there are still too many unknowns and subjectivity surrounding the establishment of the water quality protection standards and the ways those standards should be achieved according to the Department. As part of their review process, the Department should look to simplify and clarify the current standards, clearly explain how those standards were developed and how they should be implemented and be transparent with the results expected from their implementation.

There are several ways we believe the Riparian Buffer Rules could be amended to achieve the same level of water quality protection while also reducing the impact to property owners in the Neuse and Tar-Pamlico River Basins, but we strongly believe the best way for the Department to achieve that outcome is to exempt all single family residential lots platted prior to August 1, 2000. This is the most equitable solution for the property owners who purchased those properties before the Rules were implemented. These properties should be exempt and not be subjected to a complicated variance process. For these owners, the Rules would serve as suggested best management practices, truly balancing the rights of private property owners while at the same time seeking to sustain water quality standards.

In some areas of the these two basins, including in Pamlico County where numerous pre-August 1, 2000, platted lots exist, the counties enacted standards long before the Department did. Their 75' set back from the mean high water mark means that on lots with little or no coastal vegetation, the setback results in more substantial protection than the Buffer Rules. In many cases, like in Pamlico County, the county's rule was more effective at protecting water quality, yet not as restrictive on the property owners. The need for variances has been created by the Buffer Rules requiring the same setback from vegetation as from water. The Rules give no credit to the existence of coastal vegetation, which is providing essential water quality protections.

If the Rules are to be amended or implemented differently without exempting lots platted prior to August 1, 2000, consideration should be given to the following factors. First, wetlands and other coastal vegetation should be allowed to count towards required buffer areas as they are natural buffers. Limited clearing and maintenance, beyond what is currently permitted, should be allowed in the buffer zone to maintain the view-shed and other essential characteristics of the property. Building set-back provisions should be re-examined to ensure conformity with local regulations and to prevent duplication. The current table of Best Management Practices should also be revised by removing all ineffective or outdated techniques. Finally, the Department should refine the current mitigation structure to allow for a more streamlined, cost-effective and permit-free process.

Thank you for the opportunity to submit comments on this importance subject. The North Carolina Association of REALTORS® understands the very important role the environment plays in the quality of life North Carolina citizens enjoy. We look forward to working with the Department and the other stakeholders to achieve a more sustainable balance between necessary regulations and the protection of private property rights.

Respectfully,



David McGowan, III  
Director of Regulatory Affairs  
North Carolina Association of REALTORS®  
421 Fayetteville Street, Suite 1109  
Raleigh, NC 27601  
(919)573-0994 Direct



# NORTH CAROLINA HOME BUILDERS ASSOCIATION

P.O. BOX 99090 · RALEIGH, N.C. 27624-9090  
PHONE (919) 676-9090 · TOLL FREE 1-800-662-7129 · FAX (919) 676-0402  
www.nchba.com www.21buildingexpo.com

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bdaleure@avantgarderec.com

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erik@andersonmoore.com

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**Vice President, Region III**  
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Durham, (919) 422-2818  
chad.collins@ive.com

**Vice President, Region IV**  
RALPH DOGGETT  
Burlington, (336) 263-2175  
ralph.doggett@yahoo.com

**Vice President, Region V**  
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Southern Pines, (910) 690-9088  
dwilliams2000@nc.rr.com

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BRIAN PACE  
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bpace@pacedevelop.com

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MARTY NEEDHAM  
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builder127041@yahoo.com

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br@lknproperties.com

**Vice President, Region IX**  
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Granite Falls, (828) 396-8878  
Kevin@providencehomebuilders.com

**Vice President, Region X**  
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sean@livingstoneconstruction.com

**Secretary/Treasurer**  
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btutor@bondedbuilders.com

**Immediate Past President & NAHB Executive Committee State Rep.**  
LYLE GARDNER  
Raleigh, (919) 848-2041  
lylegardner@aol.com

**NAHB Executive Committee**  
BUDDY HUGHES  
Lexington, (336) 240-3097  
hucon@ptmc.net

**Executive Vice President**  
MIKE CARPENTER

September 20, 2011

Ms. Amy Chapman  
Surface Water Protection Section  
1650 Mail Service Center  
Raleigh, NC 27699-1650

Dear Ms. Chapman,

On behalf of the North Carolina Home Builders Association and particularly our members in the Neuse and Tar-Pamlico River Basins, I am writing to you to comment on the study of the Neuse and Tar-Pamlico buffer rules per your notice dated August 18, 2011. I apologize for the late submission. Due to Hurricane Irene and the related damage, I found it difficult to obtain detailed comments from our members in the coastal area. I hope that you understand and will accept these comments.

Both DENR and the regulated community have sufficient experience using the Neuse and Tar-Pamlico buffer rules such that a study of what is "working" and what is not would yield some efficiency for all parties. It is hard to pinpoint specifically what must be fixed, but a comprehensive examination of the buffer rule and any known water quality improvement that can be attributed to it would be beneficial. The first parameter should be to examine whether a 50 foot buffer is necessary. Considering the number of water quality and other land use requirements imposed on properties in the Neuse and Tar Pamlico basins it is logical that effective nutrient removal could occur with a smaller buffer.

The following are specific changes to the buffer rules that should be made:

- Single family lots platted and recorded prior to the effective date of the buffer rules should be exempt and not subject to a complicated variance process.
- There is no justification for the removal of coastal or other wetland areas from the buffer area calculation. Natural wetlands have the highest ability to remove sediment, reduce nutrients and treat stormwater and wastewater. The principal reasons for wetland conservation and preservation is the ability to filter drainage and surface waters. Wetlands present on the site currently cannot be removed or disturbed without a permit; thus, development projects that preserve natural wetlands should receive buffer credit, not debit.
- Delete the provision under Variances [15A NCAC 2B .0233(9)(a)(i)(E) and 15A NCAC 2B .0259 (9)(a)(i)(E)] that states that the applicant is not eligible to receive a variance if the property was purchased after the rule effective date. Variances run with the land and should be based on the specific and unique characteristics of the property and how the rule affects that property. If the land qualified for a variance on the day the buffer rule was implemented, then it would qualify every day after that, regardless of ownership.

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SEP 23 2011

DENR-WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

## PAST PRESIDENTS

EUGENE A. GULLEDGE (1964)  
C. PHIL ROBINSON, JR. (1966)  
CARL W. JOHNSON (1967)  
JOHN CROSLAND, JR. (1968)  
\*J.M. DAUGHTRIDGE (1969)  
\*HOMER BARRETT (1970)  
\*JAMES W. LESTER (1971)  
CHARLES C. McLAURIN (1972)  
\*Deceased

J. VAUGHN KLUTTS (1973)  
C.L. REAVIS (1974)  
JOHN T. BELL (1975)  
\*WILLIAM T. BOYD (1976)  
LaRUE HAMBRICK (1977)  
J. RAY SPARROW (1978)  
SHERRILL FAW (1979)  
MARK E. TIPTON (1980)

M. DURWOOD STEPHENSON (1981)  
J. WATTS ROBERSON (1982)  
\*NELSON CALLAHAN (1983)  
PAUL D. TROLLINGER (1984)  
RICK BATCHELOR (1985)  
BURL LANCE (1986)  
LARRY SUMMER (1987)  
HERSCHEL REDDING (1988)

JAMES FORD (1989)  
STEVE NASH (1990)  
HARRIS B. GUPTON (1991)  
RUSS DAVIS (1992)  
CHUCK MILLER (1993)  
CHARLES MULLEN (1994)  
ROBERT INGRAHAM (1995)  
DAVID PRESSLY, JR. (1996)

DONALD W. BETSWORTH (1997)  
GEORGE HENSON (1998)  
ROBERT YATKO (1999)  
DANNY ADAMS (2000)  
JONATHAN ELLIOT (2001)  
DON CROOM (2002)  
GREG ISENHOUR (2003)  
RICK JUDSON (2004)

BUDDY HUGHES (2005)  
DAVE STORMONT (2006)  
PAUL MULLICAN (2007)  
RAY RHODES (2008)  
FRANK WIESNER (2009)  
LYLE GARDNER (2010)

Thank you for the opportunity to comment on this important subject. Members of the North Carolina Home Builders Association understand the importance of clean water to the viability of our communities. We look forward to working with DENR to review the existing buffer rules and to achieve a balance between regulation and the use and enjoyment of private property.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa D. Martin". The signature is fluid and cursive, with a long horizontal stroke extending to the right from the end of the name.

Lisa D. Martin  
Director of Government Affairs

## Chapman, Amy

---

**From:** Mcmillan, Ian  
**Sent:** Friday, August 19, 2011 2:25 PM  
**To:** Chapman, Amy  
**Subject:** RE: [DWQWETLANDS] Re: Study of Neuse and Tar-Pamlico Buffer Rules per Session Law 2011-394 (17)(e)

Responses:

- (i) I propose only requiring a 30-foot, top-of-bank, landward riparian buffer, but in exchange for "surrendering" Zone 2, the State require a 30-foot, top-of-bank, landward riparian buffer in other river basins, targeting the most impaired basins first.
- (ii) I would be okay with the second proposal

Ian J. McMillan, PWS, GISP  
NCDENR/Division of Water Quality - Wetlands and Stormwater Branch  
1650 Mail Service Center  
Raleigh, NC 27699-1650  
Office: (919) 807-6364  
Fax: (919) 807-6494  
Email: [ian.mcmillan@ncdenr.gov](mailto:ian.mcmillan@ncdenr.gov)

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

---

**From:** DWQWETLANDS@yahoogroups.com [mailto:DWQWETLANDS@yahoogroups.com] **On Behalf Of** dwqwetlands  
**Sent:** Thursday, August 18, 2011 3:16 PM  
**To:** DWQWETLANDS@yahoogroups.com  
**Subject:** [DWQWETLANDS] Re: Study of Neuse and Tar-Pamlico Buffer Rules per Session Law 2011-394 (17)(e)

To clarify: The 30 day timeframe to submit written comments to this notice begins August 18, 2011.

--- In [DWQWETLANDS@yahoogroups.com](mailto:DWQWETLANDS@yahoogroups.com), "dwqwetlands" <cyndi.karoly@...> wrote:

>

> The purpose of this Public Notice is outline below. This notice is available electronically at <http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices>.

>

> Study of the Neuse and Tar-Pamlico Riparian Buffer Rules

> The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

> (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and

> (ii) Exempting all single family residential lots platted prior to August 1, 2000.

>

> The Neuse and Tar-Pamlico Buffer rules are available at:

> <http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules>.

>

> A copy of Session Law 2011-394 is available at:

<http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf>.

>

> Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or Amy.Chapman@... If you have any questions about the study, please contact Ms. Chapman at Amy.Chapman@... or 919-807-6400.

>

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▪

## Chapman, Amy

---

**From:** Zack Taylor [Ztaylor@Suddenlink.net]  
**Sent:** Tuesday, September 20, 2011 10:59 AM  
**To:** Chapman, Amy  
**Subject:** Comments On Buffer Rules

Dear Amy,

I understand that you are asking the general public for comments concerning the Riparian Buffer Rules for the Neuse and Tar-Pam, (shown below) and I would like to submit the following comments and suggestions:

**GENERAL REQUEST FROM DENR:** The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

**Question #1:** (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins;

### **Comments:**

1. **Pipes For Ditches:** Since the main purpose of the buffer is to prevent pollutants from entering the waters, and a properly installed culvert or pipe would prevent such, there should be a general permit available for the piping of ditches so long as a buffer area is provided in a radius around both open ends of the pipe or culvert.
2. **Bulkheads and Walls:** Since the main purpose of the buffer is to prevent pollutants (both from surface water and subterranean water flow) from entering the waters, and a properly installed bulkhead or wall (of a sufficient depth) would prevent such, there should be a general permit available for the installation of bulkheads or walls so long as a buffer area is provided in a radius around both ends of the bulkhead or wall if such end is within the normal buffer zone.
3. **Support Pilings:** Where a property owner wishes to erect a building within the buffer (zone #1 or #2), and such building will be supported by pilings that do not materially hamper the flow of water, and where such building obtains the necessary permits from the Corps of Engineers for any wetland fill, there should be a general permit available for property owners to erect such structures, so long as all roof water from such building is designed to sheet flow discharge in an area outside the buffer zones.
4. **Vegetation Removal In Buffer:** Where the regulated water body is a creek, river, or canal of sufficient width to be considered as a scenic view by the property owner (such as a waterfront lot), there should

not be any requirement to have any vegetation above a height of 2 feet, in order to both preserve the value of the property and to protect the water body.

5. Berms Adjacent To Waters: When there is a berm running parallel and adjacent to a regulated water body, and this berm is of sufficient height to prevent the normal flow of surface water from entering the water body, this berm should be considered as satisfactory protection, and the upland side of the berm should be exempted from the regulations of the buffer rules.
  
6. Variance Applications: A variance from the buffer rules should be allowed regardless of the length of time the property has been owned by the applicant, nor should it matter when the rules took effect, since the practical effect of the variance on the water body will be the same regardless of the time of ownership.
  
7. Notices To Property Owners: Adhering to the buffer rules as specified in the legislative bill governing the buffer rules, should be the only requirement of a property owner, and internal memos between staff members or rulings from court cases, should not have any effect on a property owner who was not a party to the case that the memo or ruling referred to. The average citizen should not have to hire an attorney or engineer in order to follow the rules.

**Question #2:** (ii) Exempting all single family residential lots platted prior to August 1, 2000.

**Comments:**

1. This proposal sounds fair, but I would suggest that it does not go far enough to protect the property rights of the landowner. Single family residential property has a very low probability of generating enough pollutants to have any major effects on water quality. Therefore I would suggest that all single family residential lots be exempted regardless of the date of platting or recording.

Thank You for registering my suggestions and comments.

Zack Taylor

P.O. Box 12006

New Bern, NC 28561

## Chapman, Amy

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**From:** Bill Clark [bill@billclarkhomes.com]  
**Sent:** Wednesday, September 07, 2011 2:17 PM  
**To:** Chapman, Amy

1. These two separate rules need to be one comprehensive rule. To much confusion for the public to follow the consistency in NCDENR interpretation.
2. These rules have a significant impact on waterfront properties and annual studies by NCDENR indicate no improvement in water quality so these rules need to be curtailed or sunsetted in the future.
3. Riparian buffer setbacks should begin from the mean high water mark or the ordinary high water mark, and then projected landward. Wetland areas should be included as part of the buffer because that was the original intent.
4. In the riparian buffer any vegetation that is <5 inches diameter breast height should be allowed to be cleared without significant ground disturbances and left in its natural condition.
5. All property deeded or recorded prior to the rule should be exempt.

## Chapman, Amy

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**From:** Larry F. Baldwin, CPSS/SC [LBaldwin@ec.rr.com]  
**Sent:** Tuesday, September 06, 2011 8:15 PM  
**To:** Chapman, Amy  
**Subject:** Re: [denr.dwq.dwqrules] Public Notice & Comment Period Announcement for Study of Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules

As solicited, please accept the following comments regarding the Neuse and Tar-Pamlico riparian buffer rules:

### Item (i)

---The two separate set of rules, and any future watershed rules, need to be consolidated into one comprehensive rule. It is impossible for the regulated public to follow watershed rules that cross political boundaries as to consistency in their interpretation by NCDENR staff.

---These rules have significant impact to waterfront properties. Previous annual studies by NCDENR have shown little to no documented improvements to water quality. If there are no improvements then portions of these rules need to be curtailed or sunsetted in the future.

---Riparian buffer setbacks should begin from the mean high water mark or the ordinary high water mark, and then projected landward.

---Within a riparian buffer area, any vegetation that is <5 inches diameter breast height, should be allowed to be cleared without significant ground disturbances and left in a natural condition. New vigorous vegetative growth is capable of higher water and nutrient uptake.

### Item (ii)

Full exemptions or grandfathering should be allowed for all properties that were deeded and recorded of the original effective date of the rule's origin. Otherwise vested property rights are violated.

Larry F. Baldwin, CPSS/Sc  
(910) 471-0504

----- Original Message -----

**From:** [denr.dwq.dwqrules@lists.ncmail.net](mailto:denr.dwq.dwqrules@lists.ncmail.net)  
**To:** [NCDENR.denr.dwq.dwqrules](mailto:NCDENR.denr.dwq.dwqrules)  
**Sent:** Thursday, August 18, 2011 3:46 PM  
**Subject:** [denr.dwq.dwqrules] Public Notice & Comment Period Announcement for Study of Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules

Please see the attachment for the information referenced in the Subject Line. You are receiving this message because you are subscribed to the NC Division of Water Quality (DWQ) Rules Listserv. To invite someone else to join this listserv, instruct them to send a blank email to [DENR.DWQ.DWQrules-join@lists.ncmail.net](mailto:DENR.DWQ.DWQrules-join@lists.ncmail.net). To unsubscribe, send a blank email to [DENR.DWQ.DWQrules-leave@lists.ncmail.net](mailto:DENR.DWQ.DWQrules-leave@lists.ncmail.net).

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The purpose of this Public Notice is outline below. This notice is available electronically at <http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices>.

Study of the Neuse and Tar-Pamlico Riparian Buffer Rules  
The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

1. Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
2. Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:

<http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules>.

A copy of Session Law 2011-394 is available at:

<http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf>.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or [Amy.Chapman@ncdenr.gov](mailto:Amy.Chapman@ncdenr.gov). If you have any questions about the study, please contact Ms. Chapman at [Amy.Chapman@ncdenr.gov](mailto:Amy.Chapman@ncdenr.gov) or 919-807-6400.

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation

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denr.dwq.dwqrules mailing list

[denr.dwq.dwqrules@lists.ncmail.net](mailto:denr.dwq.dwqrules@lists.ncmail.net)

1001 College Court (28562)  
Post Office Box 867  
New Bern, NC 28563-0867

P: 252.672.5507  
F: 252.672.5477  
fhs@wardandsmith.com

August 30, 2011

VIA EMAIL  
ORIGINAL VIA U.S. MAIL

Ms. Amy Chapman  
Wetlands, Buffers, Stormwater  
Compliance & Permitting Unit  
1650 Mail Service Center  
Raleigh, NC 27699-1650  
amy.chapman@ncdenr.gov

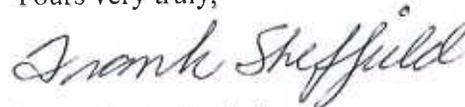
RE: Comments for Neuse River Basin and  
Tar-Pamlico River Basin Riparian Buffer Rules Study  
Our File 550089-00001

Dear Ms. Chapman:

Pursuant to the August 18, 2011, Public Notice regarding the Neuse and Tar-Pamlico Riparian Buffer Rules Study, please accept the following comments:

1. Convert all "Allowable" activities in the Table of Uses to "Regulation by Rule." This approach eliminates the need to have staff approve such activities, and will save considerable time and expense for property owners.
2. Exempt all single family residential lots platted before August 1, 2000. Current rules impose ex post facto requirements on lot owners, most of whom purchased such lots contemplating being able to construct in the buffer if necessary. Also, I believe any resulting environmental harm would be negligible for residential properties.
3. All variances should be handled at the staff level and should not require Environmental Management Commission approval. Staff is capable of evaluating the need and justification for both minor and major variances. This change would save considerable time and expense for property owners with no loss of environmental protection.

Yours very truly,



Frank H. Sheffield, Jr.

FHS:kts  
ND: 4824-8393-0378, v. 2  
cc: Amy P. Wang, Esq.

**RECEIVED**

AUG 31 2011

DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

ASHEVILLE

GREENVILLE

NEW BERN

RALEIGH

WILMINGTON

## Chapman, Amy

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**From:** Nick Santoro [sunbelt@coastalnet.com]  
**Sent:** Saturday, August 20, 2011 11:39 AM  
**To:** Chapman, Amy  
**Subject:** Buffer Rule Comments and Suggestions

Dear Ms. Chapman:

Ms. Amy Chapman:

Re: Request for comments on Neuse River Buffer Rule Revision

Since the Neuse & Tar Pamlico Buffer Rules have been in place for more than a decade, more than 160 Variance Requests have been processed by DWQ personnel in Pamlico County alone and the prospect is that many more will be processed in the years ahead as owners of vacant lots attempt to build on their lots. All of these Variance Requests pertain to residential lots that were designed, approved, platted and recorded prior to the adoption of the Buffer Rules in August of 2000. Many of these lots have been purchased and sold several times since their creation and often the new owners have requested modifications to the Variances granted to previous owners, thereby creating an additional workload for DWQ personnel and inconvenience for property owners over time. It is for this reason that lots created prior to the adoption of the Buffer Rules should be exempt from them.

Instead of requiring that owners of lots created prior to the Buffer Rules comply with them. Owners of such lots should be educated as to the need for controlling runoff and given a list of "suggestions" as to techniques they might use to reduce the impacts of runoff that they should consider when designing their project. The list of suggestions should include the desirability of diverse flow, rain catchment devices, rain gardens, and other techniques in addition to the provisions of the Buffer Rules which were included in the Neuse and Tar Pamlico Buffer Rules which would remain as requirements for lots created after the adoption of the Buffer Rules in August of 2000. For owners of lots created prior to that date, the Buffer Rules would only be recommendations. These "suggestions" could be distributed by real estate attorneys, building inspection departments and real estate agents.

It should be noted that Pamlico County, one of the counties most impacted by the Buffer Rules, adopted a 75' set back measured from mean high water on all lots created outside of incorporated towns after January 26, 1990, more than a decade prior to the Neuse River Buffer Rules. For lots with lots with less than 25' of coastal vegetation, which is the vast majority of lots created in Pamlico County since January 26, 1990, this set back achieves an equal or greater benefit to the goal of reducing runoff. For lots that have little or no coastal vegetation the benefit is a full 50% greater setback than the Buffer Rules require. It should also be noted that to date, not one single Variance has been requested or granted to the 75' setback requirement, since all lots platted prior to January 26, 1990 were exempt.

What has caused the need for variances from the Buffer Rules in Pamlico County is the requirement for the same setback from coastal vegetation as from water combined with the fact that lots designed prior to the adoption of the Buffer Rules were not exempt from them. I have always understood that coastal vegetation performs many beneficial functions in absorbing runoff, filtering it, and providing habitat for many essential organisms, yet the Buffer Rules assign a value of zero to coastal vegetation in performing any of these functions, since the required set back from it is exactly the same as if it did not exist at all.

If the Buffer Rules are not ammended to exempt lots created prior the their adoption, the prospect is that the burden placed on DWQ personnel and property owners alike will continue for decades to come, not to mention the negative implications for property values, lending institutions and home builders at a time when our economy does not need any more negative impacts.

Please understand that it is not the Buffer Rules themselves that are being questioned here, it is the retroactive nature of their requirements. Any time any rule is designed to be retroactive, problems and hardships are about to arise.

Thanks for taking the time to read this.

Sincerely,

Nick Santoro, 36 Old Lupton Rd., Merritt, NC 28556 (252) 249-0823

## Chapman, Amy

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**From:** Donald Dambrosi [dambrosid111748@gmail.com]  
**Sent:** Friday, August 19, 2011 12:34 PM  
**To:** Chapman, Amy  
**Subject:** Neuse and Tar Pamlico Buffers

Amy:

The rules need to be amended to clarify that these buffers are not "takings" rather they are set asides to promote water quality and as such the areas shall remain available for allowable residential density and any other transfer of uses that local governments may determine such as parking space reductions to accommodate non-residential uses.

Many local governments are viewing the buffers as having been "taken" by the state and are therefore "gone" for development utilization. As a result, some have then stated that density MAY NOT be transferred from the buffer area to other usable areas of the site.

I'm confident the EMC will see the logic in this as the State has NOT PROVIDED ANY "JUST" COMPENSATION to any land owner for such a taking.

A Clarification to ALL buffer rules should be made and in turn will be welcomed, in my opinion, by property owners and all consultants involved with Land Use Planning or Land Development.

I believe this can easily fall under the inquiry to study and possibly amend Section 17(e) of Session Law 2011-394 point (i)... "to achieve the same level of water quality protection while reducing the impact to riparian property owners.....".

Thank you

Don d'Ambrosi  
d'Ambrosi Land Consulting services, LLC  
275 Ferrell Road West  
Apex, NC 27523  
919-819-8272

September 16, 2011

VIA E-MAIL TO:

Amy.Chapman@ncdenr.gov

VIA POSTAL SERVICE TO:

Amy Chapman

Wetlands, Buffers, Stormwater, Compliance and Permitting Unit

NCDENR / Division of Water Quality – Wetlands and Stormwater Branch

1650 Mail Service Center

Raleigh, NC 27699-1650

RECEIVED

SEP 19 2011

DENR - WATER QUALITY  
WETLANDS AND STORMWATER BRANCH

*Re: PCS Phosphate Company, Inc. Proposed Findings and Recommendations for the DENR Report to the General Assembly on the Study of the Neuse and Tar-Pamlico Buffer Rules*

Dear Ms. Chapman,

On August 18, 2011, the Department of Environment and Natural Resources issued a public notice soliciting public comments on the Department's study of the Neuse and Tar-Pamlico River Riparian Buffer Rule. PCS Phosphate Company, Inc. (PCS) understands the Department will report findings and recommendations to the Environmental Review Commission by February 1, 2012, pursuant to Session Law 2011-394. The Session Law states:

The Department of Environment and Natural Resources shall study the application and implementation of ... the Tar-Pamlico River Basin Riparian Buffer Rule. The Department shall specifically consider: (i) whether the rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the river basins ....

S.L. 2011-394 § 17(e).

PCS is a riparian owner in the Tar-Pamlico River Basin. The Tar-Pamlico River Basin Riparian Buffer Rule significantly impacts our phosphate mine and operations in

Beaufort County. Accordingly, PCS has significant experience in operating a business under the various policies related to riparian buffer requirements and in carrying out substantial riparian buffer mitigation projects.

In response to the public notice, PCS provides this letter and encloses proposed findings and recommendations for consideration by the Department. In particular, PCS has identified two implementation changes and two rule amendments that would achieve the same level of water quality protection in the Tar-Pamlico River Basin while reducing the impact to PCS and other riparian property owners in the Tar-Pamlico River Basin.

The suggested implementation changes are for immediate, direct Department action and would include Department acceptance of the following buffer mitigation:

- 1) Alternative measures that reduce nutrient loading.
- 2) Coastal headwater stream buffer mitigation.

The suggested Tar-Pamlico River Basin Riparian Buffer Rule amendments are for EMC or General Assembly action:

- 1) Acceptance of the buffer mitigation location policy established by the General Assembly.
- 2) Correction of a codification error in the purpose statement that will protect riparian owners from having to defend against erroneous arguments about the purpose of the rule.

We have written the proposed findings and recommendations in a form and tone that would allow the Department, if it chooses to do so, to incorporate them directly into its study report. Consistent with our experience and knowledge base, we have only written findings and recommendations applicable to the Tar-Pamlico River Basin Riparian Buffer Rule. Thank you for your consideration of our proposed findings and recommendations for inclusion in your report to the General Assembly.

Sincerely,



**Ross M. Smith**  
Manager, Environment and Energy  
PotashCorp-Aurora (PCS Phosphate Company, Inc.)  
1530 NC Hwy 306 South  
Aurora, NC 27806

(O): 252-322-8270 (C): 252-916-3061  
Fax: 252-322-4444  
E-mail: [rsmith@pcsphosphate.com](mailto:rsmith@pcsphosphate.com)

**PCS Phosphate Company, Inc.**  
**Proposed Findings and Recommendations**  
**for the**  
**DENR Report to the General Assembly:**  
**Study of the Neuse and Tar-Pamlico Buffer Rules**

**IMPLEMENTATION CHANGES**  
**(Direct Department Action)**

**1. Acceptance of Alternative Measures for Buffer Mitigation**

**1.1. Findings**

The Tar-Pamlico Riparian Buffer Rule requires that persons who wish to undertake uses designated as “allowable with mitigation” obtain approval for a mitigation proposal. 15A NCAC 2B .0259(10)(b). The Department previously rejected mitigation proposals that include “[c]onstruction of an alternative measure that reduces nutrient loading.” The Department previously viewed the General Assembly approval found in N.C. Gen. Stat. § 143-214.20(a2)(5) as insufficient because it was not accompanied by separate EMC approval (e.g., rulemaking, variance, etc.). The Department has reconsidered this matter of implementing and applying the existing statutes and rules and believes that it can and should begin accepting alternative measures for buffer mitigation – without additional EMC or General Assembly action. Acceptance of alternative measures would not change the level of water quality protection in the river basin, and would reduce impact to riparian property owners in the river basin by making more mitigation opportunities available.

**1.2. Recommendation (Direct Department action)**

The Department will accept, as mitigation proposals or components of mitigation proposals pursuant to 15A NCAC 2B .0259(10)(b), the construction of alternative measures that the Department reasonably expects to reduce nutrient loading.

## **2. Acceptance of Coastal Headwater Stream Buffers for Buffer Mitigation**

### **2.1. Findings**

The Department previously did not accept coastal headwater stream buffer mitigation (“CHSBM”) for buffer mitigation to satisfy 15A NCAC 2B .0259(10)(b), based on the view that CHSBM is an “alternative measure” under N.C. Gen. Stat. § 143-214.20(a2)(5). Under Recommendation 1.2, alternative measures would be acceptable. However, even if Recommendation 1.2 were not adopted, CHSBM should be accepted. Upon reconsideration, the Department believes CHSBM is accurately categorized as traditional buffer mitigation, rather than an alternative measure that reduces nutrient loading. Coastal headwater streams have diffuse flow – a natural flow pattern in coastal headwater areas. CHSBM consists of naturally located and configured buffers on these streams. The Department has reconsidered this matter of implementing and applying the existing statutes and rules and believes that it can and should begin accepting CHSBM for buffer mitigation – without additional EMC or General Assembly action. The effectiveness of buffers like these for water quality protection is accepted for the same technical and scientific reasons that we have the buffer protection rules in the first place. Proof of their effectiveness is redundant and unnecessary. Acceptance of CHSBM would not change the level of water quality protection in the river basin, and would reduce impact to riparian property owners in the river basin by making more mitigation opportunities available.

### **2.2. Recommendation (Direct Department Action)**

The Department will accept, as mitigation proposals or as components of buffer mitigation proposals pursuant to 15A NCAC 2B .0259(10)(b), coastal headwater stream buffer mitigation.

**RULE AMENDMENTS**  
**(EMC or General Assembly Action)**

**1. Acceptance of General Assembly Buffer Mitigation Location Policy**

**1.1. Findings**

The Tar-Pamlico Buffer Rule requires that persons who wish to undertake uses designated as “allowable with mitigation” obtain approval for a mitigation proposal. 15A NCAC 2B .0259(10)(b). This requirement incorporates a mitigation location requirement (15A NCAC 2B .0260(4)), which has generated confusion and litigation. The Department has previously interpreted the requirement as restricting all mitigation to locations that are in the same 8-digit HUC as impacts. Some litigants have argued for an even more restrictive interpretation. However, the General Assembly’s mitigation location policy only restricts one mitigation option to the same 8-digit HUC and otherwise accepts mitigation that is in the same river basin as impacts. N.C.G.S. § 143-214.20(a2)(1) (participation in a mitigation bank – is “only available” to private entities if the bank is located in the same 8-digit HUC as the impacts).

The amendment of 15A NCAC 2B .0259(10)(b) to accept the General Assembly mitigation policy would reduce impact to riparian property owners in the river basins by making more mitigation opportunities available, but would not change the level of water quality protection in the river basins.

**1.2. Recommendation (Rule Amendment)**

Amend 15A NCAC 2B .0259(10)(b) by adding the underscored text as follows:

Obtain approval for a mitigation proposal pursuant to 15A NCAC 2B .0260, except that location of the mitigation effort, in lieu of satisfying 15A NCAC 2B .0260(4), may satisfy the applicable location requirement of N.C. Gen. Stat. § 143-214.20(a1)-(a2) (mitigation in same basin as impacts, but same hydrologic area for private party participation in compensatory mitigation bank).

## 2. Correction of Codified Version of Purpose Statement

### 2.1. Findings

The codified version of the purpose statement for the Tar-Pamlico River Riparian Buffer Rule, 15A NCAC 2B .0259(1), is not the version adopted by the EMC or considered by the public at rulemaking. Proposed text was published in the N.C. Register, but the EMC adopted different text. Following adoption, the EMC and DENR published the following:

15A NCAC 2B .0259 has been adopted as published in 14:3 NCR 171-182 with changes as follows:

(1) PURPOSE. The purpose of this Rule shall be to protect and preserve existing riparian buffers to maintain their nutrient removal functions in the entire Tar-Pamlico River Basin to maintain their nutrient removal functions whose surface waters are described in the Schedule of Classifications, 15A NCAC 2B .0316.

*See* 1999 Report of Proceedings on Proposed Rules for Protection and Maintenance of Riparian Areas in the Tar-Pamlico River Basin, available at Univ. of N.C. at Greensboro Jackson Library (Call # NCDOC C25 9:T173). However, the codified version contains three unauthorized changes – the addition of three commas:

PURPOSE. The purpose of this Rule shall be to protect and preserve existing riparian buffers, to maintain their nutrient removal functions, in the entire Tar-Pamlico River Basin, whose surface waters are described in the Schedule of Classifications, 15A NCAC 2B .0316.

15A NCAC 2B .0259(1). The codification error is apparent. As codified, 15A NCAC 2B .0259(1) is ungrammatical. Without the extra commas, 15A NCAC 2B .0259(1) is grammatical. More importantly, if the errors are not corrected, riparian property owners may have to defend against erroneous arguments that there are multiple purposes. Correction of the error would reduce impact to riparian property owners in the river basin by eliminating erroneous arguments, but would not change the level of water quality protection in the river basin.

### 2.2. Recommendation (Rule Amendment)

Amend 15A NCAC 2B .0259(1) by deleting the three unauthorized, extra commas.

# APPENDIX 1

Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised, the ground is stabilized and existing diffuse flow is maintained.

- (ii) At the time an existing use is proposed to be converted to another use, this Rule shall apply. An existing use shall be considered to be converted to another use if any of the following applies:
  - (A) Impervious surface is added to the riparian buffer in locations where it did not exist previously.
  - (B) An agricultural operation within the riparian buffer is converted to a non-agricultural use.
  - (C) A lawn within the riparian buffer ceases to be maintained.

(4) **ZONES OF THE RIPARIAN BUFFER.** The protected riparian buffer shall have two zones as follows:

- (a) Zone 1 shall consist of a vegetated area that is undisturbed except for uses provided for in Item (6) of this Rule. The location of Zone 1 shall be as follows:
  - (i) For intermittent and perennial streams, Zone 1 shall begin at the most landward limit of the top of 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 the surface water.
  - (ii) For ponds, lakes and reservoirs located within a natural drainage way, Zone 1 shall begin at the most landward limit of the normal water level or the rooted herbaceous vegetation and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water.
  - (iii) For surface waters within the 20 Coastal Counties (defined in 15A NCAC 2B .0202) within the jurisdiction of the Division of Coastal Management, Zone 1 shall begin at the most landward limit of:
    - (A) the normal high water level;
    - (B) the normal water level; or
    - (C) the landward limit of coastal wetlands as defined by the Division of Coastal Management; and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water, whichever is more restrictive.
- (b) Zone 2 shall consist of a stable, vegetated area that is undisturbed except for activities and uses provided for in Item (6) of this Rule. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised. 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. The combined width of Zones 1 and 2 shall be 50 feet on all sides of the surface water.

(5) **DIFFUSE FLOW REQUIREMENT.** Diffuse flow of runoff shall be maintained in the riparian buffer by dispersing concentrated flow and reestablishing vegetation.

- (a) Concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow before the runoff enters the Zone 2 of the riparian buffer.
- (b) Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.

(6) **TABLE OF USES.** The following chart sets out the uses and their designation under this Rule as exempt, allowable, allowable with mitigation, or prohibited. The requirements for each category are given in Item (7) of this Rule.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Airport facilities: <ul style="list-style-type: none"> <li>• Airport facilities that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> <li>• Airport facilities that impact greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>		X	X	
Archaeological activities	X			

Bridges		X		
Dam maintenance activities	X			
Drainage ditches, roadside ditches and stormwater outfalls through riparian buffers: <ul style="list-style-type: none"> <li>Existing drainage ditches, roadside ditches, and stormwater outfalls provided that they are managed to minimize the sediment, nutrients and other pollution that convey to waterbodies</li> <li>New drainage ditches, roadside ditches and stormwater outfalls provided that a stormwater management facility is installed to control nitrogen and attenuate flow before the conveyance discharges through the riparian buffer</li> <li>New drainage ditches, roadside ditches and stormwater outfalls that do not provide control for nitrogen before discharging through the riparian buffer</li> <li>Excavation of the streambed in order to bring it to the same elevation as the invert of a ditch</li> </ul>	X	X	X X	
Drainage of a pond in a natural drainage way provided that a new riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the new channel	X			
Driveway crossings of streams and other surface waters subject to this Rule: <ul style="list-style-type: none"> <li>Driveway crossings on single family residential lots that disturb equal to or less than 25 linear feet or 2,500 square feet of riparian buffer</li> <li>Driveway crossings on single family residential lots that disturb greater than 25 linear feet or 2,500 square feet of riparian buffer</li> <li>In a subdivision that cumulatively disturb equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> <li>In a subdivision that cumulatively disturb greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>	X	X X	X	
Fences provided that disturbance is minimized and installation does not result in removal of forest vegetation	X			
Forest harvesting - see Item (11) of this Rule				
Fertilizer application: <ul style="list-style-type: none"> <li>One-time fertilizer application to establish replanted vegetation</li> <li>Ongoing fertilizer application</li> </ul>	X			X
Grading and revegetation in Zone 2 only provided that diffuse flow and the health of existing vegetation in Zone 1 is not compromised and disturbed areas are stabilized	X			
Greenway/hiking trails		X		
Historic preservation	X			
Landfills as defined by G.S. 130A-290				X
Mining activities:				

- A minimum zone of 10 feet wide immediately adjacent to the water body shall be managed such that only vegetation that poses a hazard or has the potential to grow tall enough to interfere with the line is removed.
  - Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
  - Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain where trees are cut.
  - Rip rap shall not be used unless it is necessary to stabilize a tower.
  - No fertilizer shall be used other than a one-time application to re-establish vegetation.
  - Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
  - Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
  - In wetlands, mats shall be utilized to minimize soil disturbance.
- 2 Provided that poles or towers shall not be installed within 10 feet of a water body unless the Division completes a no practical alternatives evaluation.
- 3 Perpendicular crossings are those that intersect the surface water at an angle between 75 degrees and 105 degrees.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Playground equipment: <ul style="list-style-type: none"> <li>• Playground equipment on single family lots provided that installation and use does not result in removal of vegetation</li> <li>• Playground equipment installed on lands other than single-family lots or that requires removal of vegetation</li> </ul>	X	X		
Ponds in natural drainage ways, excluding dry ponds: <ul style="list-style-type: none"> <li>• New ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond</li> <li>• New ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond</li> </ul>		X	X	
Protection of existing structures, facilities and streambanks when this requires additional disturbance of the riparian buffer or the stream channel		X		
Railroad impacts other than crossings of streams and other surface waters subject to this Rule			X	
Railroad crossings of streams and other surface waters subject to this Rule: <ul style="list-style-type: none"> <li>• Railroad crossings that impact equal to or less than 40 linear feet of riparian buffer</li> <li>• Railroad crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> <li>• Railroad crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>	X	X	X	
Removal of previous fill or debris provided that diffuse flow is maintained and any vegetation removed is restored	X			
Road impacts other than crossings of streams and other			X	

<ul style="list-style-type: none"> <li>• Mining activities that are covered by the Mining Act provided that new riparian buffers that meet the requirements of Items (4) and (5) of this Rule are established adjacent to the relocated channels</li> <li>• Mining activities that are not covered by the Mining Act OR where new riparian buffers that meet the requirements of Items (4) and (5) of this Rule are not established adjacent to the relocated channels</li> <li>• Wastewater or mining dewatering wells with approved NPDES permit</li> </ul>	X	X	X	
<p>Non-electric utility lines:</p> <ul style="list-style-type: none"> <li>• Impacts other than perpendicular crossings in Zone 2 only<sup>3</sup></li> <li>• Impacts other than perpendicular crossings in Zone 1<sup>3</sup></li> </ul>		X	X	
<p>Non-electric utility line perpendicular crossing of streams and other surface waters subject to this Rule<sup>3</sup>:</p> <ul style="list-style-type: none"> <li>• Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width</li> <li>• Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width</li> <li>• Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width</li> <li>• Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width</li> <li>• Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer</li> </ul>	X	X	X	
On-site sanitary sewage systems - new ones that use ground absorption				X
<p>Overhead electric utility lines:</p> <ul style="list-style-type: none"> <li>• Impacts other than perpendicular crossings in Zone 2 only<sup>3</sup></li> <li>• Impacts other than perpendicular crossings in Zone 1<sup>1,2,3</sup></li> </ul>	X			
<p>Overhead electric utility line perpendicular crossings of streams and other surface waters subject to this Rule<sup>3</sup></p> <ul style="list-style-type: none"> <li>• Perpendicular crossings that disturb equal to or less than 150 linear feet of riparian buffer<sup>1</sup></li> <li>• Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer<sup>1,2</sup></li> </ul>	X	X		
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		X		

<sup>1</sup> Provided that, in Zone 1, all of the following BMPs for overhead utility lines are used. If all of these BMPs are not used, then the overhead utility lines shall require a no practical alternatives evaluation by the Division.

• Perpendicular crossings that disturb less than or equal to 40 linear feet of riparian buffer <sup>3,4</sup>	X			
• Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer <sup>3,4</sup>		X		

<sup>4</sup> Provided that, in Zone 1, all of the following BMPs for underground utility lines are used. If all of these BMPs are not used, then the underground utility line shall require a no practical alternatives evaluation by the Division.

- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain, except in the trench, where trees are cut.
- Underground cables shall be installed by vibratory plow or trenching.
- The trench shall be backfilled with the excavated soil material immediately following cable installation.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Vegetation management:				
• Emergency fire control measures provided that topography is restored	X			
• Periodic mowing and harvesting of plant products in Zone 2 only	X			
• Planting vegetation to enhance the riparian buffer	X			
• Pruning forest vegetation provided that the health and function of the forest vegetation is not compromised	X			
• Removal of individual trees which are in danger of causing damage to dwellings, other structures or human life	X			
• Removal of poison ivy	X			
• Removal of understory nuisance vegetation as defined in: Smith, Cherri L. 1998. Exotic Plant Guidelines. Department of Environment and Natural Resources. Division of Parks and Recreation. Raleigh, NC. Guideline #30	X			
Water dependent structures as defined in 15A NCAC 2B .0202		X		
Water supply reservoirs:				
• New reservoirs provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the reservoir		X		
• New reservoirs where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the reservoir			X	
Water wells	X			
Wetland restoration	X			

surface waters subject to this Rule				
Road crossings of streams and other surface waters subject to this Rule: <ul style="list-style-type: none"> <li>• Road crossings that impact equal to or less than 40 linear feet of riparian buffer</li> <li>• Road crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> <li>• Road crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>	X		X	
Scientific studies and stream gauging	X			
Stormwater management ponds excluding dry ponds: <ul style="list-style-type: none"> <li>• New stormwater management ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond</li> <li>• New stormwater management ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond</li> </ul>		X		X
Stream restoration	X			
Streambank stabilization		X		
Temporary roads: <ul style="list-style-type: none"> <li>• Temporary roads that disturb less than or equal to 2,500 square feet provided that vegetation is restored within six months of initial disturbance</li> <li>• Temporary roads that disturb greater than 2,500 square feet provided that vegetation is restored within six months of initial disturbance</li> <li>• Temporary roads used for bridge construction or replacement provided that restoration activities, such as soil stabilization and revegetation, are conducted immediately after construction</li> </ul>	X		X	X
Temporary sediment and erosion control devices: <ul style="list-style-type: none"> <li>• In Zone 2 only provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow in accordance with Item (5) of this Rule</li> <li>• In Zones 1 and 2 to control impacts associated with uses approved by the Division or that have received a variance provided that sediment and erosion control for upland areas is addressed to the maximum extent practical outside the buffer</li> <li>• In-stream temporary erosion and sediment control measures for work within a stream channel</li> </ul>	X		X	
Underground electric utility lines: <ul style="list-style-type: none"> <li>• Impacts other than perpendicular crossings in Zone 2 only<sup>3</sup></li> <li>• Impacts other than perpendicular crossings in Zone 1<sup>3,4</sup></li> </ul>	X			
Underground electric utility line perpendicular crossings of streams and other surface waters subject to this Rule: <sup>3</sup>				

# APPENDIX 2

- (a) Zone 1 shall consist of a vegetated area that is undisturbed except for uses provided for in Item (6) of this Rule. The location of Zone 1 shall be as follows:
- (i) For intermittent and perennial streams, Zone 1 shall begin at the most landward limit of the top of 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 the surface water.
  - (ii) For ponds, lakes and reservoirs located within a natural drainage way, Zone 1 shall begin at the most landward limit of the normal water level or the rooted herbaceous vegetation and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water.
  - (iii) For surface waters within the 20 Coastal Counties (defined in 15A NCAC 2B .0202) within the jurisdiction of the Division of Coastal Management, Zone 1 shall begin at the most landward limit of:
    - (A) the normal high water level;
    - (B) the normal water level; or
    - (C) the landward limit of coastal wetlands as defined by the Division of Coastal Management;
 and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water, whichever is more restrictive.
- (b) Zone 2 shall consist of a stable, vegetated area that is undisturbed except for activities and uses provided for in Item (6) of this Rule. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised. 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. The combined width of Zones 1 and 2 shall be 50 feet on all sides of the surface water.
- (5) **DIFFUSE FLOW REQUIREMENT.** Diffuse flow of runoff shall be maintained in the riparian buffer by dispersing concentrated flow and reestablishing vegetation.
- (a) Concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow before the runoff enters Zone 2 of the riparian buffer.
  - (b) Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.
- (6) **TABLE OF USES.** The following chart sets out the uses and their designation under this Rule as exempt, allowable, allowable with mitigation, or prohibited. The requirements for each category are given in Item (7) of this Rule.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Airport facilities: <ul style="list-style-type: none"> <li>• Airport facilities that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> <li>• Airport facilities that impact greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>		X	X	
Archaeological activities	X			
Bridges		X		
Dam maintenance activities	X			
Drainage ditches, roadside ditches and stormwater outfalls through riparian buffers: <ul style="list-style-type: none"> <li>• Existing drainage ditches, roadside ditches, and stormwater outfalls provided that they are managed to minimize the sediment, nutrients and other pollution that convey to waterbodies</li> <li>• New drainage ditches, roadside ditches and stormwater outfalls provided that a stormwater management facility is installed to control nitrogen and attenuate flow before the conveyance</li> </ul>	X	X		

<p>discharges through the riparian buffer</p> <ul style="list-style-type: none"> <li>• New drainage ditches, roadside ditches and stormwater outfalls that do not provide control for nitrogen before discharging through the riparian buffer</li> <li>• Excavation of the streambed in order to bring it to the same elevation as the invert of a ditch</li> </ul>				X
				X
Drainage of a pond in a natural drainage way provided that a new riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the new channel	X			
<p>Driveway crossings of streams and other surface waters subject to this Rule:</p> <ul style="list-style-type: none"> <li>• Driveway crossings on single family residential lots that disturb equal to or less than 25 linear feet or 2,500 square feet of riparian buffer</li> <li>• Driveway crossings on single family residential lots that disturb greater than 25 linear feet or 2,500 square feet of riparian buffer</li> <li>• In a subdivision that cumulatively disturb equal to or less than 150 linear feet, or one-third of an acre of riparian buffer</li> <li>• In a subdivision that cumulatively disturb greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>	X	X	X	
Fences provided that disturbance is minimized and installation does not result in removal of forest vegetation	X			
Forest harvesting - see Item (11) of this Rule				
<p>Fertilizer application:</p> <ul style="list-style-type: none"> <li>• One-time fertilizer application to establish replanted vegetation</li> <li>• Ongoing fertilizer application</li> </ul>	X			X
Grading and revegetation in Zone 2 only provided that diffuse flow and the health of existing vegetation in Zone 1 is not compromised and disturbed areas are stabilized	X			
Greenway / hiking trails		X		
Historic preservation	X			
Landfills as defined by G.S. 130A-290.				X
<p>Mining activities:</p> <ul style="list-style-type: none"> <li>• Mining activities that are covered by the Mining Act provided that new riparian buffers that meet the requirements of Items (4) and (5) of this Rule are established adjacent to the relocated channels</li> <li>• Mining activities that are not covered by the Mining Act OR where new riparian buffers that meet the requirements or Items (4) and (5) of this Rule are not established adjacent to the relocated channels</li> <li>• Wastewater or mining dewatering wells with approved NPDES permit</li> </ul>	X	X	X	
<p>Non-electric utility lines:</p> <ul style="list-style-type: none"> <li>• Impacts other than perpendicular crossings in Zone 2</li> </ul>		X		

only <sup>3</sup> • Impacts other than perpendicular crossings in Zone 1 <sup>3</sup>			X	
Non-electric utility line perpendicular crossings of streams and other surface waters subject to this Rule <sup>3</sup> : • Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width • Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width • Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width • Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width • Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer	X	X  X	X  X	
On-site sanitary sewage systems B new ones that use ground absorption				X
Overhead electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only <sup>3</sup> • Impacts other than perpendicular crossings in Zone 1 <sup>1,2,3</sup>	X  X			
Overhead electric utility line perpendicular crossings of streams and other surface waters subject to this Rule <sup>3</sup> : • Perpendicular crossings that disturb equal to or less than 150 linear feet of riparian buffer <sup>1</sup> • Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer <sup>1,2</sup>	X	X		
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		X		

<sup>1</sup> Provided that, in Zone 1, all of the following BMPs for overhead utility lines are used. If all of these BMPs are not used, then the overhead utility lines shall require a no practical alternative evaluation by the Division.

- A minimum zone of 10 feet wide immediately adjacent to the water body shall be managed such that only vegetation that poses a hazard or has the potential to grow tall enough to interfere with the line is removed.
- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain where trees are cut.
- Rip rap shall not be used unless it is necessary to stabilize a tower.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.

- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

<sup>2</sup> Provided that poles or towers shall not be installed within 10 feet of a water body unless the Division completes a no practical alternative evaluation.

<sup>3</sup> Perpendicular crossings are those that intersect the surface water at an angle between 75° and 105°.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Playground equipment: <ul style="list-style-type: none"> <li>• Playground equipment on single family lots provided that installation and use does not result in removal of vegetation</li> <li>• Playground equipment installed on lands other than single-family lots or that requires removal of vegetation</li> </ul>	X	X		
Ponds in natural drainage ways, excluding dry ponds: <ul style="list-style-type: none"> <li>• New ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond</li> <li>• New ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond</li> </ul>		X	X	
Protection of existing structures, facilities and streambanks when this requires additional disturbance of the riparian buffer or the stream channel		X		
Railroad impacts other than crossings of streams and other surface waters subject to this Rule.			X	
Railroad crossings of streams and other surface waters subject to this Rule: <ul style="list-style-type: none"> <li>• Railroad crossings that impact equal to or less than 40 linear feet of riparian buffer</li> <li>• Railroad crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> <li>• Railroad crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>	X	X	X	
Removal of previous fill or debris provided that diffuse flow is maintained and any vegetation removed is restored	X			
Road impacts other than crossings of streams and other surface waters subject to this Rule			X	
Road crossings of streams and other surface waters subject to this Rule: <ul style="list-style-type: none"> <li>• Road crossings that impact equal to or less than 40 linear feet of riparian buffer</li> <li>• Road crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>	X	X		

<ul style="list-style-type: none"> <li>Road crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer</li> </ul>			X	
Scientific studies and stream gauging	X			
<p>Stormwater management ponds excluding dry ponds:</p> <ul style="list-style-type: none"> <li>New stormwater management ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond</li> <li>New stormwater management ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond</li> </ul>		X	X	
Stream restoration	X			
Streambank stabilization		X		
<p>Temporary roads:</p> <ul style="list-style-type: none"> <li>Temporary roads that disturb less than or equal to 2,500 square feet provided that vegetation is restored within six months of initial disturbance</li> <li>Temporary roads that disturb greater than 2,500 square feet provided that vegetation is restored within six months of initial disturbance</li> <li>Temporary roads used for bridge construction or replacement provided that restoration activities such as soil stabilization and revegetation, occur immediately after construction</li> </ul>	X	X	X	
<p>Temporary sediment and erosion control devices:</p> <ul style="list-style-type: none"> <li>In Zone 2 only provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow in accordance with Item (5) of this Rule</li> <li>In Zones 1 and 2 to control impacts associated with uses approved by the Division or that have received a variance provided that sediment and erosion control for upland areas is addressed to the maximum extent practical outside the buffer</li> <li>In-stream temporary erosion and sediment control measures for work within a stream channel</li> </ul>	X	X		
<p>Underground electric utility lines:</p> <ul style="list-style-type: none"> <li>Impacts other than perpendicular crossings in Zone 2 only<sup>3</sup></li> <li>Impacts other than perpendicular crossings in Zone 1<sup>4</sup></li> </ul>	X	X		
<p>Underground electric utility line perpendicular crossings of streams and other surface waters subject to this Rule:</p> <ul style="list-style-type: none"> <li>Perpendicular crossings that disturb less than or equal to 40 linear feet of riparian buffer<sup>4</sup></li> <li>Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer<sup>4</sup></li> </ul>	X	X		

<sup>4</sup> Provided that, in Zone 1, all of the following BMPs for underground utility lines are used. If all of these BMPs are not used, then the underground utility line shall require a no practical alternative evaluation by the Division.

- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.

- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain, except in the trench, where trees are cut.
- Underground cables shall be installed by vibratory plow or trenching.
- The trench shall be backfilled with the excavated soil material immediately following cable installation.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Vegetation management:				
• Emergency fire control measures provided that topography is restored	X			
• Periodic mowing and harvesting of plant products in Zone 2 only	X			
• Planting vegetation to enhance the riparian buffer	X			
• Pruning forest vegetation provided that the health and function of the forest vegetation is not compromised	X			
• Removal of individual trees which are in danger of causing damage to dwellings, other structures or human life	X			
• Removal of poison ivy	X			
• Removal of understory nuisance vegetation as defined in: Smith, Cherri L. 1998. Exotic Plant Guidelines. Dept. of Environment and Natural Resources. Division of Parks and Recreation. Raleigh, NC. Guideline #30	X			
Water dependent structures as defined in 15A NCAC 2B .0202		X		
Water supply reservoirs:				
• New reservoirs provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the reservoir		X		
• New reservoirs where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the reservoir			X	
Water wells	X			
Wetland restoration	X			

- (7) REQUIREMENTS FOR CATEGORIES OF USES. Uses designated as exempt, allowable, allowable with mitigation and prohibited in Item (6) of this Rule shall have the following requirements:
- EXEMPT. Uses designated as exempt are allowed within the riparian buffer. Exempt uses shall be designed, constructed and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable. In addition, exempt uses shall meet requirements listed in Item (6) of this Rule for the specific use.
  - ALLOWABLE. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule. These uses require written authorization from the Division or the delegated local authority.