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June 30, 2016

TO: ENVIRONMENTAL REVIEW COMMISSION  
Commission Counsel Jeff Hudson  
Commission Counsel Jennifer McGinnis

FROM: Steven J. Rowlan, Chair, Environmental Management Commission

RE: EMC Reports

As required by Session Law 2015-246 Section 13.2 (a), the Environmental Management Commission (EMC) is submitting the attached report entitled "Study of the State's Riparian Buffer Protection Program."

Attachment

cc: Tom Reeder, Assistant Secretary for Environment, NCDEQ  
Jay Zimmerman, Director, DWR, NCDEQ  
Sheila Holman, Director, DAQ, NCDEQ  
Mollie Young, Director, LIA, NCDEQ  
Mariah Matheson, Research Division, NC General Assembly  
Claire Hester, Fiscal Research Division, NC General Assembly

**STATE OF NORTH CAROLINA  
ENVIRONMENTAL MANAGEMENT COMMISSION  
DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Study of the State's Riparian Buffer Protection Program  
Pursuant to SL 2015-246**

**May 11, 2016**

**Executive Summary**

Nutrient management strategies were developed in the 1990's for the Neuse and Tar-Pamlico River Basins in response to fish kills and algal blooms, linked to excessive nutrients.

Management strategies were also developed in the Catawba River Basin and the Randleman Lake, Jordan Lake and Goose Creek Watersheds in response to chlorophyll a standard violations, impairments, water quality problems, TMDLs (Total Maximum Daily Load) and the need to protect a federally endangered aquatic species.

The buffer rules were adopted specifically to address nutrient, sediment and pollutant loading as part of the larger management strategies that also require reductions from municipal and industrial dischargers and agriculture (as required in G.S. 143-215.8B). Scientific literature demonstrates that 50-foot riparian buffers on intermittent and perennial streams perform many functions that protect water quality, including nutrient, sediment and pollutant removal, stream bank stabilization, and temperature control.

After studying ways to provide regulatory relief for parcels of land platted prior to the effective date of the applicable buffer rule, the Commission recommends allowing the rulemaking process currently underway to continue. The Commission believes the rulemaking process is the best way to solicit input from all stakeholders and evaluate and incorporate amendments to the rule that will provide regulatory relief for parcels of land platted prior to the effective date of the applicable buffer rule, without unduly shifting the burden of additional nutrient reductions to other sources, such as farmers, local governments, etc., which would be much more costly than maintaining existing riparian buffers.

## **Introduction**

Pursuant to Session Law 2015-246 (13.2.)(a), the Environmental Management Commission (Commission), with the assistance of the Department of Environmental Quality (Department), examined ways to provide regulatory relief from the impacts of riparian buffer rules adopted to implement the State's Riparian Buffer Protection Program for parcels of land that were platted on or before the effective date of the applicable riparian buffer rule. The Commission was tasked to specifically examine ways to fairly provide properties with relief where a change in use had occurred that would otherwise trigger the requirements of the riparian buffer rules. Such relief would be determined on a case-by-case basis and provide relief to successor owners.

As specified in SL 2015-246 (13.2.)(a), a change in use that would otherwise trigger the requirements of the riparian buffer rules did not include either of the following circumstances:

- (1) Developing from a vacant condition to a use allowed by the current local regulations, unless the local regulations have been changed at the request of the property owner since the date the buffer rule was applied; the parcel was recorded prior to the effective date of the applicable buffer rule; and the allowable use is for any nonfarming or nonagricultural purpose.
- (2) The property configuration has not been altered except as a result of either an eminent domain action or a recombination involving not more than three parcels, all of which were recorded before the effective date of the applicable buffer rule.

## **Background**

*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 Commission designated the entire Tar-Pamlico River Basin as Nutrient Sensitive Waters (NSW) in 1989, and a management strategy was developed.

*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 Commission to develop a plan to reduce the average annual load of nitrogen to the Neuse River estuary.

*Randleman* – When the Piedmont Triad Regional Water Authority requested that the Deep River be reclassified for drinking water supply use and a dam be constructed on the River in 1997, models indicated potential violations of North Carolina's chlorophyll a standard in the new reservoir. As part of the state and federal approval to reclassify the water and build the Randleman Reservoir, a nutrient management strategy was developed.

*Catawba* – Lakes along the mainstem of the Catawba River (Rhodhiss, Hickory and Wylie) had documented water quality problems from excess nutrients. In 2003 the Commission completed a stakeholder process and the temporary buffer rules that had been in effect since 2001 became permanent in 2004.

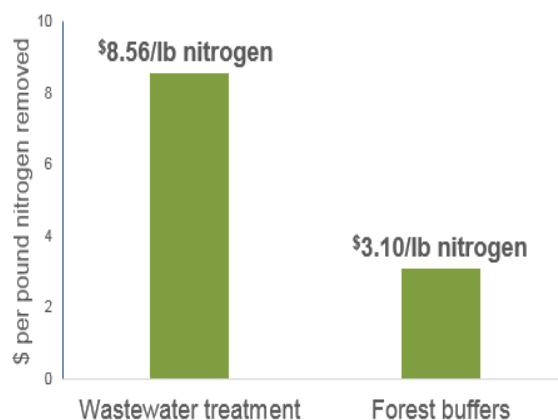
*Goose Creek* – The Goose Creek watershed provides habitat for an aquatic animal species listed as federally endangered by the U.S. Fish and Wildlife. The Commission designated Goose Creek as impaired in 2002. A TMDL (Total Maximum Daily Load) was finalized in 2005 and a water quality management strategy was developed.

*Jordan* – The Commission designated Jordan Reservoir a NSW the year of its impoundment and imposed phosphorus limits on wastewater dischargers. The lake did not respond to these controls so in 2002, the Commission determined the reservoir was impaired. Nutrient management strategy development began in 2003 and the U.S. EPA approved a final TMDL in September 2007.

*Statutory requirement* – G.S. 143-215.8B directs the Commission to consider the cumulative impacts of all point and nonpoint sources of pollutants (*e.g.* wastewater discharges, development, agricultural operations, etc.). It further requires that the Commission provide that all point and nonpoint sources jointly share the responsibility of reducing the pollutants in the State's waters in a fair, reasonable, and proportionate manner, using computer modeling and the best science and technology reasonably available and considering future anticipated population growth and economic development.

The Division of Water Resources (Division) uses water quality monitoring and modeling to determine the allocation of nutrient loading among the different source categories. That information becomes the basis for a 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.

The riparian buffer rule within each management strategy is an important tool for addressing nutrient loading from development activity. Simply removing the existing riparian buffer requirements would shift the burden of additional nutrient reductions to other sources, such as farmers, local governments, etc., which would be much more costly than maintaining existing riparian buffers (see Figure 1).



**Figure 1.** Cost in dollars per pound of nitrogen removed for wastewater treatment and forest buffers. (Source: Hanson, Craig, John Talberth and Logan)

*Yonavjak. 2011 "Forests for water: Exploring payments for watershed services in the US South." World Resources Institute Issue Brief, Issue 2. Pp15)*

*Update on Coastal Waters* – Fish kills and harmful algal blooms during the 1980s and 1990s were visible signs of coastal water quality problems. According to the 2015 North Carolina Coastal Habitat Protection Plan, large fish kills have diminished somewhat in recent years, but many coastal waters remain impaired (excess sediment loading is the most common cause of impairment).

### **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 organic debris to the stream, controlling light and temperature; and providing habitat for wildlife. (see Appendix A for references)

Riparian buffers also provide many financial benefits to both the property owner and the community including: 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). (see Appendix A for references)

### **Riparian Buffer Rule Overview**

The purpose of each of the riparian buffer rules is to protect *existing* riparian buffers within the designated river basin or watershed. The Neuse, Tar-Pamlico, Catawba, Randleman and Jordan 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 Goose Creek rules require a 100-foot undisturbed buffer outside of the 100-year floodplain and a 200-foot undisturbed buffer inside the 100-year floodplain.

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 activities allowed in each zone of the buffer. There are three different categories of allowable activities:

- **Exempt** uses are allowed in the riparian buffer without approval from the Division or Local Government.
- **Allowable** uses may occur in the buffer on a case-by-case basis with approval from the Division or Local Government.
- **Allowable with mitigation** uses may occur in the buffer on a case-by-case basis with approval from the Division or Local Government when mitigation is provided.

Some examples of these different uses include maintaining an existing lawn, pruning, removing nuisance vegetation, removing trees that may be a danger, planting vegetation, grading in Zone 2, fences, playground equipment, and driveway crossings.

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 the Division or Local Government for impacts to Zone 2 only. Major variances can be granted by the Commission for impacts to Zone 1.

### **Recent Session Law Changes**

Under Session Law 2011-394, a grandfather provision was adopted to allow encroachment into Zone 2 of the riparian buffer if 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 counties in the Neuse and Tar-Pamlico River Basins. The provision allows additional flexibility in siting structures on these small, previously platted lots without having to go through a variance process. In a study submitted to the General Assembly in February 2012, the Department recommended expanding the “grandfather” provision to all counties in the Neuse and Tar-Pamlico Basin; that change was adopted in Session Law 2012-200.

Under Session Law 2015-246, a landowner can request the ability to remove woody vegetation in the buffer upon a showing that alternative measures (*e.g.* buffer mitigation, stormwater treatment) will provide equal or greater water quality protection. This session law also changed the start point of the buffer from the landward edge of the coastal marsh to the normal high water level or normal water level, which added even more flexibility for coastal lots.

### **Rule Revision Process Underway**

Pursuant to G.S. 150B-21.3A, the Commission reviewed the riparian buffer protection rules and determined them to be “necessary with substantive interest.” The Commission has already begun the rulemaking process to amend the riparian buffer rules. Currently, the rules are being reviewed by the Department and will be presented to the Commission in the winter of 2016. Public notice and hearings will occur during the spring/summer of 2017, with EMC adoption by fall of 2017. As part of the rule revision process, the Commission will be incorporating changes to the riparian buffer rules to provide regulatory relief for parcels of land that were platted on or before the effective date of the applicable buffer rule. Some of the proposed major changes for parcels of land platted prior to the effective date of the applicable buffer rule include the following:

*Expand “Grandfather” provision* – As stated above, SL 2011-394 and SL 2012-200 established a new Allowable use allowing encroachment into Zone 2 in the Neuse and Tar-Pamlico River Basins. The Commission is proposing to expand this provision to provide regulatory relief in the Jordan and Randleman Lake Watersheds as well. Such relief would be determined on a case-by-case basis and provide relief to successor owners.

*Broaden “Grandfather” provision* – The Commission is also proposing to broaden this provision by allowing for further encroachment into Zone 1 of the riparian buffer when mitigation is provided. This would provide additional regulatory relief in the Neuse, Tar-Pamlico, Jordan and Randleman Rules. Such relief would be determined on a case-by-case basis and provide relief to successor owners.

*Additional exemptions* – The Commission will evaluate whether exemptions for existing development should be expanded in Zones 1 and 2 for lots platted prior to the adoption date of the specific buffer rule. For example, commercial lots less than five acres and residential lots less than two acres.

*Modify the variance process* – The current Major Variance process is cumbersome and time-consuming for the applicant, DEQ staff and the Commission. The Commission is proposing to remove the requirement for Major Variances to be heard before the Commission and instead allow the decision to be made by the Director of the Division of Water Resources (Division). This would greatly reduce the regulatory burden on all applicants, and would be consistent with other permitting programs within the Division. Such relief would be determined on a case-by-case basis and provide relief to successor owners.

*Modify the variance hardships* – The hardships as currently written are onerous. The Commission is proposing to make significant changes to the hardship requirements, including removing the requirement that applicants have purchased the property prior to the effective date of the rule. This would provide regulatory relief, especially to successor owners.

*Clarify change in use* – The Commission will clarify that change of ownership through purchase or inheritance is not a change of use.

*Expand view corridors* – The Commission will consider whether to expand the “view corridors use” in the current Catawba rule to the other buffer rules. This may include thinning of underbrush, shrubs and limbs to enhance one’s view, provided soils are undisturbed, diffuse flow is maintained, and no stems of woody vegetation larger than three inches DBH (diameter at breast height) are removed. Thinning of underbrush, shrubs and limbs up to 50% of individual tree height would be “exempt;” above 50% would be “allowable.” The Commission will seek input on the 50% and three inch DBH caps.

### **Conclusion**

Scientific literature demonstrates that riparian buffers perform many functions that protect water quality, including nutrient, sediment and pollutant removal, stream bank stabilization, and temperature control. The buffer rules were adopted specifically to address nutrient, sediment and pollutant loading as part of larger management strategies that also require reductions from municipal and industrial dischargers and agriculture.

The Commission recommends allowing the rulemaking process currently underway to continue. The Commission believes the rulemaking process is the best way to solicit input from all stakeholders and evaluate and incorporate amendments to the rule that will provide regulatory relief for parcels of land platted prior to the effective date of the applicable buffer rule, without unduly shifting the burden of additional nutrient reductions to other sources, such as farmers, local governments, etc.



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