

# Coastal Stormwater Rules: Myths vs. Facts

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## Background

In 2005 the Division of Water Quality (DWQ) performed a comprehensive review of the effectiveness of the existing Coastal Stormwater Rule. DWQ Staff concluded that the existing Coastal Stormwater Rule was outdated and ineffective in providing an adequate level of environmental protection to the coastal ecosystem. This analysis, which was supported by a number of published scientific studies, and a thorough analysis of statewide water quality data and development trends, made the following conclusions and points<sup>1</sup>:

- That stormwater runoff is the most critical water quality issue in coastal NC.
- That the low-density limit in the current stormwater rules, which is set at 25% to 30% impervious surface density, is set too high. Scientific studies repeatedly note that low density levels above 10% to 15% impervious surface density result in water quality degradation.
- That a greater amount of stormwater runoff needs to be controlled and treated than is required in the current Coastal Stormwater Rules in order for these rules to prevent the further degradation of North Carolina's coastal waters.
- That North Carolina has experienced a continual trend of impairment of its coastal waters since the existing rule was put into place.
- That in **every specific case that was examined** in the DWQ study, the existing Coastal Stormwater Rules **failed to prevent further degradation** of coastal receiving waters and the permanent closure of commercial shellfishing waters when a significant level of development occurred within the subject watershed.
- That the **current** DWQ coastal stormwater runoff management **program** can, in some cases, **facilitate the impairment** and degradation of receiving waters. This anomaly is the result of the inadequacies of the current rules, in particular the fact that the low density threshold is set too high and that the rules do not require the control and treatment of enough stormwater runoff.

**Myth:** The changes to the coastal stormwater regulations will result in a large percentage of the coast being undevelopable.

**Fact:** The Coastal Stormwater rule does not place a cap on development. The only requirement is for new developments to control and treat their stormwater that is having a significant negative impact on our coastal waters.

**Myth:** The changes to the coastal stormwater regulations will be prohibitively expensive for individual homeowners.

**Fact:** Individual lot owners wishing to construct a home must first disturb more than 10,000 square feet and place impervious surface (or built-upon area- BUA) on 24% (or if within ½ mile from shellfish waters, 12%) of their lot before they are required to control or treat stormwater. The overwhelming majority of Beaufort & Hyde Counties are outside the ½ mile of shellfish waters area.





For example, projects on a ½ acre lot, outside ½ mile of shellfish waters can build a footprint of 5,227.2 square feet without any control of stormwater. If you exceed the 24% BUA, the homeowner has many options, including landscape features known as rain gardens (pictured above) to control their stormwater runoff. Rain gardens provide a nice amenity to the lot and also limit our impact on water resources in times of drought. Other options include rain cisterns (pictured at left) or barrels, green roofs (useful to reduce energy costs), and permeable pavement. Homeowners can recoup the costs of cisterns quickly by reduced water bills when rainwater is harvested and re-used. Over 30% of domestic water supply is used for the purpose of irrigation. The cost for a rain garden for 3,600 square foot home is approximately \$3000.

The median 2006 price of a 3600 sq. ft. home in Carteret County is \$255,000. <sup>ii</sup>

**Myth:** The coastal counties are unduly burdened with strict stormwater controls when non-coastal counties upstream are not required to treat stormwater runoff.

**Fact:** The majority of the area within North Carolina (including all of municipalities and most counties upstream on the Tar River) that is outside of the 20 Coastal Counties is already covered under some type of state stormwater control program. Most of these programs are already implemented within the 80 Non-Coastal Counties. Their regulations are significantly more stringent than the stormwater control program that is currently in place in most of the 20 Coastal Counties. For instance, no program in the 80 Non-Coastal Counties allows development density above 24% without structural stormwater controls and in the Tar-Pamlico, most of the upstream communities, including Washington, have to treat their stormwater at approximately 11% impervious surface. However, in 90% of the 20 Coastal Counties today, a site can be developed with up to 30% impervious surface density without implementing structural stormwater controls. This is one of the inequities that is being addressed with this rule change.

**Myth:** Our pollution problems on the coast come from upstream.

**Fact:** Most of the pollution problems on the coast are homegrown. While we do live downstream, most of the regions upstream are already required to treat their stormwater runoff.

In many cases the stormwater run-off carries bacteriological pollutants, like fecal coliforms, into the surface waters of the coast. Once the concentrations of these bacteriological pollutants become too high these waters are not safe for recreational contact or shellfish consumption, resulting in areas being closed to shellfish harvesting and activities such as swimming and surfing. These closures are a direct result of polluted storm water run-off and affect anyone who may want to swim or harvest shellfish in these waters, now and in the future. The waters of the Tar-Pamlico River are public trust waters and belong to all of NC's citizens. They need to be protected so that everyone may enjoy the bounty of these natural resources<sup>iii</sup>.

Bacteriological pollutants primarily come from three sources: wastes from wild animals and birds, wastes from domesticated animals and pets, and failing septic systems. Under natural conditions these bacteriological pollutants would remain on the ground where they would not impact coastal waters. However, when impervious surfaces are added to the landscape as a result of new development, these surfaces generate stormwater run-off that picks up these pollutants and deposits them into NC's

waterways. Since we know these bacteria cannot live outside of the gut for more than 2-3 days, we can accurately say this type of bacterial pollution originates locally.

**Myth:** The new rules will require that any new development or construction project be 2-feet above the water table and prohibit development in many locations.

**Fact:** First of all, the two-feet of separation from the groundwater is an existing requirement. This is not new. Second, this requirement is for stormwater control practices only. In the draft and final rules, the North Carolina EMC relaxed the regulation for separation from groundwater for infiltration basins. The existing rule requires 2-feet of naturally occurring separation. The proposed rule changes the requirement to 1 foot of naturally occurring separation, allowing the other foot to be fill. Furthermore, the previous rule mandated infiltration basins. The final rules increase flexibility for developers wishing to build in high water table areas by allowing the use of any stormwater BMP located in the state's manual.

Many in the development community suggest that this rule change result in limiting further development in most of Eastern NC. In fact, the rule change allows for more flexibility and will allow for development in areas that may not have been able to be developed previously due to a high groundwater table.

Stormwater BMP	Description	Cost Range
Cistern	Collection system for roof runoff that can be used in numerous ways. Also called water harvesting. Collected water can be used, for example, to flush toilets, irrigate lawns and gardens, and wash cars.	\$0.75-2.00 per gallon depending on the size of the cistern. Size can range from 100-2500 gallons for a typical home. <sup>iv</sup>
Rain Barrel	Barrel to collect roof runoff from down spout.	\$20-\$120 Average \$216 for barrel and all accessories. <sup>v</sup>
Backyard Rain Garden (Bioretention)	Landscaped areas that treat stormwater runoff.	\$1.50-3.00/sq.ft. <sup>vi</sup>
Permeable Pavement	Pavement that allows water to pass through.	\$2-10/ sq. ft. depending on materials used <sup>iii vii</sup>
Green Roof	Vegetative roof that reduces runoff, decreases energy costs and prolongs the life of the roof.	\$12-25 / sq. ft. <sup>i</sup>
Backyard Wetland	Constructed wetland for stormwater treatment.	\$3.00-4.00/ sq. ft <sup>iii</sup>

<sup>i</sup> Summary of Coastal Stormwater Rules from the NC Division of Water Quality

<sup>ii</sup> Division of Water Quality Economic Analysis. <http://h2o.enr.state.nc.us/su/coastal.htm>

<sup>iii</sup> NC Division of Water Quality. 2007. The North Carolina Coastal Stormwater Rule Factsheet. [http://h2o.enr.state.nc.us/su/documents/CoastalRules-Factsheet-Longversion-2\\_000.doc](http://h2o.enr.state.nc.us/su/documents/CoastalRules-Factsheet-Longversion-2_000.doc)

<sup>iv</sup> Hunt, W. H. and Szpir, L.L. 2006. Urban Waterways: Permeable Pavements, Green Roofs and Cisterns. Stormwater Treatment practices for low impact development. NC Cooperative Extension Service.

<sup>v</sup> [http://www.lid-stormwater.net/raincist\\_cost.htm](http://www.lid-stormwater.net/raincist_cost.htm)

<sup>vi</sup> Information provided by Community Conservation Assistance Program, NC Division of Soil and Water Conservation.

<sup>vii</sup> [http://www.lid-stormwater.net/permpaver\\_costs.htm](http://www.lid-stormwater.net/permpaver_costs.htm)