

**Coastal Erosion in North Carolina:
Terminal Groins and the Coastal Policy Reform Act of 2013**

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Introduction

In July, the North Carolina legislature passed Senate Bill 151.¹ The new law, titled the “Coastal Policy Reform Act of 2013” (“Act”),² reflects a continued shift in coastal policy, favoring the construction of terminal groins along the North Carolina coast to combat coastal erosion.³ The Act retains the four terminal groin pilot program instituted in 2011, but weakens the requirements needed for the North Carolina Coastal Resources Commission (“CRC”) to issue groin permits⁴ and reduces the financial accountability requirements for permit seekers.⁵

The final version of the bill is markedly different from the original version of the bill proposed by Republican Senator Bill Rabon.⁶ The original version of the bill would have opened up the entire North Carolina coast to terminal groin construction by eliminating the four terminal groin cap that was created in 2011.⁷ After public outcry and opposition from Governor McCrory and the North Carolina Department of Environment and Natural Resources,⁸ a more moderate version of the bill was passed into law.⁹

¹ S. 151, Gen. Assem., 2013 Sess. (N.C. 2013), *available at* <http://www.ncga.state.nc.us/EnactedLegislation/SessionLaws/PDF/2013-2014/SL2013-384.pdf>.

² Coastal Policy Reform Act, 2013 N.C. Sess. Law 384.

³ *Id.*

⁴ *See infra* note 25 and accompanying text.

⁵ *See infra* note 26 and accompanying text.

⁶ Senator Bill Rabon represents Bladen, Brunswick, New Hanover, and Pender Counties.

⁷ An Act to Authorize the Permitting and Construction of Up to Four Terminal Groins at Inlets Under Certain Conditions, 2011 N.C. Sess. Law 387, [hereinafter Terminal Groin Act] *available at* <http://www.ncleg.net/Sessions/2011/Bills/Senate/PDF/S110v6.pdf>.

⁸ Kirk Ross, *McCrory, DENR Oppose Jetty Bill*, NORTH CAROLINA COASTAL FED’N, (May 30, 2013) <http://www.nccoast.org/Article.aspx?k=643974a5-f761-4285-a432-babad06300e9>.

⁹ *See* Coastal Policy Reform Act, *supra* note 2.

Coastal Erosion “Control” Methods

From a practical standpoint, coastal homes in North Carolina are built on dynamic barrier islands, which are subject to powerful natural forces such as waves, currents, wind, and storms. These natural forces shift sand at incredible rates, thereby causing coastal erosion. Erosion rates can vary from one area to another, but generally, erosion rates tend to be higher near inlets.¹⁰

Several methods can be used to combat erosion. Temporary prevention methods include beach nourishment projects, which involve pumping dredged sand onto the beach.¹¹ These projects may be privately or publicly funded and may be a one-time placement or long-term projects.¹² While beach nourishment projects can provide a wider beach and protect homes, the “new” beach can literally be washed away overnight. Thus, the burdensome permitting and funding processes to secure such projects can often be hard to justify against such fleeting benefits.¹³ Furthermore, the dredging and pumping of sand can harm many types of marine species.¹⁴

Soft structures, such as sandbags, are another method used to protect coastal property.¹⁵ Generally, sandbags are placed in front of threatened property to create a barrier to the sea.

¹⁰ *Coastal Hazards and Storm Information: What You Should Know about Oceanfront Development*, N.C. DIV. OF COASTAL MGMT., <http://dcm2.enr.state.nc.us/hazards/erosion.htm> (last updated May 10, 2010).

¹¹ Joseph J. Kalo, *North Carolina Oceanfront Property and Public Waters and Beaches: The Rights of Littoral Owners in the Twenty-First Century*, 83 N.C. L. Rev. 1427, 1453–54 (2005).

¹² *Id.* Long-term projects usually require federal funding. *Id.* at 1457

¹³ *Id.* at 1453–66.

¹⁴ See generally Ted Wilgis, *The Risks of Renourishment: How Pumping Sand on North Carolina’s Beaches Can Affect Sea Turtles, Mole Crabs and other Critters*, N.C. COASTAL FED’N (2002), available at <http://www.nccoast.org/uploads/documents/coastal-issues/TurtleReport.pdf>.

¹⁵ In North Carolina, beach nourishment projects and temporary sandbags were the only erosion control measures available to homeowners from 1985 to 2011. See Kalo, *supra* note 11, at 1488–89. For a brief summary of the legal history on the use of sandbags in North Carolina see *History of the CRC’s Sandbag Rules*, N.C. DIV. OF COASTAL MGMT., available at <http://dcm2.enr.state.nc.us/CAMAGram/Fall10/sandbaghistory.html> (last updated Nov. 3, 2010).

Unfortunately, sandbags can be an eyesore to beachgoers and can deteriorate over time, leaving sandbag material strewn across the beach and the water. Furthermore, removal of sandbags is an ongoing source of litigation and regulatory debate.¹⁶

Another method to combat coastal erosion is the use of hard structures, such as “terminal groins,” “jetties,” and “breakwaters.”¹⁷ Generally, these devices consist of a wall extending perpendicular to the shoreline and are designed to stabilize the coastline by capturing sand flowing along ocean currents.¹⁸ While the terminology can often overlap and be controversial,¹⁹ a “groin” is usually smaller than a “jetty.”²⁰ Another general distinction is that a “groin” is intended to stabilize the shoreline, whereas a “jetty” is intended to stabilize a channel for navigation.²¹ A “terminal groin” is a groin that is located at the end of an island.²²

Proponents argue that terminal groins provide a long-term solution to coastal erosion and save taxpayer money by reducing the need for beach nourishment projects.²³ While groins may reduce the need for beach nourishment in the immediate vicinity of the groin, the groin can deprive nearby beaches from naturally migrating sand.²⁴ In other words, the construction of a

¹⁶ See, e.g., *Riggings Homeowners, Inc. v. Coastal Res. Comm'n of State*, 747 S.E.2d 301 (N.C. Ct. App. 2013); Gareth McGrath, *Sandbag Removals Ordered by Coastal Resources Commission*, STAR NEWS ONLINE (Sep. 16, 2010), available at <http://www.starnewsonline.com/article/20100916/ARTICLES/100919711>.

¹⁷ See *Terminal Groins 101*, N.C. COASTAL FED’N, available at <http://www.nccoast.org/content.aspx?key=79e38ba1-e221-4033-a2b4-86f17b374a7f>.

¹⁸ *Id.* “The length, height, and permeability of the groin will determine how effective the groin is at trapping sediment updrift of the groin and the overall impact of the groin on sediment transport.” N.C. COASTAL RES. COMM’N, NC TERMINAL GROIN STUDY FINAL REPORT ES-6 (2010), available at <http://dcm2.enr.state.nc.us/CRC/tgs/Terminal%20Groin%20Study%20Final%20Report.pdf>.

¹⁹ See *infra* note 29 and accompanying text; see *infra* note 37.

²⁰ See *Terminal Groins 101*, *supra* note 17.

²¹ *Id.*

²² See Coastal Policy Reform Act, *supra* note 2, at § 113A-115.1 (a)(3).

²³ Kirk Ross, *Bill Guts Safeguards for Terminal Groins*, N.C. COASTAL FED’N (May 15, 2013), available at <http://www.nccoast.org/Article.aspx?k=feb7fe93-e597-4e69-9ef0-8140afbe780a>.

²⁴ See Kalo, *supra* note 11, at 1486–87.

groin may stabilize the sand in one area while exacerbating erosion problems in others.²⁵ A group of scientists opposing a proposed bill that would have lifted the hard structure ban in 2009, argued that, “[t]he localized and temporary updrift benefits afforded by groins and jetties rarely, if ever, justify the downdrift damage caused by increased erosion – regardless of whether it is to developed or undeveloped shorelines, inlets and islands.”²⁶ More pointedly, Mike Giles of the Coastal Federation has argued, “when you build in [coastal] areas, you’re rolling the dice. And the people of North Carolina should not have to pay for your decisions. And the resources and the public trust waters should not be in jeopardy because you made a bad decision.”²⁷

Legal Issues Arising from Coastal Erosion

Coastal erosion creates a host of legal issues for coastal homeowners, the public, and the government because these groups have competing legal interests in beach areas. As a preliminary matter, it is traditionally understood that homeowners have the right to *natural* accretions to their land, whereas the State has the right to *artificial* accretions.²⁸

Defining the nature and extent of coastal homeowners’ legal rights is challenging. First, it is unclear if homeowners have a right to protect their property from erosion.²⁹ In *Shell Island Homeowners Ass’n, Inc. v. Tomlinson*,³⁰ the NC Court of Appeals found no basis for the proposition that, “a littoral or riparian landowner has a right to erect hardened structures in

²⁵ See Kalo, *supra* note 11, at 1497 (“[O]nce one littoral owner constructs a seawall or other erosion control structure it becomes necessary for neighboring littoral owners to do the same to protect their shoreline.”).

²⁶ *Program for the Study of Developed Shorelines*, WESTERN CAROLINA UNIVERSITY, http://www.wcu.edu/WebFiles/PDFs/Coastal_Scientist_Groin_Statement.pdf.

²⁷ Rachel Hilburn, *Figure Eight Island Awaits State Decision on Terminal Groin Requirements*, WHQR (July 19, 2013), available at <http://whqr.org/post/figure-eight-island-awaits-state-decision-terminal-groin-requirements>.

²⁸ See N.C. GEN. STAT. § 146-6 (a)-(b); see also Kalo, *supra* note 11, at 1486–1505.

²⁹ See Kalo, *supra* note 11, at 1434–35.

³⁰ 134 N.C. App. 217, 517 S.E.2d 406 (1999).

statutorily designated areas of environmental concern to protect their property from erosion and migration.”³¹ The court added that, “the courts of this State have considered natural occurrences such as erosion and migration of waters to be, in fact, natural occurrences, a consequence of being a riparian or littoral landowner, which consequence at times operates to divest landowners of their property.”³²

Second, nuisance law and the public trust doctrine creates a complex web of legal issues. In North Carolina, the public trust area extends seaward from the mean high tide line.³³ If the beach is left to erode away, then the public can effectively lose access to portions of the beach.³⁴ Similarly, homeowners may lose rights if their threatened homes are condemned.³⁵ However, as previously discussed, hardening the beach to protect certain threatened homes can increase erosion rates in other areas, thereby threatening nearby homeowners’ rights and public access.³⁶ Such collateral damage to the rights of other property owners and the public can be a basis for arguing that hard structures “along ocean and inlet shorelines are per se unreasonable and can be banned as nuisances.”³⁷

³¹ *Id.* at 414.

³² *Id.*

³³ N.C. GEN. STAT. § 77-20.

³⁴ *See infra* note 58.

³⁵ *See, e.g.,* Catherine Kozak, *Battered Beach Homes Stand in Way of N.C. Project*, PILOT ONLINE (April 18, 2010), <http://hamptonroads.com/2010/04/battered-beach-homes-stand-way-nc-project>.

³⁶ “[S]tructures also have a documented, serious, adverse impact upon public trust lands and rights. Erosion control structures may lead to the destruction of the dry sand beach, adversely affecting the public's right to use the shoreline and public trust waters. Erosion control structures may lead to the destruction of the dry sand beach, adversely affecting the public's right to use the shoreline and public trust waters.” *See Kalo, supra* note 11, at 1497.

³⁷ *See Kalo, supra* note 11, at 1497.

Finally, regulatory takings complicates coastal erosion issues. In the coastal context, takings issues are especially challenging because it is often unclear the extent to which a regulation could impair the value or utility of already threatened property.³⁸

The History of Terminal Groins in North Carolina

North Carolina is home to some of the most beautiful beaches in the world. Thousands of visitors frequent the barrier islands along our coast each year, generating billions of dollars in revenue for North Carolina.³⁹ The coast is such a valued asset that North Carolina's Constitution established that it is State policy to "conserve and protect its lands and waters for the benefit of all its citizenry, and to preserve as a part of the common heritage of this State its forests, wetlands, estuaries, *beaches*, historical sites, openlands, and places of beauty."⁴⁰

North Carolina had no regulation of coastal erosion structures until the 1970s.⁴¹ In 1985, the North Carolina Coastal Resources Commission ("CRC") imposed a statewide ban on the construction of hard structures on North Carolina's beaches.⁴² In 2003, this policy was formally adopted by statute.⁴³

In 2009, amidst growing pressure to lift the ban,⁴⁴ the legislature mandated that the CRC conduct a feasibility study of terminal groins as erosion control devices.⁴⁵ In conducting the

³⁸ *See id.*

³⁹ *NC BEACH AND INLET MANAGEMENT PLAN*, N.C. DEPT. OF ENV'T. & NAT. RESOURCES XII-3 (2011), available at <http://dcm2.enr.state.nc.us/BIMP/BIMP%20Section%20XII%20-%20Funding%20Prioritization%20Formatted.pdf> ("Coastal tourism, and specifically beach-oriented tourism, is quite possibly the single greatest contributor to the state's tourism economy, accounting for more than \$2.6 billion in economic activity in 2009.").

⁴⁰ N.C. CONST. art. XIV, § 5 (emphasis added).

⁴¹ *See Kalo, supra* note 11, at 1488.

⁴² *Id.*

⁴³ *Id.*; see 2003 N.C. Sess. Law 427.

⁴⁴ *See, e.g.*, S. 832, 2009 Gen. Assem., 148th Sess. (N.C. 2009).

⁴⁵ Address Erosion Control Issues, 2009 N.C. Sess. Law 479.

study, researchers faced budget restraints⁴⁶ and practical obstacles.⁴⁷ However, the CRC's recommendations included that "the use of a terminal groin, should be allowed only after all other non-structural erosion control responses, including relocation of threatened structures, are found to be impracticable," and that, "[a]ny use of such a structure should include siting and construction that avoid interruption of the natural sand movement to downdrift beaches."⁴⁸

Despite the CRC's study, the North Carolina legislature eventually lifted a twenty-six year ban on the construction of hardened structures along the coast in 2011.⁴⁹ In addition to lifting the ban on hardened structures, the legislature instituted a four terminal groin pilot program.⁵⁰

Coastal Policy Reform Act of 2013

Since the lifting of the ban in 2011, four beach communities—Figure Eight Island, Holden Beach, Ocean Isle Beach, and Bald Head Island—have sought permits to build terminal groins under the terminal groin pilot program.⁵¹ None of these projects have been approved.⁵² In

⁴⁶ *Terminal Groin Study Recommendations*, N.C. COASTAL RES.COMM'N. 3 (2010), available at <http://dcm2.enr.state.nc.us/CRC/tgs/finalrecs.pdf> ("No new data collection efforts were undertaken for this study. Rather, available data (shoreline changes, nourishment and dredging activities, natural resources, etc.) were collected from as many sources as possible. Additionally, most of the data originally were collected for purposes other than determining the potential impact of a terminal groin.").

⁴⁷ *Id.* ("The most substantial (longer, higher, and/or less permeable) terminal groins were typically found in areas where the greatest amount of dredging activity occurs. It was found that the more significant the dredging activities, the potentially greater the impacts on adjacent shorelines. The impacts from these dredging activities may greatly overshadow any potential long-term shoreline changes resulting from the construction of a terminal groin.")

⁴⁸ *Id.* at 8. Following the CRC study, the Associate Director of the Program for the Study of Developed Shorelines at Western Carolina University conducted a study focusing on the economic impact of terminal groins and found that "[t]he use of terminal groins would provide limited fiscal and economic benefits to state taxpayers and local communities" and that "long-term costs of a terminal groin exceed potential long-term benefits at every developed NC inlet." Andrew Coburn, *A Fiscal Analysis of Shifting Inlets and Terminal Groins in North Carolina*, PROGRAM FOR THE STUDY OF DEVELOPED SHORELINES 2, available at http://www.wcu.edu/WebFiles/PDFs/TG_White_paper.pdf.

⁴⁹ See Terminal Groin Act, *supra* note 7.

⁵⁰ *Id.*

⁵¹ Trista Talton, *Terminal Groin Changes Merit New Study*, N.C. COASTAL FED'N, (Oct. 7, 2013), available at <http://www.nccoast.org/Article.aspx?k=ffdfef678-5f6a-4b20-bf80-ba0c9c6e6a66>.

⁵² *Id.*

response, S.B. 151 was intended to push existing terminal groin projects forward and to allow other beach communities to pursue new projects.⁵³

The Act makes it easier for terminal groin projects to be approved. The Act adds statutory language that focuses permitting decisions on the benefits of proposed projects.⁵⁴ The Act also reduces the proof of financial assurance required for those seeking to construct a terminal groin—an applicant is no longer required to show the ability to cover the costs of restoring damage to “public, private, or public trust property.”⁵⁵ Despite controversy, the Act also eliminates language that required permit applicants to demonstrate that “non-structural approaches to erosion control, including relocation of threatened structures are *impractical*.”⁵⁶

The Act retains language limiting the construction of terminal groins to the “terminus of an island or on the side of an inlet”—hence, the term “*terminal groin*.” However, the Act provides a more specific definition of “terminal groin”⁵⁷ and expressly distinguishes “terminal groins” from “jetties.”⁵⁸ This distinction relates to the controversy over the length and permeability of the erosion control device since, the more effective the jetty is in capturing sand and achieving its purpose, the greater the potential for adverse environmental impacts.⁵⁹

⁵³ Kirk Ross, *Bill Guts Safeguards for Terminal Groins*, N.C. COASTAL FED’N (May 15, 2013), available at <http://www.nccoast.org/Article.aspx?k=feb7fe93-e597-4e69-9ef0-8140afbe780a>; see also Terminal Groin Act *supra* note 7.

⁵⁴ Coastal Policy Reform Act, 2013 N.C. Sess. Law 384, §113A-115.1 (e)(5) and (f)(4).

⁵⁵ *Id.* at §113A-115.1 (e)(6).

⁵⁶ See *stricken language* Coastal Policy Reform Act, 2013 N.C. Sess. Law 384, §113A-115.1 (e)(1).

⁵⁷ Coastal Policy Reform Act, 2013 N.C. Sess. Law 384, §113A-115.1 (a)(3) (“‘Terminal groin’ means one or more structures constructed at the terminus of an island or on the side of an inlet, with a main stem generally perpendicular to the beach shoreline, that is primarily intended to protect the terminus of the island from shoreline erosion and inlet migration. A ‘terminal groin’ shall be pre-filled with beach quality sand and allow sand moving in the littoral zone to flow past the structure. A ‘terminal groin’ may include other design features, such as a number of smaller supporting structures, that are consistent with sound engineering practices and as recommended by a professional engineer....”).

⁵⁸ *Id.*

⁵⁹ Kirk Ross, *Bill Guts Safeguards for Terminal Groins*, N.C. COASTAL FED’N (May 15, 2013), available at <http://www.nccoast.org/Article.aspx?k=feb7fe93-e597-4e69-9ef0-8140afbe780a> (“[T]erminal groins, unlike jetties,

Interestingly, the Act also expressly states that applicants' "Inlet Management Plans" need not address sea level rise.⁶⁰

Conclusion

As long as development continues on our coasts, there will be pressure on legislators to protect coastal property from erosion. The Coastal Policy Reform Act indicates a continued shift in State policy towards artificially stabilizing beaches by making it easier for terminal groin projects to move forward in North Carolina. The current position of the legislature appears to protect investments in inherently threatened property and prevents important factors, such as sea level rise and financial accountability for damage to public and private interest, from being considered in the permitting process. While North Carolina's legislators move towards hardening the coastline, New Jersey and New York legislators have adopted a policy of retreat.⁶¹ Ironically, those states, especially New Jersey, have a long and extensive history of using hard structures to combat coastal erosion.⁶²

are too short to stabilize channels and keep them from shoaling. A groin was built on Pea Island on the Outer Banks in the early 1990s to protect N.C. 12 on the south side of the Herbert C. Bonner Bridge. Shoaling of adjacent Oregon Inlet has worsened dramatically since then, and dredging has not been able to keep a reliable navigation channel through the inlet open. The Army Corps of Engineers has to dredge Beaufort Inlet in Carteret County every few years despite a terminal groin at Fort Macon State Park on the west side of the inlet.").

⁶⁰ Coastal Policy Reform Act, 2013 N.C. Sess. Law 384, §113A-115.1 (e)(5). North Carolina House Bill 819 received national criticism when it attempted to prohibit scientific sea level rise predictions from being considered when making state coastal policies. See Mark Binker, *Colbert Pokes fun at NC Sea Level Bill*, WRAL (June 05, 2013), <http://www.wral.com/news/state/nccapitol/blogpost/11171656/>. Eventually, the bill was passed without that provision. N.C. GEN. STAT. § 113A-107.1 (2013).

⁶¹ Meghan Barr, *Sandy Buyouts in New York Only Affect Few Lucky Homeowners in Staten Island*, HUFFINGTON POST, (Oct. 28, 2013), available at http://www.huffingtonpost.com/2013/10/28/sandy-buyouts_n_4169483.html. New Jersey and New York have recently set aside funds to buy out homes in certain coastal erosion areas and to commit those areas to "green space." *Id.*

⁶² "The consequence of the construction of seawalls and groins [in New Jersey] was the destruction of the beaches. New Jersey turned into a model on how not to develop a beach, leading to the formation of the term 'New Jerseyization' of coastlines. Concerns stemming from the 'New Jerseyization' of the shore paired with the exponential growth of communities all along the beach caused the U.S. Army Corps of Engineers to classify 81 percent of New Jersey's coastline as being in 'critical' condition from beach erosion." Matthew S. Oorbeek, Paper 280, *The Perfect Storm: Sandy, New Jersey Land Use, and the National Flood Insurance Program*, SETON HALL

