

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

TANCRED MILLER

Director



NORTH CAROLINA  
Environmental Quality

CRC-24-10

August 12, 2024

**MEMORANDUM**

**TO:** Coastal Resources Commission

**FROM:** Heather Coats

**SUBJECT:** Establishment of a measurement line rule for dune building

Session Law 2024-45, ratified on June 28, 2024, authorizes the establishment of a measurement line for dune building projects conducted pursuant to permitted terminal groin construction and directs the Coastal Resources Commission (CRC) to create rule to allow local governments that have received a permit to construct a terminal groin pursuant to G.S. 113A-115.1 to establish a measurement line defined under 15A NCAC 07H .0305(9). The measurement line would represent the existing location of the first line of stable and natural vegetation that is covered by a dune building and beach planting project. SL 2024-45 also requires that the measurement line be established in coordination with the DCM through on-ground observation and survey or aerial imagery for all areas of oceanfront that undergo the dune building and beach planting project. The measurement line would be applicable for a period of no less than two years from the completion of the dune building and beach planting project.

Your current rule, 15A NCAC 7H .0305(9) allows for the establishment of a line from which the ocean hazard setback is measured for a stretch of unvegetated beach in accordance with 15A NCAC 7H .0304(3). This rule applies in areas where a storm has caused significant beach erosion and overwash. Using an established protocol based on post-storm beach recession, DCM delineates, and the CRC approves a line used for establishing oceanfront development setbacks. The measurement line typically remains in place until the stable and natural vegetation returns and Staff is able to use it to establish oceanfront setbacks. Once a measurement line is established for an Unvegetated Beach AEC, it's location and length is listed in 7H .0304(3).

Ocean Isle Beach is pursuing a dune building and vegetation project this winter. The proposed dune building and vegetation project, if approved by DCM, will be part of the Town's 30-year plan to manage their oceanfront which includes other erosion response measures such as beach nourishment and truck haul. The proposed dune building project will cover the existing vegetation which may be used to measure oceanfront setbacks. This may result in a measurement line landward of the existing vegetation line therefore resulting in more stringent setbacks for property owners in the ocean hazard Area of Environmental Concern. Adoption of this rule in accordance with SL 2024-45 will allow the town to proceed with this project and



utilize the measurement line as defined prior to project implementation. This process is similar to a provision added to the rule for the Town of Oak Island which was to undertake a beach fill project after experiencing a hurricane in 2002 that buried the vegetation line. In that case, the Division utilized specifically noted NCDOT photos for the establishment of a measurement line.

To satisfy the requirements of SL 2024-45, DCM Staff propose to amend 15A NCAC 07H .0304(3) (Unvegetated Beach Area) and 15A NCAC 07H .0305(9) (Measurement Line). In order to have the rule amendments in place in time for the Ocean Isle Beach project, Staff is recommending adopting temporary as well as permanent rulemaking. A proposed timeline will be presented at your upcoming meeting in Beaufort.



## 15A NCAC 07H .0304 AECS WITHIN OCEAN HAZARD AREAS

The ocean hazard AECs contain all of the following areas:

- (1) Ocean Erodible Area. This is the area where there exists a substantial possibility of excessive erosion and significant shoreline fluctuation. The oceanward boundary of this area is the mean low water line. The landward extent of this area is the distance landward from the vegetation line as defined in 15A NCAC 07H .0305(a)(5) to the recession line established by multiplying the long-term annual erosion rate times 90; provided that, where there has been no long-term erosion or the rate is less than two feet per year, this distance shall be set at 180 feet landward from the vegetation line. For the purposes of this Rule, the erosion rates are the long-term average based on available historical data. The current long-term average erosion rate data for each segment of the North Carolina coast is depicted on maps entitled "North Carolina 2019 Oceanfront Setback Factors & Long-Term Average Annual Erosion Rate Update Study" and approved by the Coastal Resources Commission on February 28, 2019 (except as such rates may be varied in individual contested cases or in declaratory or interpretive rulings). In all cases, the rate of shoreline change shall be no less than two feet of erosion per year. The maps are available without cost from any Local Permit Officer or the Division of Coastal Management on the internet at <http://www.nccoastalmanagement.net>.
- (2) Inlet Hazard Area. The inlet hazard areas are natural-hazard areas that are especially vulnerable to erosion, flooding, and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets. This area extends landward from the mean low water line a distance encompassing that area within which the inlet migrates, based on statistical analysis, and shall consider such factors as previous inlet territory, structurally weak areas near the inlet, and external influences such as jetties, terminal groins, and channelization. The areas on the maps identified as Inlet Hazard Areas included in the report entitled INLET HAZARD AREAS, The Final Report and Recommendations to the Coastal Resources Commission, 1978, as amended in 1981, by Loie J. Priddy and Rick Carraway are incorporated by reference and are hereby designated as Inlet Hazard Areas, except for:
  - (a) the location of a former inlet which has been closed for at least 15 years;
  - (b) inlets that due to shoreline migration, no longer include the current location of the inlet; and
  - (c) inlets providing access to a State Port via a channel maintained by the United States Army Corps of Engineers.

In all cases, the Inlet Hazard Area shall be an extension of the adjacent ocean erodible areas and in no case shall the width of the inlet hazard area be less than the width of the adjacent ocean erodible area. This report is available for inspection at the Department of Environmental Quality, Division of Coastal Management, 400 Commerce Avenue, Morehead City, North Carolina or at the website referenced in Item (1) of this Rule.

- (3) Unvegetated Beach Area. Beach areas within the Ocean Hazard Area where no stable and natural vegetation is present may be designated as Unvegetated Beach Areas on either a permanent or temporary basis as follows:
  - (a) An area appropriate for permanent designation as an Unvegetated Beach Area is a dynamic area that is subject to rapid unpredictable landform change due to wind and wave action. The areas in this category shall be designated following studies by the Division of Coastal Management. These areas shall be designated on maps approved by the Coastal Resources Commission and available without cost from any Local Permit Officer or the Division of Coastal Management on the internet at the website referenced in Item (1) of this Rule.
  - (b) An area that is unvegetated as a result of a hurricane or other major storm event may be designated by the Coastal Resources Commission as an Unvegetated Beach Area for a specific period of time, or until the vegetation has re-established in accordance with 15A NCAC 07H .0305(a)(5). At the expiration of the time specified or the re-establishment of the vegetation, the area shall return to its pre-storm designation.
  - (c) An area that has become unvegetated as a result of a dune building project in a community where the local government has received a permit to construct a terminal groin pursuant to G.S. 113A-115.1 may be designated by the Coastal Resources Commission as an Unvegetated Beach Area for a specific period of time, or until the vegetation has re-established in accordance with 15A NCAC 07H .0305(a)(5).
  - (d)(e) The Commission designates as temporary unvegetated beach areas those oceanfront areas of:
    - (i) Surf City and North Topsail Beach in which the vegetation line as shown on the United States National Oceanic and Atmospheric Administration imagery dated



September 17, 2018 was destroyed as a result of Hurricane Florence in September 2018; and

- (ii) Oak Island in which the vegetation line as shown on the United States National Oceanic and Atmospheric Administration and Geological Survey imagery dated August 4, 2020 was destroyed as a result of Hurricane Isaias in August 2020.

The designation AEC boundaries can be found on the Division's website at [https://files.nc.gov/ncdeq/Coastal%20Management/GIS/unvegetated\\_beach\\_aec.pdf](https://files.nc.gov/ncdeq/Coastal%20Management/GIS/unvegetated_beach_aec.pdf) and [https://files.nc.gov/ncdeq/Coastal%20Management/GIS/unveg\\_beachAEC\\_Oak\\_Island.zip](https://files.nc.gov/ncdeq/Coastal%20Management/GIS/unveg_beachAEC_Oak_Island.zip). This designation shall continue until such time as the stable and natural vegetation has reestablished, or until the area is permanently designated as an unvegetated beach area pursuant to Sub-Item (3)(a) of this Rule.

- (4) State Ports Inlet Management Area. These are areas adjacent to and within Beaufort Inlet and the mouth of the Cape Fear River, providing access to a State Port via a channel maintained by the United States Army Corps of Engineers. These areas are unique due to the influence of federally-maintained channels, and the critical nature of maintaining shipping access to North Carolina's State Ports. These areas may require specific management strategies not warranted at other inlets to address erosion and shoreline stabilization. State Ports Inlet Management Areas shall extend from the mean low water line landward as designated on maps approved by the Coastal Resources Commission and available without cost from the Division of Coastal Management, and on the internet at the website at [https://files.nc.gov/ncdeq/Coastal%20Management/GIS/state\\_port\\_aec.pdf](https://files.nc.gov/ncdeq/Coastal%20Management/GIS/state_port_aec.pdf).

*History Note: Authority G.S. 113A-107; 113A-107.1; 113A-113; 113A-124; Eff. September 9, 1977; Amended Eff. December 1, 1993; November 1, 1988; September 1, 1986; December 1, 1985; Temporary Amendment Eff. October 10, 1996; Amended Eff. April 1, 1997; Temporary Amendment Eff. October 10, 1996 Expired on July 29, 1997; Temporary Amendment Eff. October 22, 1997; Amended Eff. April 1, 2020; July 1, 2016; September 1, 2015; May 1, 2014; February 1, 2013; January 1, 2010; February 1, 2006; October 1, 2004; April 1, 2004; August 1, 1998; Readopted Eff. December 1, 2020; Amended Eff. August 1, 2022; September 1, 2021.*



## 15A NCAC 07H .0305 DEFINITION AND DESCRIPTION OF LANDFORMS

This Rule describes natural and man-made features that are found within the ocean hazard area of environmental concern.

- (1) Ocean Beaches. Ocean beaches are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either:
  - (a) the growth of vegetation occurs; or
  - (b) a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- (2) Nearshore. The nearshore is the portion of the beach seaward of mean low water that is characterized by dynamic changes both in space and time as a result of storms.
- (3) Primary Dunes. Primary dunes are the first mounds of sand located landward of the ocean beaches having an elevation equal to the mean flood level (in a storm having a one percent chance of being equaled or exceeded in any given year) for the area plus six feet. Primary dunes extend landward to the lowest elevation in the depression behind that same mound of sand commonly referred to as the "dune trough".
- (4) Frontal Dunes. The frontal dune is the first mound of sand located landward of ocean beaches that has stable and natural vegetation present.
- (5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. Planted vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable and natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on-ground observations or by aerial photographic interpretation.
- (6) Pre-project Vegetation Line. In areas within the boundaries of a large-scale beach fill project, the vegetation line that existed within one year prior to the onset of project construction shall be defined as the "pre-project vegetation line". The "onset of project construction" shall be defined as the date sediment placement begins, with the exception of projects completed prior to the original effective date of this Rule, in which case the award of the contract date will be considered the onset of construction. A pre-project vegetation line shall be established in coordination with the Division of Coastal Management using on-ground observation and survey or aerial imagery for all areas of oceanfront that undergo a large-scale beach fill project. Once a pre-project vegetation line is established, and after the onset of project construction, this line shall be used as the reference point for measuring oceanfront setbacks in all locations where it is landward of the vegetation line. In all locations where the vegetation line as defined in this Rule is landward of the pre-project vegetation line, the vegetation line shall be used as the reference point for measuring oceanfront setbacks. A pre-project vegetation line shall not be established where a pre-project vegetation line is already in place, including those established by the Division of Coastal Management prior to the effective date of this Rule. A record of all pre-project vegetation lines, including those established by the Division of Coastal Management prior to the effective date of this Rule, shall be maintained by the Division of Coastal Management for determining development standards as set forth in Rule .0306 of this Section. Because the impact of Hurricane Floyd in September 1999 caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the pre-project line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.
- (7) Beach Fill. Beach fill refers to the placement of sediment along the oceanfront shoreline. Sediment used solely to establish or strengthen dunes shall not be considered a beach fill project under this Rule. A "large-scale beach fill project" shall be defined as any volume of sediment greater than



- 300,000 cubic yards or any storm protection project constructed by the U.S. Army Corps of Engineers.
- (8) Erosion Escarpment. The normal vertical drop in the beach profile caused from high tide or storm tide erosion.
- (9) Measurement Line. The line from which the ocean hazard setback as described in Rule .0306(a) of this Section is measured in the unvegetated beach area of environmental concern as described in Rule .0304(3) of this Section. In areas designated pursuant to Rule .0304(3)(b) of this Section, the Division of Coastal Management shall establish a measurement line by:
- (a) determining the average distance the pre-storm vegetation line receded at the closest vegetated site adjacent to the area designated by the Commission as the unvegetated beach AEC; and
- (b) mapping a line equal to the average recession determination in Part ~~(A)~~(a) of this Subparagraph, measured in a landward direction from the first line of stable and natural vegetation line on the most recent pre-storm aerial photography in the area designated as an unvegetated beach AEC. In an area designated as an unvegetated beach area of environmental concern pursuant to 15A NCAC 07H .0304(3)(c) of this Section, a measurement line shall be established that represents the location of the of the first line of stable and natural vegetation that is covered by dune building and beach planting project. The measurement line shall be established in coordination with the Division of Coastal Management using on ground observation and survey or aerial imagery and is applicable for a period of no less than two years from completion of the dune building and beach planting project.

*History Note:* Authority G.S. 113A-107; 113A-113(b)(6); 113A-124;  
Eff. September 9, 1977;  
Amended Eff. December 1, 1992; September 1, 1986; December 1, 1985; February 2, 1981;  
Temporary Amendment Eff. October 10, 1996;  
Amended Eff. January 1, 1997;  
Temporary Amendment Eff. October 10, 1996 Expired on July 29, 1997;  
Temporary Amendment Eff. October 22, 1997;  
Amended Eff. April 1, 2020; April 1, 2016; April 1, 2008; August 1, 2002; August 1, 1998;  
Readopted Eff. December 1, 2020;  
Amended Eff. August 1, 2022.

