



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

MICHAEL S. REGAN  
Secretary

BRAXTON C. DAVIS  
Director

CRC-19-06

February 1, 2019

**MEMORANDUM**

**TO:** Coastal Resources Commission

**FROM:** Ken Richardson

**SUBJECT:** Fiscal Analysis and Amendments to 15A NCAC 07H .0304 and .0305 for the Designation of Unvegetated Beach Areas of Environmental Concern and Measurement Lines

Due to Hurricane Florence's impacts to the vegetation line on the beaches of the Towns of Surf City and North Topsail Beach, the Commission at the November 2018 meeting approved temporary Unvegetated Beach AEC designations in these locations. The proposed amendments to 7H .0304 and .0305 also remove unnecessary and redundant language and provide clarity to the intent of the rule.

The Unvegetated Beach Area of Environmental Concern (AEC) is defined in 15A NCAC 07H .0304(3), and is one of three AECs within the Ocean Hazard system. An Unvegetated Beach can be designated by the Commission in areas where no stable and natural vegetation is present, including areas that have suddenly become unvegetated due to a hurricane or other major storm event. Under 15A NCAC 07H .0304(3)(b), the Unvegetated Beach designation may be for a specific period of time, or until stable and natural vegetation has re-established. Once the CRC designates an Unvegetated Beach, Division of Coastal Management (DCM) staff can establish a Measurement Line (15A NCAC 07H .0305(a)(9)) to serve as the reference feature from which oceanfront construction setbacks are measured until vegetation has re-established.

Hurricane Florence (September 2018) severely impacted the oceanfront dune system along portions of Surf City and North Topsail Beach, completely washing away the primary frontal dune along with any established vegetation. The geographic extent of the affected areas makes it impossible to identify a vegetation line by using interpolation and adjacent vegetation; the proposed amendments are to designate the affected portions of Surf City and North Topsail Beach as Unvegetated Beach AECs. In conjunction with the designation, DCM staff establishes a measurement line that is to be used as a reference feature in the determination of oceanfront development setbacks. The Measurement Line is established by determining the degree to which the pre-storm vegetation line retreated in adjacent areas and applying that amount of recession to the designated area utilizing aerial imagery.



15A NCAC 07H .0305 defines the physical features of the ocean hazard areas while 15A NCAC 07H .0305(a)(9) describes the protocol for establishing a Measurement Line. Staff is also proposing amendments to 07H .0305(a)(9) to clarify how the Measurement Line is to be established in accordance with Commission and staff discussion at the November meeting.

The attached draft revisions to 15A NCAC 07H. .0304 and .0305 and fiscal analysis are provided below for consideration by the Commission. **Staff recommends that the Commission approve the fiscal analysis and the rule revisions for permanent rulemaking.** I look forward to discussing these amendments at our upcoming meeting.

**ATTACHMENT A:** Fiscal & Regulatory Impact Analysis

**ATTACHMENT B:** 15A NCAC 07H .0304 AECS Within Ocean Hazard Areas

**ATTACHMENT C:** 15A NCAC 07H .0305 General Identification and Description of Landforms



# **ATTACHMENT A: Fiscal & Regulatory Impact Analysis**

## **Areas of Environmental Concern**

15A NCAC 07H .0304 and .0305

Prepared by

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January 23, 2019



## Basic Information

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Agency	DEQ, Division of Coastal Management (DCM) Coastal Resources Commission (CRC).
Title	Designation of Unvegetated Beach Area of Environmental Concern (AEC) and Measurement Line Amendments
Citation	15A NCAC 07H .0304 and 15A NCAC 07H .0305
Description of the Proposed Rule	7H .0304 defines and establishes AECs that are within the Ocean Hazard Areas along the State's Atlantic Ocean shoreline. Ocean Hazard Area AECs include the Ocean Erodible Area, Inlet Hazard Area and the Unvegetated Beach Area. 7H .0305 defines physical features of Ocean Hazard Areas.
Agency Contact	Daniel Govoni Coastal Policy Analyst Daniel.Govoni@ncdenr.gov (252) 808-2808 ext. 233
Authority	113A-107(a) & (b); 113A-118.1
Necessity	Due to Hurricane Florence's impacts to the beaches of the Towns of Surf City and North Topsail Beach; the Coastal Resources Commission is proposing to amend its administrative rules in order to reflect physical changes in the ocean shoreline that influence the permitted citing of oceanfront development. These amendments also remove unnecessary and redundant conditions and provides clarity to the intent of the rule. These changes will serve the public interest by protecting life and property from destructive forces and by preventing confusion of the regulated community.
Impact Summary	State government: No Local government: No Federal government: No Private property owners: Yes Substantial impact: No



## Summary

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The Unvegetated Beach Area of Environmental Concern (AEC) is defined in 15A NCAC 07H .0304(3) and is one of three AECs within the Ocean Hazard system. An Unvegetated Beach can be designated by the CRC in areas where no stable and natural vegetation is present, including areas that have suddenly become unvegetated due to a hurricane or other major storm event. Under 15A NCAC 07H .0304(3)(b) the Unvegetated Beach designation may be for a specific period of time, or until stable and natural vegetation has re-established. Once the CRC designates an Unvegetated Beach, the Division of Coastal Management can establish a Measurement Line (15A NCAC 07H .0305(a)(9)) to serve as the reference feature from which oceanfront construction setbacks are measured until vegetation has re-established.

Hurricane Florence (September 2018) severely impacted the oceanfront dune system along portions of Surf City and North Topsail Beach, completely washing away the primary frontal dune along with any established vegetation. The geographic extent of the affected areas makes it impossible to identify a vegetation line by conventional means; and the CRC is proposing to designate the affected portions of Surf City and North Topsail Beach as an Unvegetated Beach AEC.

15A NCAC 07H .0305 defines the physical features of the ocean hazard areas while 15A NCAC 07H .0305(a)(9) describes the protocol for establishing a Measurement Line. Amendments are proposed for 15A NCAC 07H .0305(a)(9) to remove the unnecessary and redundant conditions and to also provide clarity to the implementation of the rule.

The Division of Coastal Management does not anticipate any increase in expenditures in the government or private sector as a result of this action. The proposed amendments to 15A NCAC 07H .0304 are necessary for the Division to implement the Coastal Resources Commission's administrative rules as they apply to any proposed oceanfront development in the proposed Unvegetated Beach AEC. The Division has determined that the nonconforming status of structures within the proposed Unvegetated Beach AEC will not be affected as they currently did not meet the minimum setback requirement measured from pre- Hurricane Florence First Line of Stable and Natural Vegetation or from the proposed Measurement Line. Pursuant to G.S. 150B-21.4, the agency declares that the proposed amendments to 15A NCAC 7H .0205 will not affect environmental permitting for the NC Department of Transportation and there will be no financial impacts to local government.

## Description of Rule Amendment

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The Division of Coastal Management utilizes the First Line of Stable and Natural Vegetation as a reference feature in the application of oceanfront setbacks used to site oceanfront development. The Unvegetated Beach Area of Environmental Concern (AEC) is defined in 15A NCAC 07H .0304(3) and is one of three AECs within the Ocean Hazard system. An Unvegetated Beach can be designated by the CRC in areas where no stable and natural vegetation is present, including areas that have suddenly become unvegetated due to a hurricane or other major storm event. In conjunction with the designation, the Division of Coastal Management establishes a measurement line that is to be used as a reference feature in the determination of oceanfront development setbacks. The Measurement Line is established by determining the degree to which



the pre-storm vegetation line retreated in adjacent areas and applying that amount of recession to the designated area utilizing aerial imagery.

15A NCAC 07H .0304 is being amended to temporarily designate the areas Surf City and North Topsail Beach as an Unvegetated Beach AEC. This proposed designation shall continue until such time as stable and natural vegetation has reestablished pursuant to Sub-Item 3(a) of this Rule. These areas were severely impacted by Hurricane Florence and the existing vegetation line was destroyed making it impractical to utilize it as reference feature in the application of oceanfront setbacks. Additional amendments to 15A NCAC 07H. .0304 include language consistent with the ocean hazard setback provisions of 15A NCAC 07H. .0306 and with amendments to the Coastal Area Management Act which allow the construction of terminal groins.

15A NCAC 07H .0305 is being amended to remove unnecessary and redundant conditions and provide clarity to the implementation of the rule.

#### Affected Parties

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##### Private Property Owners:

DCM does not anticipate any increased costs to private property owners as a result of the proposed rule amendments. There are 56 oceanfront structures within the proposed Unvegetated Beach Area of Environmental Concern. None of the 56 oceanfront structures met the minimum oceanfront setback measured from the pre-Hurricane Florence vegetation line, their non-conforming status will not change as a result of the establishment of a measurement. Establishment of the measurement is necessary as the reference feature used to determine the setback compliance status of oceanfront structures in this area until natural and stable vegetation reestablishes itself.

##### NC Department of Transportation (DOT):

Pursuant to G.S. 150B-21.4, the agency declares that the proposed amendments to 15A NCAC 7H .0205 will not affect environmental permitting for the NC Department of Transportation. While the DOT maintained road within the unvegetated beach area is within the oceanfront setback, DOT actions regarding the roadbed would likely be considered maintenance and repair and not affected by the establishment of a measurement line.

##### Local Government:

DCM does not anticipate any increased costs to Local Governments as a result of the proposed rule amendments as there are no local government facilities in the area.

##### Division of Coastal Management:

The designation of an Unvegetated Beach AEC and delineation of a measurement line are routine actions of the Division to establish permitting jurisdiction for regulatory purpose. The Division does not foresee any change in permit requests and does anticipate any change in permit receipts.

#### **Cost/Benefits Summary**



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The Division of Coastal Management does not anticipate any increase in expenditures in the government or private sector as a result of this action. The proposed amendments to 15A NCAC 07H .0304 are necessary for the Division to implement the Coastal Resources Commission's administrative rules as they apply to any proposed oceanfront development in the proposed Unvegetated Beach AEC. The Division has determined that the nonconforming status of structures within the proposed Unvegetated Beach AEC will not be affected as they currently did not meet the minimum setback requirement measured from pre-Hurricane Florence First Line of Stable and Natural Vegetation or from the proposed Measurement Line. The purpose of these amendments is to allow DCM staff or a Local Permitting officer the ability to answer any permitting questions or deny any permit applications regarding the expansion of an existing house or development of undeveloped lot located in the proposed Unvegetated Beach AEC. Without the proposed Unvegetated Beach AEC, DCM is unable to reference a feature in the determination of oceanfront development setbacks.



## ATTACHMENT B: 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 first line of stable and natural vegetation 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 ~~120~~ 180 feet landward from the first line of stable natural vegetation. 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 “2011 Long-Term Average Annual Shoreline Rate Update” and approved by the Coastal Resources Commission on May 5, 2011 (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 sufficient to encompass 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 ~~suggested~~ jetties, jetties, terminal groins and channelization. The areas on the maps identified as ~~suggested~~ 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 Cape Fear Inlet Hazard Area as shown on the map does not extend northeast of the Bald Head Island marina entrance channel; and
  - (b) the former location of Mad Inlet, which closed in 1997.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. Photocopies are available at no charge.
- (3) Unvegetated Beach Area. Beach areas within the Ocean Hazard Area where no stable natural vegetation is present may be designated as an Unvegetated Beach Area 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 suddenly 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.

The Commission designates as temporary unvegetated beach areas those oceanfront areas of 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. The designation AEC boundaries can be found on the Division’s website referenced in Item (1) of this rule. This designation shall continue until such



time as 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.



**ATTACHMENT C: 15A NCAC 07H .0305    GENERAL IDENTIFICATION AND  
DESCRIPTION OF LANDFORMS**

(a) This Paragraph 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 the ocean beach 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) Static 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 "static 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 effective date of this Rule, in which case the award of the contract date will be considered the onset of construction. A static 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 static 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 static vegetation line, the vegetation line shall be used as the reference point for measuring oceanfront setbacks. A static vegetation line shall not be established where a static 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 static 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 (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 static 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. ~~Procedures for determining the measurement line in areas designated pursuant to Rule .0304(3) of this Section shall be adopted by the Commission for each area where such a line is designated pursuant to the provisions of G.S. 150B. These procedures shall be available from any local permit officer or the Division of Coastal Management.~~ In areas designated pursuant to Rule .0304(3)(b) of this Section, the Division of Coastal Management shall establish a measurement line ~~that approximates the location at which the vegetation line is expected to reestablish~~ 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 to the proposed development site; and~~
- (B) ~~mapping a line equal to the average recession determination in (A), 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. locating the line of stable and natural vegetation on the most current pre-storm aerial photography of the proposed development site and moving this line landward the distance determined in Subparagraph (a)(1) of this Rule.~~
- ~~The measurement line established pursuant to this process shall in every case be located landward of the average width of the beach as determined from the most current pre-storm aerial photography.~~
- (10) Development Line. The line established in accordance with 15A NCAC 07J .1300 by local governments representing the seaward-most allowable location of oceanfront development. In areas that have development lines approved by the CRC, the vegetation line or measurement line shall be used as the reference point for measuring oceanfront setbacks instead of the static vegetation line, subject to the provisions of Rule .0306(a)(2) of this Section.
- (b) For the purpose of public and administrative notice and convenience, each designated minor development permit-letting agency with ocean hazard areas may designate, subject to CRC approval in accordance with the local implementation and enforcement plan as defined in 15A NCAC 07I .0500, an identifiable land area within which the ocean hazard areas occur. This designated notice area must include all of the land areas defined in Rule .0304 of this Section. Natural or man-made landmarks may be considered in delineating this area.

*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, 2016; April 1, 2008; August 1, 2002; August 1, 1998.

