THE CHANGING FACE OF THE SHORELINE: PUBLIC AND PRIVATE RIGHTS TO THE NATURAL AND NOURISHED DRY SAND BEACHES OF NORTH CAROLINA

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North Carolinians have long assumed that the dry sand beaches of North Carolina are public recreational areas on which beachgoers can sunbathe, play volleyball, and engage in other water-related activities. This assumption is being challenged in litigation instigated by some owners of oceanfront property located in the northern Outer Banks. In this Article, the author examines the issues of who owns the dry sand beaches of the state and whether the public may be excluded from these beaches. The author concludes that, unless the beach has been the subject of a publicly financed beach nourishment project, the oceanfront property owner's legal title extends to the mean high-tide line and would encompass the dry sand beach. The oceanfront property owner does not, however, have legal title to dry sand beaches that are the product of a publicly financed beach nourishment project; such beaches are publicly-owned and open to public use. Although other dry sand beaches are privately-owned, the author nonetheless asserts that the public may not be excluded from these dry sand beach areas. The author concludes that, under either the common law public trust doctrine or the common law doctrine of custom, the public is legally entitled to use privately-owned dry sand beaches for water-related recreational activities.

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INTRODUCTION

This Article examines the issue of the location of the seaward boundary of oceanfront property in North Carolina and the relationship between that boundary and the public's right to use the dry sand beaches of North Carolina for recreational purposes. Since the existence of this right is the subject of current litigation, Part I of this Article discusses that litigation and explains why the battle over the public's right to use the dry sand beaches of the state has recently arisen in North Carolina. The case, Giampa v. Currituck County, commonly referred to as the Whalehead litigation, is being litigated in the North Carolina Superior Court. A central issue in the Whalehead litigation is the location of the seaward boundary of privately-owned oceanfront property because all lands and waters lying seaward of the boundary line are public trust lands and waters, open to public trust uses, which include recreational activities. Thus,

1. See infra notes 9-41 and accompanying text.
3. The suit is commonly referred to as the Whalehead litigation because the plaintiffs' oceanfront land is situated in the 860 lot of the Whalehead Club Beach development located near Corolla, on the northern Outer Banks. See Martha Quillin, Public Beach or Private Land?, NEWS & OBSERVER (Raleigh, N.C.), Sept. 5, 1998, at 1A. The development is named after a very large nearby hunting lodge, built by Marie Louise Knight during the 1930s. Knight built the Whalehead Club for her own use when she was denied admittance to the all-male hunting clubs of the day. See Albemarle, THE VIRGINIAN-PILOT & THE LEDGER-STAR (Norfolk, Va.), Mar. 18, 1998, at B4.
4. Public trust lands are typically defined as lands lying under navigable waters which are held in a public trust by the state and are open to the public for public trust uses. Lands lying below the mean low-water mark are, by definition, lands lying under navigable waters. Lands under navigable waters also include those lands lying between the mean high-water mark (or mean high-tide line) and the mean low-water mark (or mean low-tide line) even though, at times, such lands will not be covered by ocean waters. See, e.g., DAVID C. SLADE ET AL., NATIONAL PUBLIC TRUST STUDY, PUTTING THE PUBLIC TRUST DOCTRINE TO WORK 26, 59 (1990). Public trust use rights are defined narrowly in some jurisdictions and more broadly in others. See, e.g., id. at 129-34. In their broader form the rights include commerce, navigation, fishing, bathing, and various forms of water-related recreation. See id. at 132-33. Although specifically addressing adverse possession claims to public trust lands, title 1, section 45.1 of the North Carolina General Statutes also provides a definition of "public trust rights," stating:

As used in this section, "public trust rights" means those rights held in trust by
on which side of the line the dry sand beach falls has an important bearing on the existence of the public's right to use the beach for recreational purposes.

Part II of this Article examines the definition of the term *mean high-water mark* because, under North Carolina law, the seaward boundary of oceanfront property ordinarily is the mean high-water mark. Then, because ocean shorelines are highly dynamic, unstable, shifting geologic features, changing under the pressure of winds, waves, and storms, Part III addresses the important question of what effect, if any, natural changes of the contours of the shoreline have on the location of the boundary. Since the contours of the shoreline may also be altered by publicly funded beach nourishment projects, Part IV of this article analyzes the effect of such projects on the location of the seaward boundary. Finally, although the location of the seaward boundary of oceanfront property will determine whether technical legal title to the dry sand beach is privately held or held as public trust lands, even if title to the dry sand beach is in fact privately held, private title does not necessarily preclude public use of the dry sand beach for recreational and other public trust uses. Whether any such private title is encumbered by public trust use rights is discussed in Part V.

I. WHY THE ISSUE OF PUBLIC ACCESS TO THE DRY SAND BEACH COMES LATE TO NORTH CAROLINA

The *Whalehead* litigation challenges the public's right to use the dry sand beaches of the state for recreational purposes. The plaintiffs, oceanfront property owners, contend that the seaward

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5. See infra notes 42-88 and accompanying text.
6. See infra notes 69-79 and accompanying text.
7. See infra notes 80-103 and accompanying text.
8. See infra notes 104-17 and accompanying text.
9. The traditional term for oceanfront property is "littoral," derived from the Latin word *litoris* for seashore. "Littoral rights" are those unique rights associated with oceanfront property. The term "riparian" historically referred to property along rivers and streams. Today, "riparian" is commonly used to refer to any land located adjacent to a waterbody, and "riparian rights" refer to the rights associated with the ownership of such property. See, e.g., 1 WATERS AND WATER RIGHTS § 6.01, at 87-89 (Robert E. Beck ed., 1991).
boundary of their property is the mean high-water mark and that therefore they hold legal title to the dry sand beach. As legal title holders, they assert that they have the right to exclude the public from their dry sand beaches. Under the plaintiffs' view, public use is limited to that portion of the beach lying below the mean high-water mark, an area commonly referred to as the "wet sand beach" or foreshore.

10. All claims of non-oceanfront property owners in the case were dismissed. See Giampa v. Currituck County, No. 98 Civ S 153 (N.C. Super. Ct. Apr. 26, 1999) (Order on Motion to Dismiss).


12. See id. at 44-47. In Cooper v. United States, 779 F. Supp. 833 (E.D.N.C. 1991), a federal tax case, the district court supported the contention of the plaintiffs that the dry sand beach is privately-owned, stating that:

In the absence of clear precedent from the North Carolina Supreme Court on the application of the public trust doctrine, the court concludes that the nature of plaintiffs' ownership is determined appropriately by statute. Private ownership in the dry sand is expressly established in N.C. Gen. Stat. § 77-20. See id. at 835.

To the extent that Cooper suggests that the public may not be excluded from the dry sand beach, the State has always contended that the district court's conclusion was erroneous. In its Memorandum in Support of Motion for Judgment on the Pleadings in the Whistlehead litigation, the State asserted that: "In Cooper, the federal court erroneously interpreted N.C.G.S. § 77-20 to establish the entire dry sand beach in private ownership to the exclusion of any public rights." Memorandum in Support of Motion for Judgment on the Pleadings at 24, Giampa v. Currituck County (N.C. Super. Ct. filed June 19, 1998) (No. 98 Civ S 153).

13. The area between the mean high and mean low-water mark is called the "wet sand beach." See, e.g., SLADE, supra note 4, at 25. The land above the mean high-water mark is the "dry sand beach." See, e.g., DAVID BROWER, ACCESS TO THE NATION'S BEACHES: LEGAL AND PLANNING PERSPECTIVES 19-20 (1978). It should be noted that, in section 1-45.1 of the North Carolina General Statutes, the General Assembly was vague as to the meaning of the word "beaches." See N.C. GEN. STAT. § 1-45.1 (1999). The legislation does not specifically define "beaches" as including both the wet sand beach and the dry sand beach. See id.; see also supra note 4 (reciting the text of the statute).

14. The term "foreshore" is generally understood to mean the area lying between the mean low-water mark and the mean high-water mark. This does not include the dry sand beach. In Wer v. Slick, 313 N.C. 33, 326 S.E.2d 601 (1985), the North Carolina Supreme Court observed:

The longstanding right of the public to pass over and along the strip of land lying between the high-water mark and the low-water mark... is well established beyond need of citation. In North Carolina private property fronting coastal water ends at the high-water mark and the property lying between the high-water mark and the low-water mark known as the "foreshore" is the property of the State.

Id. at 60, 326 S.E.2d at 608 (emphasis added); see also Carolina Beach Fishing Pier, Inc. v. Town of Carolina Beach, 277 N.C. 297, 301-02, 177 S.E.2d 513, 516 (1970) (discussing foreshore land).


16. See Lebbo v. Lenox, 313 N.C. 33, 326 S.E.2d 601 (1985), coastal states ("high-tide states") maintain control over those areas lying beyond the mean high-tide line. By contrast, states and local municipalities ("low-tide states") maintain control only over those areas lying within the boundaries of the public use, but not over those areas lying beyond the low-tide line. See, e.g., Avon-by-the-Sea, 294 N.J. Super. 275, 682 A.2d 136, 143 (1996) (citations omitted). The state law authorizing the acquisition of privately-owned dry sand beaches, N.C. Gen. Stat. § 1-73.5 (1977), is a federal law designed to protect the "public's right to use private beaches." See id. at 143. The State Law of 1970, 313 N.C. 33, 326 S.E.2d 601 (1985), on the other hand, was designed to protect the "public's right to use public beaches." See id. at 36. To date, the high-tide line has been accepted as constitutional by the U.S. Supreme Court. See, e.g., Bell v. New Jersey, 824 F.2d 1121 (3d Cir. 1987).
In some coastal states this battle over the public’s right to use dry sand beaches was fought in the late 1960s, the 1970s, and the early 1980s. In some states, the public secured the right; in others it did not. At one extreme are states, such as Connecticut, where privately-owned dry sand beaches are not open to public use. At the other extreme are states, such as Oregon, where all oceanfront dry sand

15. Professor Marc R. Poirier states:
In the late 1960s and early 1970s, the public use of beaches became a highly contested issue. Ocean beaches were more and more congested, due to increased recreational use and enclosure of portions of beaches in connection with new housing developments, highways, and industrial development. In response, private owners often reasserted their ownership rights and excluded others from beaches that had in previous decades been used by fishermen and bathers without incident. . . . So beach access became a legal and political issue during the late 1960s and 1970s in most of the populous coastal states. In varying combinations, pressure to open or reopen the beaches was brought to bear through litigation or legislative action.

16. See Leabo v. Leninski, 438 A.2d 1153, 1156-57 (Conn. 1981). Historically, in most coastal states (“high-tide states”), public use of coastal lands and waters has been limited to those areas lying beneath navigable waters, which are those lands and waters seaward of the mean high-tide line. Title to the areas seaward of the mean high-tide line is in the state and held as public trust lands and available for public use. See, e.g., SLADE, supra, note 4, at 25–26, 59–60; A. DANIEL TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 3.09(3)[c], at 3-44 to 3-45 (1998). Public trust lands and, therefore, public trust use rights do not extend to areas above the mean high-tide line (the dry sand beach). In the late 1960s, 1970s, and early 1980s, efforts were made in some high-tide states to secure for the public the right to use privately-owned dry sand beaches. In some instances these efforts were successful. See, e.g., Matthews, 471 A.2d at 358 (applying the public trust doctrine to the dry sand beach owned by a quasi-public body); Borough of Neptune City v. Borough of Avon-by-the-Sea, 294 A.2d 47, 51–54 (N.J. 1972) (applying the public trust doctrine to a municipally-owned dry sand beach immediately landward of the mean high-water mark); State ex rel. Thornton v. Hay, 462 P.2d 671, 673 (Or. 1969) (recognizing a common law customary right of the public to use the dry sand beach). In five Atlantic coast states (“low-tide states”), the seaward boundary of privately-owned oceanfront property is the mean low-tide line. See, e.g., SLADE, supra note 4, at 59; TARLOCK, supra, at 3-45. However, the privately-owned area between mean high-tide line and mean low-tide line (wet sand beach) is subject to some public trust use rights. In those states, the litigation has centered on public use of this area and what activities are included in “public trust use rights.” See, e.g., Bell v. Town of Wells, 537 A.2d 168, 176 (Me. 1988) (holding that a statute defining public rights to include use of intertidal land for recreational purposes constituted an unconstitutional taking of private property); In re Opinion of the Justices, 313 N.E.2d 561, 569–70 (Mass. 1974) (holding that proposed legislation granting public the right to walk on that portion of the beach above the mean low-water mark would constitute an unconstitutional taking of private property rights).
beaches are open to the public.\textsuperscript{17} In between lie states, such as New Jersey, in which the public has the right to use some privately-owned dry sand beaches under some circumstances.\textsuperscript{18}

So, why is this battle over the beach coming so late to North Carolina? The answer to that question lies in the general development of the northern Outer Banks and, in particular, in the marketing of the Whalehead development. The legal and cultural views of the people who purchased oceanfront property in Whalehead also contributed to this timing of the battle.

Development came late to northern Currituck Banks,\textsuperscript{19} that portion of the Outer Banks in which the village of Corolla and the Whalehead Club subdivision are located. Twenty-five or thirty years ago, there were few permanent residents in the area. In 1978, the village of Corolla, with a permanent population of twenty-two, consisted of a church, post office, store, and several private homes.\textsuperscript{20} Only the locals, the few summer residents, surf fishermen, and the more adventurous vacationers used the neighboring beaches.\textsuperscript{21}

Because the area lacked convenient access, it remained unpopulated, undeveloped, and underutilized for a long period.\textsuperscript{22} To
the north, across the Virginia state line, is the Back Bay National Wildlife Refuge, and just north of that is Virginia Beach. To protect the refuge from what would have been a steady stream of traffic, the United States Fish and Wildlife Service required special permits to travel to Currituck Banks; permits were issued very sparingly, even to permanent residents and other property owners living south of the refuge in North Carolina. 23 Access to the northern part of Currituck Banks from the south was no easier. The state road ended just north of Duck, at the county line. The area to the north of Duck and just south of Corolla was owned by a private hunting club and a developer. 24 A large steel gate blocked the road, and a guard would tell the casual visitor that the road was private. 25 But even that private road ended a few miles south of Corolla.

Two unpaved “roads” or driving along the beach were the only means of public access to Corolla and the area north. One road was along the sound shoreline and the other passed through the dunes along the ocean side. 26 Neither was always passable. The third route, along the beach, required negotiating the wet and dry sand with careful attention to the tides. 27 One needed either a beach buggy or a four-wheel drive vehicle, or needed to be extraordinarily adept at driving on the sand to get from Duck to Corolla. 28 Until the early 1980s, when the state road was extended from the Currituck county

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23. See id. at 93.
24. See id.
25. See id.
26. In 1985, the North Carolina Supreme Court held in West v. Slick, 313 N.C. 33, 326 S.E. 2d 601 (1985), that there was sufficient evidence to find the existence of a public prescriptive easement over the two unimproved and unpaved roads. See id. at 50–51, 326 S.E.2d at 611. The conditions and difficulties encountered in using the two roads are described in detail in the court’s opinion. See id. at 41–45, 326 S.E.2d at 606–08.
27. In West v. Slick, the court stated that, “much of the testimony indicated that members of the public also regularly used the foreshore area to make their way to and from Corolla.” Id. at 60, 326 S.E.2d at 617. As to the right of the public to use the foreshore, the court emphatically stated: “We once again affirm the rule that passage by the public by foot, vehicle, and boat must be free and substantially unobstructed over the entire width of the foreshore.” Id. at 62, 326 S.E.2d at 618. The foreshore to which the court referred could mean the entire dry sand beach because four-wheel drive and other vehicles generally do not drive in the surf and may drive on either the wet sand or dry sand depending on whether the base is firm enough for adequate traction.
28. It was also possible to reach Corolla by boat, see, e.g., SCHORNBAUM, supra note 20, at 82, or, with special permission, by way of the gated private road that ended just south of Corolla, and then along the beach or sound shoreline. See id. at 93; see also Quillin, supra note 3, at 1A (noting that in the mid-1970s, the Whalehead development “was best accessed by a four-wheel drive along the beach”).
line to Corolla, the area north of Duck essentially was cut off from the rest of North Carolina and from Virginia. Despite the lack of convenient access during the 1970s and early 1980s, some limited development did occur in the Corolla area. It was during the mid-1970s that the Whalehead Club development began. The developers marketed the Whalehead Club in Virginia, New Jersey, New York, and other northern states as an exclusive, isolated area of the Outer Banks. Lots were sold, and very expensive summer residences were built in this remote corner of the North Carolina coast.

The out-of-state buyers came from areas with different customs and legal traditions. Many of these buyers came from states, like New Jersey, where dry sand beaches were regarded as private or largely private. Consequently, many of them brought their expectations of...
privacy with them to North Carolina. The customs and traditions of North Carolina, however, are not necessarily those of New Jersey, Virginia, or Massachusetts. Although public recreational use of the dry sand beaches came later in the history of North Carolina and was probably more prevalent on the southern barrier island beaches, which experienced earlier and more intense development, the custom of the dry sand beaches being open to public trust uses has a long history in North Carolina.

The conflict between the Whalehead oceanfront property owners and the public came to a head in the mid-1990s when large numbers of people discovered the northern Currituck Banks area and began

35. See Concerned Citizens v. Holden Beach Enter., 329 N.C. 37, 38-53, 404 S.E.2d 677, 679-87 (1991) (illustrating the general attitudes about the use of the dry sand beach). The issue in Concerned Citizens was whether a public prescriptive easement existed across the defendant's privately-owned uplands. The claimed easement provided access to the southern end of Holden Beach. According to the court, "[t]he area in question is privately-owned but over the years has been crossed by the public seeking access to the ocean strand and inlet for fishing and recreation." Id. at 39, 404 S.E.2d at 679 (emphasis added). Later in the case, the court stated that "[t]he 'purpose and nature' of the easement [claimed] here was to reach the inlet and seashore for fishing, bathing, and other recreational use." Id. at 53, 404 S.E.2d at 687. Neither the defendant nor the court questioned the right of the public to use the ocean strand or inlet area. At issue was only the crossing of the defendant's uplands to get to those areas. See id. at 38-40, 404 S.E.2d at 679; see also Wise v. Hollowell, 205 N.C. 286, 286-87, 171 S.E. 82, 82-83 (1933) (illustrating the use of the ocean beach for motor vehicle travel). For a photograph of a typical North Carolina beach scene, see Schoenbaum, supra note 20, at 239. As far as the camera can see, the dry sand beach is filled with people enjoying the seashore. See id.

Not all the southern barrier islands were easily accessible from the mainland and traversed by public roads. For example, Bogue Banks, the location of Atlantic Beach, was virtually undeveloped until the 1950s. At the eastern end is the site of the pre-Civil War fort, Fort Macon. A large portion of the remainder of Bogue Banks was owned by two individuals, with a number of bankers squatting in what is now Salter Path. Until the 1960s the only bridge to Bogue Banks was at the east end, crossing from Morehead City on the mainland to Atlantic Beach on the banks. See id. at 211-15.

This does not mean that the general public and the southern barrier island owners of coastal property lived in harmony. However, when efforts were made to exclude the public from the dry sand beaches, owners did not claim that the public lacked the right to use the beaches, but rather that they deprived the public of parking areas and access across the dunes to reach the beach. For example, in Emerald Isle, also on Bogue Banks:

The [Bogue] inlet area for years has been used by fishermen, shell collectors, and picnickers. In the 1970s the property along the road was posted and a barrier was placed at the end of the road, with a sign reading "Towing Laws Enforced." The town council voted three to two to restrict access to the inlet and turned down an offer by the state to fund a beach access plan for the area. (The owner of the house nearest the inlet is an influential member of the General Assembly.)

Id. at 214.

36. For example, a typical early public trust use of the dry sand was in connection with commercial beach-seine fishing, a practice in which nets are dragged from the ocean onto the dry sand beach. See Peele v. Morton, 396 F. Supp. 584, 585-86 (E.D.N.C. 1975).
visiting the vicinity of Whalehead. When these people arrived, they found beach access points, established pursuant to the North Carolina Coastal Management Act ("CAMAs"),37 every few blocks from the nearby ocean road to the dry sand beach38 and convenient public parking areas.39 The combination of a state road, new hotels and motels, public parking near the beach, and CAMA beach access points encouraged a massive influx of visitors parking in the parking lots, walking to the beach, spreading out their blankets and volleyball nets, and frolicking in the water.40

The Whalehead property owners neither liked nor intended to tolerate this sudden invasion of their previously secluded refuge. So, in June 1998, a group of oceanfront property owners41 filed the Whalehead lawsuit. This lawsuit represents more than a legal dispute; it is a culture clash, with elements of a class conflict. The core issues in the lawsuit are whether title to oceanfront property includes ownership of the dry sand beach and, if it does, whether the public may therefore be excluded from privately-owned dry sand beaches. These are issues that go beyond the Whalehead development and affect the use of all dry sand beaches in the state.

37. Under the North Carolina Coastal Area Management Act ("CAMAs"), N.C. GEN. STAT. §§ 113A-100 to 113A-134.4, the North Carolina Coastal Commission acquires, improves, and maintains a system of public access to coastal beaches and public trust waters. See id. § 113A-134.3. These public access locations are referred to as CAMA beach access locations or points and are usually designated by the placement of signs with the colorful CAMA logo.

38. See Complaint at 17, Giampa v. Currituck County (N.C. Super. Ct. filed June 19, 1998) (No. 98 Civ. 153). The CAMA beach access routes are located on narrow strips of land that extend from the nearest street running parallel to the beach to the beach itself. These rectangular strips are simply labeled as being ten feet in width on the original Whalehead plat. The easements appear at regular intervals and run from Lighthouse Drive to the oceanfront. Apparently, the plat makes no indication of the public or private nature of the rectangular areas. See id.

39. CAMA signs are at the entrance to each of these access points, and parking areas near the beach, created by the original developer and deeded to the county, are identified by signs as public parking lots. See id. at 16-17. Paragraph 79 of the Whalehead Complaint states that lots were first referred to as "public parking lots" in the summer of 1995. See id. Similarly, the plaintiffs alleged that it was not until 1995 that the county first claimed that beach access ramps and walkways, constructed by the county and state in the Whalehead development, were in fact public access ramps and walkways. See id. at 18.

40. According to a 1998 newspaper article, “[o]n any given summer Sunday, officials say, Currituck beaches are carpeted with the towels of 20,000 visitors, most of whom are renting houses or hotel rooms nearby. At Whalehead, five public parking lots are full and people spread all over the wide beach.” Quilllin, supra note 3, at 1A.

41. Some non-oceanfront property owners are also plaintiffs in the lawsuit. See Complaint at 10, Giampa v. Currituck County, (N.C. Super. Ct. filed June 19, 1998) (No. 98 Civ. 153). Their claims against the state, however, have been dismissed. See Giampa, No. 98 Civ. 153 (N.C. Super. Ct. Apr. 28, 1999) (Order on Motion to Dismiss).

II. THE LOCATION OF THE MEAN HIGH WATER LINE

The traditional rule that oceanfront property owners in the North Carolina lower sounds are entitled to use the mean high water line as an ordinary high water mark was codified in N.C. GEN. STAT. § 67-3 ("[w]here a grant abuts an ordinary high water mark, the grantor's interest in the land begins at the mean high water mark,"). In a few states, the mean high water line is an ordinary high water mark and is determined by "[w]here tidal water meets land." 43. See McKenzie v. State, 147 So. 2d 545, 548 (Miss. 1962). The "mean high water line" is the line of ordinary high water marks, belong to the State.

42. The mean high water line is the "[w]here a grant abuts an ordinary high water mark, the grantor's interest in the land begins at the mean high water mark." 43. See McKenzie v. State, 147 So. 2d 545, 548 (Miss. 1962). The "mean high water line" is the line of ordinary high water marks, belong to the State.

44. N.C. GEN. STAT. § 67-3. ("[w]here a grant abuts an ordinary high water mark, the grantor's interest in the land begins at the mean high water mark.").

45. According to the N.C. Court of Appeals, an ordinary high water mark is a mark that "[w]here a grant abuts an ordinary high water mark, the grantor's interest in the land begins at the mean high water mark."

46. In the Whalehead property owners' suit, the location of the mean high water line is an ordinary high water mark. See Quilllin, supra note 3, at 1A. In the Whalehead property owners' suit, the location of the mean high water line is an ordinary high water mark. See Quilllin, supra note 3, at 1A.
II. THE LOCATION OF THE SEAWARD BOUNDARY OF OCEANFRONT PROPERTY

The traditional common law rule is that the seaward boundary of oceanfront property is the mean high-water mark.42 As early as 1817, the North Carolina Supreme Court held that the common law rule was part of the property law of this state.43 In 1978, this common law rule was codified in section 77-20(a) of the North Carolina General Statutes, which provides that the "seaward boundary of all property within the State of North Carolina . . . which adjoins the ocean, is the mean high water mark."44 Therefore, there can be no legitimate question as to whether the mean high-water mark is the customary seaward boundary for titles to oceanfront property. The critical issue, then, is how to determine the mean high-water mark.

Neither statutes nor state court decisions articulate a precise method for determining the mean high-water mark.45 The location of the mean high-water mark could be viewed as coinciding with certain natural, visible indicators of the separation of the dry sand beach from the adjacent uplands.46 The vegetation line, usually found at the

42. The mean high-water mark is also frequently referred to as the "mean high-tide line." In fact, in a January 12, 2000 letter from Special Deputy Attorney General J. Allen Jernigan to the Coastal Resources Commission, "mean high tide line," "normal high water," and "mean high water" are all used synonymously. See Memorandum from J. Allen Jernigan, Special Deputy Attorney General, State of North Carolina, Department of Justice, to the Coastal Resources Commission 1-4 (Jan. 12, 2000) (on file with the North Carolina Law Review).

43. See McKenzie v. Hulet, 4 N.C. (Taylor) 613, 614 (1817). In Hulet, the court said: "[w]here a grant abuts upon the sea . . . it stops, according to the common law, at the ordinary high water mark; and the shore, that is, the ground between the high and low water marks, belong of common right to the king." Id.

44. N.C. GEN. STAT. § 77-20(a) (1999).

45. According to the trial judge, Superior Court Judge Jerry R. Tillett, Whalehead is a case of first impression: "The state's position is going to be that you locate the high-water mark by a number of indicia . . . . The plaintiff, on the other hand, will argue that you use different indicia." Hart Matthews, Ruling May Turn The Tide In Lawsuit: Judge To Decide Where Public Beach Ends And Private Property Begins, THE VIRGINIAN-PILOT & LEDGER-STAR (Norfolk, Va.), May 16, 1999, at Y1 (stating, as an example, that "[t]he state might say . . . that the mean high-water line should be measured by the line of erosion, which would push private property owners back to the base of the first dune").

46. In the Whalehead litigation, the state argued that "under North Carolina law, 'mean high water,' or 'mean high tide' on the ocean beach is determined by reference to the location of the vegetation or dune line." Memorandum in Support of Motion for Judgment on the Pleadings at 7, Giampa v. Currituck County, (N.C. Super. Ct. filed June 19, 1998) (No. 98 CV 153); see also id. at 9-13 (arguing that the Borax rule is not the law of North Carolina and that North Carolina courts have accepted the use of "physical
foot of the first stable dunes, or other natural indicators, such as the line of water debris, shows the maximum ordinary reach of tidal waters. Because the vegetation line and other natural indicators define the mean high-water mark for some regulatory purposes, they arguably could define it for title purposes as well.46

The problems with this methodology are twofold. First, in Carolina Beach Fishing Pier v. Town of Carolina Beach,47 the court said that the “high-water mark is generally computed as a mean or average high-tide, and not the extreme height of the water.”48 Because salt water generally kills shore vegetation, the vegetation or dune line lies above the reach of all but the highest tides in a tide cycle. Therefore, the vegetation line cannot represent a true mean high-water mark—an average of all daily tides. Similarly, the line of debris shows the maximum reach of wave-driven ocean waters.49 In references, such as vegetation, to locate the ‘mean high tide’”). This Memorandum suggests that the vegetation line may be the legal and functional equivalent of the mean high-water mark. A January 2000 letter to the Coastal Resources Commission from Special Deputy Attorney General J. Allen Jernigan makes the same suggestion:

Under North Carolina law, the State holds title to lands flowed by the waters of the Atlantic Ocean up to the mean high tide line . . . . The CRC [Coastal Resources Commission] has also codified the practice of establishing the location of the mean or average high tide line for permitting purposes by reference to the vegetation line and other indicators of high water. CAMA rules define “normal high water” to be “the ordinary extent of high tide based on site conditions such as presence or location of vegetation, which has its distribution influenced by tidal action, and the location of the apparent high tide line . . . . In North Carolina, public rights of use have traditionally been extended to the entire beach strand seaward of the dune or vegetation line.

Jernigan Memorandum, supra note 42, at 2-3 (bold in the original; italics added).

47. See N.C. ADMIN. CODE tit. 15A, r. 7H.305(e) (June 1999). In areas where there is no stable natural vegetation present, the line may nonetheless be determined by either extraplotation or extension of the line of the nearest adjacent vegetation. See id.

48. See Webb v. North Carolina Dep’t of Env’t, Health, and Natural Resources, 102 N.C. App. 767, 771-72, 404 S.E.2d 29, 32 (1991); see also supra note 46 (holding that for purposes of a CAMA permit, the line of vegetation may be used to determine the location of the normal high water.).


51. Id. at 303, 177 S.E.2d at 516.

52. See 1 WATERS AND WATER RIGHTS, supra note 9, § 6.03(a)(1), at 172.

53. In People v. William Kent Estate Company, 51 Cal. Rpt. 215 (1966), the California Supreme Court observed that “the terms ‘ordinary high tide’ and ‘mean high tide,’ as used in cases and statutes, refer to an average over a long period.” Id. at 218 (emphasis added). The presence or absence of vegetation would be relevant only if the boundary was the ordinary high-water mark. Scholars have noted the following:

The ordinary high-water mark is where the navigable watercourse of the ocean meets the land. Under authority, the ordinary high-water mark is the natural boundary of the land by covering it fully; when the property falls below the ordinary high-water mark does not apply to a particular piece of property; instead it is a line that marks the separation of land from water; and, differs from the high-water mark.

Frank E. Maloney & Robin L. Presley, High Water Line in Coastal Development (emphasis added).

54. See E-mail from North Carolina General Assembly, Government and Attorney General, November 19, 2004, 10-23, 10-25, 10-26.

55. See supra notes 42-48 and accompanying text.
short, this methodology provides not a mean high-water mark, but rather a maximum high-water mark.

Second, adopting the vegetation or dune line as the dividing line between privately-owned oceanfront property and state-owned public trust lands would contravene the original purpose of section 77-20(a). Section 77-20(a) appears to have been a response to the North Carolina General Assembly’s concern in 1978 that the North Carolina Coastal Commission might attempt to make the vegetation line the seaward boundary of privately-owned oceanfront property. In 1978, the issue before the Commission was the establishment of the oceanfront setback line for new construction. The Commission spent several months debating this question, and, after considering various alternatives, the Commission ultimately settled on a variable setback based on erosion rates measured from the vegetation line. Opponents of the original North Carolina Coastal Area Management Act of 1974 and of oceanfront setback lines in particular took the view that the Commission was trying to move the seaward boundary line for oceanfront property owners from the mean high-water mark to the vegetation line. Despite assurances that the Commission did not intend the reference point to affect title, but only to determine a seaward boundary line for new construction, the General Assembly passed section 77-20(a) to codify the existing and generally understood common law rule. In fact, neither the state nor the Commission opposed the legislation. Their position was that the dry sand beach was subject to public trust use rights and that the use of

The ordinary high water mark is the usual boundary between the bed of navigable watercourse and the adjacent upland. According to the weight of authority, the ordinary high water mark is the line that water impresses upon the soil by covering it for sufficient periods to deprive it of vegetation and to destroy its value for agriculture. Unlike the mean high water line . . . the ordinary high water mark does not represent the intersection of a particular vertical datum with the shore. Instead it is a physical mark caused by the action of the water on the land, and refers to a point at which the character of the soil and vegetation, if any, differs from that of the upland.


54. See E-mail from David W. Owens, Associate Professor of Public Law and Government and Assistant Director, Institute of Government, University of North Carolina at Chapel Hill, to Joseph J. Kalo 1 (Jan. 4, 2000) (on file with the North Carolina Law Review) (detailing the background of section 77-20(a) of the North Carolina General Statutes). Professor Owens was the Director of the Division of Coastal Management from 1984–89 and is recognized as an authority on the North Carolina Coastal Management Act. In 1978 Professor Owens was an attorney and staff member for the Coastal Resources Commission.

55. See id.
the mean high-water mark as the seaward boundary did not affect those pre-existing public trust rights. No one seriously contended that the vegetation line was the seaward boundary dividing privately-owned oceanfront property from state-owned public trust lands.

In 1991, in Webb v. North Carolina Department of Environment, Health, and Natural Resources, the North Carolina Court of Appeals sustained the Division of Coastal Management’s practice of determining “the approximate location of ... [the mean high-water mark] based on the presence of natural indicators of high water and observation of actual high tide rather than to rely on a survey of mean high water.” Webb, however, is not necessarily authoritative as to the issue of whether the vegetation line is coterminous with the mean high-water mark for the purpose of locating the seaward boundary of oceanfront property. The land involved in Webb was located on Banks Channel, not the Atlantic Ocean. The interpretation of section 77-20(a) was not before the court. The court held simply that it is acceptable for the Division of Coastal Management to use natural indicators of high-water for purposes of approximating the location of the mean high-water mark for establishing a CAMA authorized bulkhead line. Webb, then, does not support using the vegetation line to establish the section 77-20(a) mean high-water mark for purposes of determining the seaward boundary of oceanfront property.

Another methodology for locating the mean high-water mark was adopted by the United States Supreme Court in Borax Consolidated, Ltd. v. City of Los Angeles. In Borax, in which the seaward boundary of federal grants was at issue, the Court used the average of the height of all tides over an 18.6-year period to determine the location of the mean high-water mark. This period reflects the tidal cycle for which the earth and sun are in phase. The 18.6-year period is determined by the mean time the moon intersects the contour line of the mean high-water mark.

While the North Carolina Coastline adopted the Borax rule, it arguably has endorsed the wisdom of that “the high-water mark is that line which in turn affects the average high-tide, and its position is the result of addition to reference marks ...” noted in Webb v. William Kent Estate, 71 N.C. 201 (1865). The average of the highest tides, not the highest tides. The mean high-water mark is an average of the highest tides, not a line, such as the highest tide of any oceanfront property, such as a sand beach.

56. See id.
58. Id. at 771-72, 404 S.E.2d at 32.
59. Webb addressed a CAMA regulation requiring that a bulkhead alignment for purposes of shoreline stabilization “shall approximate mean high water or normal water level.” N.C. ADMIN. CODE TITLE 15A, r. 711-0208(b)(7)(A) (June 1990) (emphasis added).
60. See Webb at 772, 404 S.E.2d at 32. The actual mean high-water mark could be determined by a survey. See, e.g., Maloney & Austin’s rule note 53, at 245-61, but that is an expensive, time-consuming procedure not necessary under the CAMA regulation, which permits approximation. However:
61. Until recently ... determining the exact location of the mean high water line was not considered important by the public and was consequently neglected by the engineering and surveying professions ... Recent demands, however, for coastal property have accentuated the need for more precise demarcation of coastal boundaries.
62. See id. at 27.
63. See, e.g., George’s rule, supra note 53, at 246-61. Tide and the centrifugal force of the earth orbits the sun, the relationship of the moon, which in turn affects the highest tides (usually rounded off to the nearest high-tide epoch. See, e.g., id.
64. See Maloney & Austin supra note 52, at 244-46.
65. See Borax Consolidated at 771, 404 S.E.2d at 513, 516-17.
66. Id. at 303, 177 S.E.2d at 515.
67. 303, 177 S.E.2d at 515.
68. See id. at 218.
determine the location of the mean high-water mark.\textsuperscript{62} The 18.6-year period reflects the time it takes for the moon, the major tide-producing force, to complete a cycle during which its distance from the earth and sun varies.\textsuperscript{63} According to the \textit{Borax} rule, the mean high-water line along a beach is where a plane of a certain elevation, determined by the mean height of the tides over an 18.6 year cycle, intersects the contours of a particular beach.\textsuperscript{64}

While the North Carolina Supreme Court has never expressly adopted the \textit{Borax} 18.6-year rule as the law of North Carolina, it arguably has endorsed this rule.\textsuperscript{65} In \textit{Carolina Beach}, the court noted that "the high-water mark is generally computed as the mean or average high-tide, and not as the extreme height of the water."\textsuperscript{66} In addition to referencing \textit{Borax} itself, the court also referenced \textit{People v. William Kent Estate Co.},\textsuperscript{67} a California case applying the \textit{Borax} 18.6-year rule.\textsuperscript{68} The implication, then, is that the court approved of the \textit{Borax} rule. But, even assuming that the Court did not adopt the \textit{Borax} rule, \textit{Carolina Beach} makes clear that a mean high-water mark is an \textit{average} of the heights of tidal waters over some period of time—not a line, such as the vegetation line, determined by the height of the highest tides. Therefore, under normal circumstances, title to oceanfront property includes all or some portion of the adjacent dry sand beach.

\textsuperscript{62} See id. at 27.
\textsuperscript{63} See, e.g., \textsc{George M. Cole, Water Boundaries} 7-9 (1997). For the methods used to determine the mean high-tide line, see id. at 15-55; Maloney \& Ausness, supra note 53, at 246-61. Tides are the product of the gravitational forces of the moon and sun and the centrifugal force created by the earth's spin. As the moon orbits the earth and the earth orbits the sun, the distance of the earth from the moon and the sun will vary and the relationship of the moon to the sun will change. The variations in these distances and relationships affect the strength of the gravitational forces pulling on the fluid water, which in turn affects the height of the tides created. It takes approximately 18.6 years (usually rounded off to the whole year for purposes of calculation) to complete this cycle, or tidal epoch. See, e.g., \textsc{Cole, supra}, at 7-17.
\textsuperscript{64} See Maloney \& Ausness, supra note 53, at 245-52.
\textsuperscript{66} Id. at 303, 177 S.E.2d at 516 (citing Borax Consolidated, Ltd. v. City of Los Angeles, 296 U.S. 10 (1935); People v. William Kent Estate Co., 51 Cal. Rptr. 215 (Cal. App. 1966)).
\textsuperscript{67} 51 Cal. Rptr. 215 (1966).
\textsuperscript{68} See id. at 218.
III. ACCRETION, EROSION, AVULSION, AND SEAWARD BOUNDARIES

Because one of the most valuable and significant aspects of oceanfront property is its contact with, and access to, ocean waters, the right to maintain contact with the ocean has long been recognized as a significant legal right attendant to the ownership of oceanfront property.\(^\text{69}\) As a result, the common law rule is that if sand is gradually added to the beach by accretion, and the mean high-water mark moves seaward, the accretion belongs to the oceanfront property owner.\(^\text{70}\) On the other hand, if sand is slowly eroded away by natural forces, the oceanfront property owner loses land.\(^\text{71}\) The rules of accretion and erosion, then, simply reflect the larger right to maintain contact with ocean waters as the shoreline moves through natural cycles and processes. Thus, the mean high-water mark is not a fixed boundary line, but rather an ambulatory one, moving as forces of nature alter the contours of the beach. These common law rules have long been part of the law of North Carolina.\(^\text{72}\)

While the common law rules of erosion and accretion are part of an overall policy of protecting the oceanfront property owner's contact with and access to ocean waters, the same cannot be said for the common law rule of avulsion. Avulsive changes are those sudden, frequently dramatic, shoreline changes occasioned by the pounding of the shoreline by hurricane or northeaster winds and waves. Where such sudden, powerful, natural forces cause a sudden and perceptible change in the contours of the shoreline, the common law rule is that the seaward boundary of oceanfront property remains unaffected and therefore does not move.\(^\text{73}\) If, after the storm, fifty feet of dry sand beach disappears and the waves pound the dune line, the boundary line is the point where the mean high-water mark met the beach

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\(^{69}\) See, e.g., 1 WATERS AND WATER RIGHTS, supra note 9, § 6.01(a)(1), at 90.

\(^{70}\) See id. § 6.03(b)(2), at 187-95.

\(^{71}\) See id.

\(^{72}\) As early as 1820, the Supreme Court of North Carolina applied the traditional rule that an owner's property boundary line shifts with the gradual movement of the water boundary. See Murray v. Sermon, 8 N.C. (1 Hawks) 56, 56-57 (1820) (addressing whether the state or the private waterfront property owners had title to the increase of shoreline soil resulting from the gradual recession of the waters of Mattamuskeet Lake); see also State v. Johnson, 278 N.C. 126, 146, 179 S.E.2d 371, 384 (1971) (involving movement of an inlet); Carolina Beach Fishing Pier, Inc. v. Town of Carolina Beach, 277 N.C. 297, 304, 177 S.E.2d 513, 517 (1970) (involving beach erosion); Shell Island Homeowners Asso'n v. Toland, 134 N.C. App. 217, 228, 517 S.E.2d 406, 414-15 (1999) (involving beach erosion).

\(^{73}\) See 1 WATERS AND WATER RIGHTS, supra note 9, § 6.03(b)(2), at 191; Johnson, 278 N.C. at 146, 179 S.E.2d at 384.
before the avulsive event. The oceanfront property owner retains title to the newly submerged lands lying between the present and pre-
storm mean high-water marks. If, after the storm, fifty feet of dry
sand has been added to the beach, the oceanfront property owner’s
seaward boundary is calculated according to the mean high-water
mark before the storm.74

The common law rule governing the effect of avulsive events
makes little sense in the context of oceanfront property. This rule is
inconsistent with the general policy of protecting a littoral owner’s
right of access to the waterbody and creates unnecessary confusion
and uncertainty in the larger body of law governing public and private
rights in coastal lands and ocean waters. The consequences of
avulsive events for boundary lines should be no different than those
of the natural processes of erosion and accretion.

The common law rule of avulsion is part of the law of North
Carolina.75 With respect to oceanfront property, however, section 77-
20(a) of the North Carolina General Statutes can and should be read
as rejecting that rule as a matter of statutory language, common
sense, and sound policy. Section 77-20(a) states in plain language that
“the seaward boundary” of all oceanfront property “is the mean high
water mark.”76 An appropriate reading of the statute would appear to
be that the mean high-water mark remains the seaward boundary
irrespective of changes in the contours of the shoreline and regardless
of whether the changes are the product of the processes of erosion
and accretion or the result of avulsion. This reading is reinforced by
section 146-6(a), which provides that, “[i]f any land is, by any process
of nature . . . raised above the high watermark of any navigable water,
title thereto shall vest in the owner of that land which, immediately
prior to the raising of the land in question, directly adjoined the
navigable water.”77 Including the phrase “by any process of nature”
clearly changes the common law avulsion rule governing additions to
the shoreline. Section 146-6(a) does not, however, address the effect
on legal title when natural forces create submerged lands where once
there were uplands. If the natural forces qualify as erosion, then the
common law rule places title to such submerged land in the state.
But, whether title to submerged lands resulting from an avulsive
event lies with the state or remains with the littoral owner would still

74. See 1 WATERS AND WATER RIGHTS, supra note 9, § 6.03(b)(2), at 191.
75. See Johnson, 278 N.C. at 146, 179 S.E.2d at 384; Murray, 8 N.C. (1 Hawkes) at 57;
76. N.C. GEN. STAT. § 77-20(a) (1999) (emphasis added); see also N.C. GEN. STAT.
§ 146-64(4), (7) (1999) (including the waters of the Atlantic Ocean as navigable waters).
77. N.C. GEN. STAT. § 146-6(a) (1999) (emphasis added).
depend on whether section 77-20(a) is construed to reject the traditional common law rule of avulsion.\textsuperscript{78}

In addition to the explicit language of section 77-20(a), common sense and sound policy require that it be read as a complete rejection of the common law rule of avulsion. Application of the avulsion rule would mean that when there is a sudden and perceptible increase of the dry sand beach, the resulting addition to the shoreline would not belong to the littoral owner. Instead, if the boundary between the private uplands and state-owned public trust lands does not move as the result of an avulsive addition to the shoreline, the addition would belong to the state and be part of the state’s public trust lands. This would destroy the littoral owner’s direct contact with the ocean. Such a result certainly would be inconsistent with the reasonable expectations of oceanfront owners that, regardless of the cause, they hold title to any shoreline additions and that such additions simply extend their littoral property seaward.

The application of the common law avulsion rule would also create unnecessary confusion and uncertainty in the law governing public and private rights in coastal lands and waters. If a hurricane removes a large segment of the dry sand beach and the boundary does not move, the oceanfront owner would hold title to the resulting wet sand beach. Does that mean the public could not legally walk on that wet sand beach? If this were the case, it would mean that there would be segments of the wet sand beach over which the public would have no rights of use. The uncertain and fortuitous movement of sand in summer hurricanes and winter northeasters would create a quilted beach: in some areas, the public would have the right of passage and use of the area below the mean high-tide line; in other adjacent areas, the public would not. Such a result is totally inconsistent with the notion that the public trust, at a minimum, creates an unbroken stretch of wet sand beach extending the length of the state’s shoreline that is submerged public trust land available for use by the public.\textsuperscript{79}

\textsuperscript{78} There is a provision in title 146, section 64(6) of the North Carolina General Statutes which defines “State Lands” as including “submerged lands,” but that section limits the inclusion of submerged lands as state lands to those in which title is vested in the state. See N.C. GEN. STAT. § 146-6(6) (1999).

\textsuperscript{79} In People v. Seepleschase Park Co., 143 N.Y.S. 503 (N.Y. Sup. Ct. 1913), modified on other grounds, 113 N.E. 521 (N.Y. 1916), the only case to address directly the effect of the shoreline's receding following an avulsive event on the public's right of passage over the foreshore, the court held that the public retained the same right of passage over the new foreshore as it had over the old. See id. at 509. In other words, the littoral owner may own the foreshore and adjacent submerged lands, but the littoral owner's title to such areas is burdened by public rights of use of the foreshore under the avulsion approach would do away with changes brought about by nature.

There does not appear to be any separate rules governing the rights of use of the forested, upland bulks, or construction on respective littoral lands from the effect of current coastal development, seawalls, or other beach erosion techniques.

Another possibility is to recover lands lost as a result of erosion and high tides and returns to the littoral owner as either private or public lands. The littoral owner should have some interest in lands lost due to avulsion. See id. at 509. The littoral owner by “natural cause” is given the title to lands those previously lost to the ocean. A project involving hydraulic engineering to maintain a new shore line would lose no justification exists for including littoral lands in such a project and concluding that section 77-20(a) applies.


81. See id.
Therefore, natural changes in the contours of the shoreline may change the point at which the mean high-water mark intersects the beach, but will not change the legal reference point for determining the seaward boundary for oceanfront property. It is and remains the mean high-water mark, wherever it is then located. This is not necessarily true when the shoreline change results from the filling of submerged lands and the raising of such lands above the mean high-water mark, an activity that is becoming increasingly common as more beaches are nourished.

IV. BEACH NOURISHMENT AND OWNERSHIP OF THE DRY SAND BEACH

Following the devastating hurricanes of recent years, there has been a significant receding of large segments of the beaches of the North Carolina barrier islands. The United States Army Corps of Engineers estimates that sixty miles of ocean beach is in need of nourishment. The sand loss is believed to have averaged 100 cubic yards per foot of beach, or a staggering total of 31.7 million cubic areas is burdened by public trust rights. The result in Steeplechase Park illustrates that the avulsion rule does not accord with common expectations, both public and private, about rights of use of the foreshore and public trust submerged lands. A better, more direct approach would do away with the distinction between the effect of avulsive changes and changes brought about by erosion and accretion.

There does not appear to be any real historical or other justification for the separate rules governing accretion and avulsion. Perhaps the distinction reflects a belief that a littoral owner could take steps to protect littoral land from the effects of erosion by bulkheading or constructing seawalls but that there was little one could do to protect littoral lands from the effects of hurricanes, northeasters, or other strong storms. Because current coastal development regulations severely limit the construction of bulkheads, seawalls, or other beach hardening structures and devices, such a justification is no longer persuasive.

Another possible justification might have to do with the right of the littoral owner to recover lands lost as the result of a hurricane or other storm. If the littoral owner retains title to lands submerged as the result of an avulsive event, then as a legal matter the littoral owner should be able to recover those lands, fill them, and raise them above the mean high-tide line. Whatever validity such a justification may have had in the past, it too has little force today. The right of littoral owners to recover land lost to storms is governed by statutes which draw no distinction between land lost due to erosion and land lost due to avulsion. See N.C. GEN. STAT. § 146-6(b)-(c) (1999). Title to land lost to an owner by “natural causes” and raised above the mean high-tide line vests in the owner of those previously lost lands unless the raising of the lands was part of a publicly financed project involving hydraulic dredging or other deposition of spoil materials or sand. Since no justification exists for the common law rule of avulsion, the courts should not hesitate in concluding that section 77-20(a) abrogates that common law rule.

80. See Jerry Allegood, Seaside Towns Need Sand, Money, NEWS & OBSERVER (Raleigh, N.C.), Oct. 10, 1999, at 1A.
81. See id.
yards of sand. The projected cost of such a vast nourishment project exceeds $76 million. Although the tremendous cost of such nourishment and other competing needs make it doubtful that Congress and the State will be both willing and able to fund all the recommended nourishment activities, undoubtedly we will see more nourishment projects undertaken on the barrier island beaches in the near future. Whatever the outcome of the Whalehead case as to the extent of the rights of oceanfront property owners to the natural dry sand beach, any such rights may be extinguished by nourishment projects. The law is clear: publicly-financed replenished beaches are public beaches.

For purposes of the present discussion, Corps beach nourishment projects can be divided into two categories. The first category includes projects undertaken to reestablish a beach seriously eroded as the result of natural forces and conditions. The second category consists of mitigation projects—those undertaken to correct and mitigate erosion damage to shorelines resulting from a Corps navigation project, such as the construction of jetties to protect an inlet. In both types of projects, public funds are used, but in the

82. See id.
83. See id.
84. North Carolina has already seen a number of beach nourishment projects. Beaches on Hatteras Island have been nourished six times since 1974 at a total cost of $1.4 million; Cape Hatteras beaches have been nourished three times since 1966 at a total cost of $4 million; beaches on Ocracoke have been nourished five times since 1986 at a total cost of $2.2 million; beaches at Atlantic Beach have been nourished five times since 1978 at a total cost of $12.7 million; beaches on Topsail Island have been nourished five times since 1982 at a total cost of $1.1 million; Wrightsville Beach beaches have been nourished eighty times since 1955 at a total cost of $8.6 million; Carolina Beach beaches have been nourished twenty-six times since 1955 at a total cost of $20.5 million; and Long Beach beaches have been nourished three times since 1992 at a total cost of $1.6 million. See Tinker Ready, The Cost of Saving the Shoreline, NEWS & OBSERVER (Raleigh, N.C.), Aug. 30, 1997, at 1A. Kure Beach was the object of a $14.2 million project completed in 1998. Nourishing Beaches is Worth the Investment, Officials Hear, DAILY NEWS (Jacksonville, N.C.), Jan. 22, 2000, at 1A.
85. See N.C. GEN. STAT. § 146-6(f) (1999).
86. A critical public policy issue is determining who pays the costs of a beach nourishment project. How the costs of a particular project are shared by the federal government and the local interest, which is the municipality, county, or state entity responsible for the project, depends upon the type of project and may vary substantially. Determining the appropriate allocation of costs between the federal government and the non-federal interest is not for the faint hearted; rather a number of statutes and complex regulations need to be examined. See, e.g., NATIONAL RESEARCH COUNCIL, BEACH NOURISHMENT AND PROTECTION 44 (1995).
87. See 33 U.S.C.A. § 426i (Supp. 2000); see also supra note 86 (discussing the allocation of costs between the federal and non-federal interest). Typically, in such cases, the Corps navigation project interferes with the natural movement of the sand in the
second category, the federal government often will pay most, if not all, of the costs of the project.88

The distinction between these two types of projects is important to the questions of ownership of the dry sand beach and public use of a particular nourished beach. If the beach nourishment is part of a hurricane and storm damage reduction project and the federal government pays any of the costs of the project, then, under federal law, the nourished beach must be open to the public.89 Federal funds may not be spent on nourishment of non-public beaches;90 rather, any such costs must be borne by the state or local government or by private individuals. To implement the congressional mandate that non-federal funds cover the costs of benefits to privately-owned shores, the Corps has adopted detailed regulations governing federal participation in shore protection projects.91

Furthermore, although the federal policy is to provide federal financial assistance in reducing damage to shore development and coastal resources from erosion, hurricanes, and other natural phenomena through shore protection projects, it is not the policy of the federal government to participate in projects that primarily provide recreational benefits. The recreational benefits associated with a project must be purely incidental; the beaches being replenished must be open to the public.92

The Corps regulations also specify the circumstances under which a beach is deemed open to the public. The regulations require that the beach be open to use by all persons on equal terms.93 This means more than public access to the replenished beach. Lack of sufficient parking facilities for the general public located reasonably

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89. See UNITED STATES ARMY CORPS OF ENGINEERS, REG. NO. 1165-2-130, WATER RESOURCES POLICIES AND AUTHORITIES: FEDERAL PARTICIPATION IN SHORE PROTECTION § 6h, at 12 (June 15, 1989) [hereinafter CORPS POLICIES AND AUTHORITIES].
90. The Water Resources Development Act of 1986, as amended in 1999, provides that:
(B) BENEFITS TO PRIVATELY OWNED SHORES—All costs assigned to benefits of periodic nourishment projects or measures to privately owned shores (where use of such shores is limited to private interests) or to prevention of losses of private land shall be borne by the non-Federal interest.
91. See CORPS POLICIES AND AUTHORITIES, supra note 89, § 6h, at 12-13.
92. See id. § 6a, at 4-9; § 6g, at 10; § 6h, at 12-13.
93. See id. § 6h, at 12.
nearby or lack of reasonable public access from public roads or parking areas to the beach constitutes a de facto restriction on public use, precluding federal funding of the project. Reasonable public access requires, at a minimum, that there be access points every quarter of a mile to the beach project area. In order to satisfy these federal requirements, the local state entity participating in the beach nourishment project must obtain any and all easements or rights necessary from private oceanfront property owners in the project area to ensure that the beach will be open to use by the public.

These federal requirements do not mandate public ownership of the nourished beach—only that it be open to the public. North Carolina law, however, emphatically states that where land is raised above the mean high-water mark, which is what is done in a beach nourishment project, title to the raised land vests in the state. Section 146-6(f) of the North Carolina General Statutes provides that “the title to land in or immediately along the Atlantic Ocean raised above the mean high water mark by publicly financed projects which involve hydraulic dredging or other deposition of spoil materials or sand vests in the State.”

CAMA regulations applicable to beach nourishment projects go even further in conditioning state involvement in beach nourishment projects. The applicable regulations require that “[t]he entire restored portion of the beach shall be in permanent public ownership.” Obtaining public ownership of the entire restored

94. See id. ¶ 68(2), at 13.
95. See id. ¶ 68(3), at 13.
96. See id. ¶¶ 10-12, at 22-23. When a beach nourishment project is undertaken, a project line is established. The project line will be located at some point above the existing mean high-water mark because of the need to contour the beach through the placement of sand during the project. Seaward of that line, sand will be placed on the beach. The project line should be the new seaward boundary of the private oceanfront property if the documents executed cede title to the state of all lands seaward of that point. If the documents do not cede title, then the boundary line is the mean high-water mark as it existed before the project was undertaken because, by statute, title vests in filled land below the mean high-water mark in the state. See N.C. GEN. STAT. § 146-6(f) (1999).

A potential problem for beach nourishment efforts is the holdout oceanfront property owner. Most oceanfront property owners faced with a receding beach and the potential for future storm damage would participate readily in any project that would protect their investment, but there is always the occasional holdout. When friendly persuasion and self-interest are insufficient to obtain the cooperation of an oceanfront property owner, the local entity will have to purchase the required easement or rights. This may entail using the power of eminent domain to condemn the relevant portion of the oceanfront parcel and to acquire the necessary rights.

97. N.C. GEN. STAT. § 146-6(f).
98. N.C. ADMIN. CODE tit. 15A, r. 7M.0202(d)(1) (June 1999) (emphasis added).
99. The federal policy that requires beach erosion control projects to be sponsored by Engineers, Digest of Water, 2-1, 14-1 to 14-11 (July 2000) (periodic navigation and beach replenishment).
portion of the beach requires that adjacent oceanfront property owners affirmatively transfer all rights and interests in that area to the state. Thus, as a result of past and future beach nourishment projects necessitated by the erosion of beaches caused by hurricane winds and waters, large segments of the North Carolina barrier island dry sand beaches are and will be owned by the state and therefore open to public use.

If, however, the beach nourishment is part of a federal corrective and mitigation project, federal law does not require that the nourished beach be open to use by the public. In this instance, the Corps will place sand on privately-owned and controlled beaches. However, section 146-6(f) draws no distinction between types of mitigation projects. By its terms, if any public funds are used, then that portion of the nourished beach extending seaward of the mean high-water mark that existed prior to the nourishment is owned by the state and available for use by the public.

Some local governments, however, may only require oceanfront property owners to execute documents that convey an easement to the local entity for public use of the replenished beach. For example, one such document, entitled "Perpetual Easement For Beach Renourishment," executed in connection with a beach nourishment project on the beaches of the Town of Kure Beach, North Carolina, attempts to create a revocable easement—revocable if the beach was not replenished on a regular, continuing basis. The oceanfront property owner executing the document employed the following language:

This easement shall expire six years from the date the execution was acknowledged before a Notary Public unless the grantee or its successors and assigns have engaged in the deposit of sand on the easement as part of the above-referenced "Carolina Beach and Vicinity-Area South, Hurricane, Wave, and Shore Protection Project" and shall expire automatically if there is any six year period in which sand is not deposited as part of this project or a comparable project sponsored in whole or in part by the Town of Kure Beach.

Such easements, however broad or limited, are inconsistent with the clear directive of section 146-6(f) and the applicable CAMA regulation that title to replenished beaches is in the state which holds them as public trust lands. Failure to make this clear to oceanfront property owners only causes confusion as to the extent of public rights to the beach and may be the source of unnecessary future litigation.

99. The federal policy mandating public use of beaches created as part of a federal beach erosion control project is explained in Chapter 14 of United States Army Corps of Engineers, Digest of Water Resources Policies and Authorities, Engineer Pamphlet 11-65-2-1, 14-1 to 14-11 (July 30, 1999). The authorizing legislation does not permit federal funds to be expended to nourish shores where use is limited to private interests. See id. § 14-1(c)(2)(a), at 14-4. A federal corrective and mitigation project is funded under different authorities and for a different purpose. Compare 33 U.S.C.A. § 2213(d)(2)(B) (Supp. 2000) (periodic nourishment) with 33 U.S.C.A. § 426 (Supp. 2000) (shore damage prevention or mitigation).

100. See N.C. GEN. STAT. § 146-6(f) (1999).
Such an interpretation of the statute may result in a taking of private property for which compensation is mandated by both the federal and state constitutions. If erosion is caused by artificially created conditions, the oceanfront property owner has a common law claim for damages against the responsible party. Although the federal navigation servitude protects the federal government from some liability resulting from its navigation projects, under existing case law, the federal government arguably is liable for increased beach erosion caused by federal navigation structures. Thus, the federal mitigation project is a form of compensation to the affected oceanfront property owner. If the state takes title to the raised land under section 146-6(f), then the state arguably is appropriating a benefit that rightly belongs to the oceanfront property owner. In such circumstances, the state must either permit title to the nourished dry sand beach to remain in the adjacent oceanfront property owner or compensate that owner. Therefore, unless the beach nourishment project is a federal corrective mitigation project, a nourished beach is a public beach. If the project is corrective, then title should vest in the oceanfront owner. The public right to use the property depends on whether the Whalehead litigation results in a decision that all dry sand beaches of the state are public beaches.

V. PUBLIC AND PRIVATE RIGHTS TO THE DRY SAND BEACH

Applying the Borax 186.6-year rule or some other similar methodology to determine the mean high-water mark renders the Whalehead plaintiffs' argument that they hold legal title to the dry sand beach hard to dispute because that title has not been affected by

101. See, e.g., Lummis v. Lilly, 429 N.E.2d 1146, 1150 (Mass. 1982) (upholding a claim for shoreline damage caused by a neighboring stone groin on the theory that the appropriateness of the use of shoreline protection measures depends on whether it is a "reasonable use" by the owner of the groin) (citing RESTATEMENT (SECOND) OF TORTS, § 805A (1977)).

102. In Applegate v. United States, 35 Fed. Cl. 406 (1996), the United States Court of Federal Claims held that oceanfront property owners who alleged in their complaint that federal navigation structures interfered with the natural movement of sand in the adjacent ocean littoral currents, thereby increasing the rate of erosion on their oceanfront property, stated a legally cognizable claim under the Federal Tort Claims Act. See id. at 413–16.

103. If the plaintiffs have the right to recover land lost to them by natural causes, which they do, see N.C. GEN. STAT. § 146-6(a) (1999), and the federal government is liable for the loss of the land by reason of the action of federal navigation structures, then title to the sand on the beach should be in the oceanfront property owner. If the state claims title to the raised land, then the state is physically taking land belonging to the oceanfront property owner in violation of both the Fifth Amendment to the United States Constitution and Article I, section 19 of the Constitution of the State of North Carolina. See U.S. CONST. amend. V; N.C. CONST. art. I, § 19.
any movement of the shoreline by any natural forces. Nevertheless, the location of the mean high-water mark and the possession of technical legal title in private hands may not be determinative of the existence or non-existence of the public’s right to use the dry sand beach.\textsuperscript{104} The issue of the public right to use the dry sand beach is separate from the matter of ownership.

Under theories recognized in some other jurisdictions, privately-owned, dry sand beaches may be burdened by the right of the public to use the dry sand beach for uses associated with the use of public trust waters and submerged lands.\textsuperscript{105} Those theories recognizing the broadest rights of the public to use privately-owned, dry sand beaches are the doctrine of custom\textsuperscript{106} and the expanded public trust doctrine

\textsuperscript{104} See infra text accompanying notes 105–17. In addition, the mean high-water mark is not a very practical dividing line between lands subject to public trust rights and lands not subject to public trust rights. In particular, the mean high-water mark is not a visible line. At different times the land between the mean high-water mark and the ocean waters will appear to be part of the dry sand beach, to be part of the wet sand, or to be covered entirely by ocean waters. Thus, where it exists, the vegetation line serves as a more viable dividing line between beach which is purely private and beach which is subject to public use.

105. These theories are explored in some depth in Alice Gibbon Carmichael, Comment, Sandbars Versus Property Owners: Public Access to North Carolina Beaches, 64 N.C. L. REV. 159, 174–75 (1985); see also Jon W. Bruce & James W. Elly, Jr., The Law of Easements and Licenses in Land ¶¶ 6.02–6.03 (rev. ed. 1995) (discussing various theories supporting claims that dry sand beaches are open to public use). Of these various theories, only the doctrines of custom and expanded public trust are applicable to support claims that all dry sand beaches are open to the public. The other theories—public prescriptive easements and implied dedication—are applied on a case-by-case basis to particular locations. See, e.g., Bruce & Elly, supra, ¶¶ 4.00[4], at 4-82 to 4-84, 5.09[3], at 5-51 to 5-55. Successful litigation results only in a finding that an easement was established over a particular tract of land or that a particular tract was dedicated to the public use. See id.

106. The Oregon Supreme Court was the first court to apply the common law doctrine of custom to establish the public’s right to use the dry sand beaches of a state. See State ex rel. Thornton v. Hay, 462 P.2d 671, 673 (Or. 1969). The essential elements of a claim of customary use are: (1) a long and general usage, which in the case of beach access the Oregon court traced back to the use by the Native Americans prior to the arrival of European settlers; (2) without interruption by oceanfront property owners; (3) peaceful and free of dispute; (4) reasonable; (5) certain as to its scope and character; (6) without objection by landowners; and (7) not contrary to other customs or laws of the state. See id. at 677–78; see also Stevens v. City of Cannon Beach, 854 P.2d 440, 454-55 (Or. 1993) (restating the doctrine of custom articulated in Thornton). A few other jurisdictions have also applied the doctrine of custom to uphold the public right to use dry sand beaches. See United States v. St. Thomas Beach Resorts, Inc., 386 F. Supp. 769, 772–73 (D.V.I. 1974); Public Access Shoreline v. Hawaii County Planning Comm’n, 903 P.2d 1246, 1255-56 (Haw. 1995); County of Hawaii v. Sotomura, 517 P.2d 57, 61 (Haw. 1973); Arrington v. Mattox, 767 S.W.2d 957, 958 (Tex. Ct. App. 1989).
first set forth in *Matthews v. Bay Head Improvement Association*, a New Jersey case.

In the few states which have recognized the doctrine of custom, long and uninterrupted past use by the public of the dry sand may create a legally-protected right to continue such use. It is not clear that the doctrine of custom is part of the common law of North Carolina as no North Carolina court yet has applied the doctrine to the acquisition of property rights. But, assuming it is, the state faces one major evidentiary hurdle: the state may have to show that since the earliest colonial times, if not before a custom existed that the dry sand beaches were regarded as open to general public use. Whether sufficient historical evidence can be produced is unclear.

The second theory recognizing the right of the public to use the dry sand beaches is the expanded public trust doctrine. The doctrine provides that "the public must be given both access to and use of privately-owned dry sand areas as are reasonably necessary ... [and] must be afforded reasonable access to the foreshore as well as a suitable area for recreation on the dry sand." Whether the public trust doctrine would be interpreted as broadly by the North Carolina Supreme Court is an open question. Perhaps a clue to the court's thinking can be found in its rebuke of the North Carolina Court of Appeals in *Concerned Citizens of North Carolina v. North Carolina Department of Natural and Cultural Resources*.

108. See supra note 106.
109. See *Hay*, 462 P.2d at 677–78. The doctrine of custom would allow proof of a statewide custom, and an affirmative decision would establish the existence of a statewide right of the public to use dry sand beaches. See id. at 676.
110. See Carmichael, supra note 105, at 174-75 (asserting that it is unlikely that the North Carolina courts would accept the doctrine of custom as part of the law of the state); see also Winder v. Blake, 49 N.C. (4 Jones) 332, 336 (1837) (implying that the doctrine of custom cannot affect common law rights). But see Bost v. Mingues, 64 N.C. 44, 46-47 (1870) (recognizing custom of county to allow livestock to run at large). Furthermore, there is a serious issue as to whether the application of the doctrine of custom to establish public rights in privately-owned dry sand beaches is a violation of the taking clause of the Fifth Amendment to the United States Constitution. In *Stevens v. City of Cannon Beach*, 854 F.2d 449 (Or. 1993), the Supreme Court of Oregon reaffirmed the doctrine of custom. See id. at 452-57. When the United States Supreme Court denied the petition for a writ of certiorari, however, Justice Scalia, joined by Justice O'Connor, dissented on the ground that a serious taking question was presented by the petition. See *Stevens v. City of Cannon Beach*, 510 U.S. 1207, 1207-14 (1994) (Scalia, J., dissenting).
111. The North Carolina General Assembly believes that such a customary right exists. See infra notes 116-17 and accompanying text. In *State ex rel. Thornton v. Hay*, 462 P.2d 671 (Or. 1969), the evidence showed that when the first European settlers arrived on the shores of what is now the state of Oregon, native Americans were using the dry sand beaches and that the European settlers continued this practice. See id. at 673.
Appeals in Concerned Citizens v. Holden Beach Enterprises. In Concerned Citizens, the Court of Appeals was unpersuaded “that [it] should extend the public trust doctrine to deprive individual property owners of some portion of their property rights without compensation.” The North Carolina Supreme Court pointedly and specifically responded by saying:

We note dicta in the Court of Appeals opinion to the effect that the public trust doctrine will not secure public access to a public beach across the land of a private property owner . . . [but] it [is not] clear that in its unqualified form the statement reflects the law of this state, [and] we expressly disavow this comment.

The Supreme Court’s response therefore suggests that the Matthews expanded public trust doctrine may be part of the common law of North Carolina.

In 1998, recognizing that section 77-20(a) might be misread as a legislative statement about public trust uses of privately-owned dry sand beaches and a rejection of the doctrine of custom or the expanded public trust doctrine, the legislature amended section 77-20 by adding subsections (d) and (e). Subsection (d) states that

The public having made frequent, uninterrupted, and unobstructed use of the full width and breadth of the ocean beaches of this State from time immemorial, this section shall not be construed to impair the right of the people to the customary free use and enjoyment of the ocean beaches.

Thus, subsection (d) not only demonstrates that the General Assembly did not intend subsection (a) to be read by the courts as suggesting that the public does not have the right to use the state’s

116. N.C. GEN. STAT. § 77-20(d) (1999). North Carolina law defines “ocean beaches” as:

the area adjacent to the ocean and ocean inlets that is subject to public trust rights . . . . The landward extent of the ocean beaches is established by the common law and interpreted and applied by the courts of this State. Natural indicators of the landward extent of the ocean beaches include, but are not limited to, the first line of stable vegetation; the toe of the frontal dune; and the storm trash line.

§ 77-20(e).
ocean beaches, but also may be read as a policy statement indicating that the public does have such a right. The general public's expectations—reflected in the public's past and present use of dry sand beaches and in the actions of the General Assembly—the importance of the availability of the beaches to the economically significant coastal tourist industry, and the fact that state judges hold elected positions, suggest that the North Carolina Supreme Court will not be receptive to the Whalehead plaintiffs' contention that the public may be excluded from privately-owned dry sand beaches. If the court chooses to protect the public right, there is ample legal basis for such a ruling.

On the other hand, should the court nevertheless rule in favor of the plaintiffs, the decision may not have a dramatic impact on the public's use of many of the dry sand beaches of the state. In the Whalehead setting, the beaches in question are natural dry sand beaches. Many beaches in North Carolina have been subject to a beach nourishment project, and many more are likely to be in the future. Such dry sand beaches are public beaches.

CONCLUSION

The fundamental question of the exact location of the seaward boundary line of privately-owned oceanfront property is answered by state and federal statutes and North Carolina case law. Along natural dry sand beaches, the title to privately-owned oceanfront property includes the dry sand. As the storms, wind, and waves shift the contours of natural dry sand beaches, the boundary line moves with such changes, always leaving the title to the dry sand beach in the hands of the adjacent oceanfront property owner and title to the wet sand in the state. However, where the beaches have been nourished and appropriate procedures have been followed, the dry sand beach is part of the state's public trust lands. The boundary of privately-owned oceanfront property in such circumstances would not be an ambulatory boundary, but one fixed by the location of the mean high-water mark prior to the initiation of the nourishment project. Whether the location of the boundary along natural dry sand beaches is determinative of the public right of use is a separate question.

117. See also § 113A-134.1(b) ("The public has traditionally fully enjoyed the State's beaches and coastal waters and public access to and use of the beaches and coastal waters ... The General Assembly finds that the beaches and coastal waters ... have been customarily and freely used and enjoyed by people throughout the State.") (emphasis added).

Existing case law strongly suggests that the willingness of the standing public to use and enjoy the resource open to them
Existing case law in North Carolina and some other jurisdictions strongly suggests that the location of the boundary is not determinative. Ultimately, the answer to that question depends on the willingness of the North Carolina courts to recognize the long-standing public expectation that the dry sand beaches are a public resource open to all.