

LET'S ROLL: APPLYING LAND-BASED NOTIONS OF PROPERTY TO THE MIGRATING BARRIER ISLANDS

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INTRODUCTION

A basic assumption underlying law and public policies regarding real property is that land is stable.¹ For example, with respect to ownership interests, surveyors usually describe tracts of land by reference to fixed points that are marked by stakes placed in solid, immobile earth.² While legal scholars debate about what the term “property” encompasses and what rights should be included in the traditional “bundle of sticks,” they generally assume that clear boundaries of real property have been established, or at least are capable of being determined.³ The barrier islands of the United States defy these basic assumptions because they actually *move*.⁴ The concept that land is moving confounds not only property owners who have invested in expensive coastal real estate on the barrier islands, but also private insurers, the United States government, taxpayers who subsidize the redevelopment of these vulnerable areas, and the legal and judicial systems that lack the appropriate paradigm to make decisions about the ownership and regulation of land in motion.⁵ Hurricane Katrina, which struck the Gulf Coast and its barrier islands with devastating force in August 2005, revealed that when the forces of nature compete against society’s wishes for the use of coastal property, nature will win.⁶ It is time for the law to catch up with existing realities.

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¹ BLACK’S LAW DICTIONARY 1218 (6th ed. 1990).

² Bureau of Labor Statistics, Career Information Home Page: Surveyor, <http://www.bls.gov/k12/math03.htm> (last visited Mar. 1, 2007).

³ O. Lee Reed, *What is “Property”?*, 41 AM. BUS. L.J. 459, 495-96 (2004).

⁴ James J. Szablewicz, *Development of Barrier Islands in Virginia*, 6 VA. J. NAT. RESOURCES L. 375, 378 (1987).

⁵ See *infra* Part III.

⁶ Jeff Koinange, CNN Africa Correspondent, *Katrina: When New Orleans Went from Developed World to Third World* (Aug. 30, 2006), <http://www.cnn.com/2006/US/08/30/btsc.koinange/index.html>.

It is time to develop a new paradigm for the application of property law and land use regulation principles to the invaluable islands which, migrating and rolling over themselves, protect the coasts of the United States from Maine to Texas.

Even when arguing about what rights are included in the term "property," legal scholars commonly identify the basic right of a real property owner as the right to restrict others' use of property within established boundaries.⁷ Trespass claims rest on the notion that a landowner's rights have been infringed upon by one who has crossed a stationary property line to enter another's land.⁸ The importance of property lines is also illustrated when one asserts title to or an easement on another's property by proving that they have used land within another's tract for a requisite time period and met other legally prescribed conditions for adverse possession.⁹

As the laws of real property ownership depend upon the basic stability of land, so do principles of environmental law and land use.¹⁰ Federal, state, and local governments enact laws and regulations that limit what private owners or the public may do on specified lands.¹¹ The stated purpose of these laws and regulations is usually to protect natural resources, including threatened species, or to protect human populations.¹²

⁷ Craig Anthony Arnold, *The Reconstitution of Property: Property as a Web of Interests*, 26 HARV. ENVTL. L. REV. 281, 285 (2002); Eric T. Freyfogle, *The Particulars of Owning*, 25 ECOLOGY L.Q. 574, 577 (1999); Reed, *supra* note 3, at 487-97.

⁸ BLACK'S LAW DICTIONARY 1502 (6th ed. 1990).

⁹ Szablewicz, *supra* note 4, at 384 n.45.

¹⁰ See Robert J. Goldstein, *Green Wood in the Bundle of Sticks: Fitting Environmental Ethics and Ecology into Real Property Law*, 25 B.C. ENVTL. AFF. L. REV. 347, 350 (1998) (stating that "the popular perception" that the law of real property ownership is "well settled"). While beyond the scope of this specific piece, an area for future study is the change in norms with respect to applying the traditional "bundle of sticks" approach to barrier island property.

¹¹ See, e.g., Va. Marine Resources Comm'n, Coastal Primary Sand Dune/Reaches Guidelines: Barrier Island Policy, 4 VA. ADMIN. CODE § 20-440-10 (2007), available at <http://www.mrc.virginia.gov/regulations/fr440.shtm>.

¹² E.g., Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (codified as amended at 16 U.S.C. §§ 1531-44 (2007)) (mandating that all federal agencies must seek to conserve endangered and threatened species and no federal agency may issue a permit affecting habitats of such species without an exemption from the Endangered Species Committee); Coastal Barrier Resources Act of 1982, Pub. L. No. 97-348, 96 Stat. 1653 (1982) (codified at 16 U.S.C. §§ 3501-10 (2007)) (recognizing that the federal government has subsidized development on barrier islands that has resulted in "the loss of barrier resources" and, thus, prohibits the development of undeveloped barrier islands); Coastal Primary Sand Dunes and Beaches, VA. CODE ANN. §§ 28.2-1400 to -1420 (2002) (preventing activities that disrupt primary sand dunes of coastal barrier islands); Northampton County,

Whether a particular environmental law or land use regulation is wise or effective may be a matter of significant controversy, but such laws generally assume that boundaries of public land, privately held parcels, and the commons are, if not exactly known, at least determinable.¹³

Land on the barrier islands is not stationary; it is continually moving.¹⁴ Sudden changes, such as those wrought by Hurricane Katrina, Hurricane Hugo, and other major storms, may mean that the earth is in a different place today than it was last week.¹⁵ Other changes are gradual and result from ongoing geologic processes:¹⁶ land belonging to a particular owner that was staked and recorded for posterity in a courthouse may be a foot under water within a year, and two hundred feet offshore in ten years.¹⁷ Either way, complex ownership and jurisdictional questions can arise, such as, what happens when privately owned property ultimately migrates several miles into marshland that is owned by the state, or who owns the new merger of grasses and marsh, where there was once federally controlled navigable water?

These are not hypothetical problems; rather, they represent a few of the property law issues presented by the barrier islands of the United States. The barrier islands consist of a string of approximately three hundred islands that line the East and Gulf Coasts from Maine to Texas.¹⁸ This system covers about 1.6 million acres in eighteen states.¹⁹ It is the longest and most varied barrier coastline in the world.²⁰ The barrier

Va. Zoning Ordinance, art. X, para. E.3 (Dec. 28, 2000) (amended Feb. 4, 2004) (protecting and restoring state waters).

¹³ See, e.g., 16 U.S.C. § 3503 (“[T]he secretary shall review the maps . . . and shall make . . . modifications to the boundaries . . . to reflect changes that have occurred in the size or location of any [Coastal Barrier Resources] System unit as a result of natural forces.”).

¹⁴ Bijal P. Trivedi, *Flying Artist Preserves Beauty of Shifting Barrier Islands*, NAT'L GEOGRAPHIC TODAY, June 16, 2003, http://news.nationalgeographic.com/news/2003/06/0616_030616_tvbarrierislands.html.

¹⁵ DAVID M. BUSH ET AL., *LIVING BY THE RULES OF THE SEA* 11 (1996).

¹⁶ *Id.*

¹⁷ WALLACE KAUFMAN & ORRIN H. PILKEY, JR., *THE BEACHES ARE MOVING: THE DROWNING OF AMERICA'S SHORELINE* 92 (1983).

¹⁸ TIMOTHY BEATLEY ET AL., *AN INTRODUCTION TO COASTAL ZONE MANAGEMENT* 18-19 (2d ed. 2002).

¹⁹ *Id.* at 18.

²⁰ Trivedi, *supra* note 14. Orrin Pilkey, Director of Duke University's Program for the Study of Developed Shorelines, has said: “I don't think there is a more dynamic big piece of real estate on the face of the earth.” *Id.* Approximately fifteen percent of the world's coastline is found on barrier islands. Richard Davis, *Barrier Island Systems—A Geological Overview*, in *GEOLOGY OF HOLOCENE BARRIER ISLAND SYSTEMS* 1 (Richard A. Davis, Jr. ed., 1994).

islands have several remarkable geologic and ecologic characteristics, but this piece will focus only on the islands' movement and the fact that our present legal framework cannot accommodate the challenges associated with moving real estate.²¹

What does it mean to "own" land in motion? How should we, as a society, protect it as an important natural resource? When real property sometimes acts more like water than land, it seems inappropriate to apply traditional notions of real property law and land use regulation.²² One reaction, frequently implemented by the U.S. Army Corps of Engineers ("Corps"), has been to attempt to stabilize the barrier islands, and thus force the islands into behaving like land should, that is, to be stationary.²³ Hurricane Katrina dramatically revealed to the public what many geologists have known for decades: the long-term effectiveness of human attempts to hold back the waters and protect real property is, at best, doubtful.²⁴

While this Article focuses on the law related to the barrier islands of Virginia, the issues presented are relevant to the entire barrier island

While a barrier island system as a whole has unique characteristics, each island also has distinctive geological and ecological features, and plant and animal populations. *Id.* Yet each island is also dependent on its neighboring islands for survival, due to the natural movement of sand. KAUFMAN & PILKEY, *supra* note 17, at 109. Each chain of barrier islands, such as the Maryland-Virginia chain, responds to the same body of water and shares the same sand supply. *Id.*

²¹ *Id.* at 13 ("In our business hats we do not recognize any real estate as movable."); Oliver A. Houck, *More Unfinished Stories: Lucas, Atlanta Coalition, and Palila/Sweet Home*, 75 U. COLO. L. REV. 331, 336 (2004) ("Land-based notions of property have a hard time catching up with the dynamics of the coast, to say nothing of those of barrier islands.").

²² KAUFMAN & PILKEY, *supra* note 17, at 224. ("Coastal law is the chaotic battlefield on which our firm and orderly notion of private property and real estate battles with the huge dynamic forces of nature, which recognize legal systems even less than iron or concrete markers set in shifting sands.").

²³ *Id.* at 189-92 (describing protective shoreline engineering structures and asserting that such measures interfere with natural processes and ultimately create more peril for the development they were meant to protect).

²⁴ See, e.g., BUSH, *supra* note 15; Alan Cooperman, *Where Most See a Weather System, Some See Divine Retribution*, WASH. POST, Sept. 4, 2005, at A27 (arguing that the U.S. Army Corps of Engineers "hastened the sinking of New Orleans and destroyed the barrier islands that protected the Gulf Coast" by building levees); Michael Grunwald & Susan B. Glasser, *The Slow Drowning of New Orleans*, WASH. POST, Oct. 9, 2005, at A1 ("For decades, the Corps has waged an unrelenting war on nature . . . but one result has been the destruction of wetlands that helped protect the city from the sea."); see also *Avenal v. State*, 886 So. 2d 1085, 1111 n.3 (La. 2004) (Wiemer, J., concurring) (prescient opinion noting accelerated erosion caused by levee system and predicting "system collapse," and warning of safety threat for Louisiana residents).

system of the United States.²⁵ Although the impact of Hurricane Katrina on the Gulf Coast will not be addressed in depth, the incident raised the national consciousness about the fragility of coastal resources and illustrated the tragic consequences of having large human populations concentrated in coastal areas.²⁶ The barrier islands and the law of the Commonwealth of Virginia serve as the model for discussion for several reasons. First and most significantly, the approximately nineteen barrier islands of Virginia are unique because the majority of them are undeveloped.²⁷ Owned mostly by The Nature Conservancy ("TNC"), the federal government, and the Commonwealth of Virginia,²⁸ and known as "the last wild place,"²⁹ these barrier islands illustrate what happens when they are allowed to migrate naturally. Second, the undeveloped Virginia islands were not always undeveloped: as described in this paper, some once supported thriving communities and businesses.³⁰ For example, on Hog Island, rather than rebuild after a large storm hit the area in 1933, nearly all the residents of the village of Broadwater moved themselves and their houses (by way of barge) to the mainland.³¹ Therefore, the

²⁵ Szablewicz, *supra* note 4, at 377.

²⁶ Koinange, *supra* note 6 (pointing out that billions of dollars in lost personal possessions, thousands of displaced residents, and dead bodies are just some of the horrors in the aftermath of Katrina).

²⁷ William Warner, *Introduction to SEASHORE CHRONICLES* xiii (Brooks Miles Barnes & Barry Truitt eds., 1999) (noting that Virginia barrier islands represent "the longest continuous stretch of undisturbed beachfront" on the East Coast). However, the problems related to development on the privately owned Virginia barrier islands are typical of those facing other barrier islands. See Szablewicz, *supra* note 4, at 377.

²⁸ The Nature Conservancy owns fourteen of the barrier islands in Virginia, including the following major islands (north to south): Metompkin, Parramore, Revel's, Hog, Cobb's, Little Cobb's, Ship Shoal, Myrtle, and Smith's. Warner, *supra* note 27, at xiii. The federal government owns most of Assateague (which is partly in Maryland), Wallops, Assawoman, and Fisherman. SEASHORE CHRONICLES, *supra* note 27, at 14. The Commonwealth of Virginia owns Wreck and Mockhorn. *Id.* Chincoteague, the only highly developed barrier island in Virginia, is owned privately, as is most of Cedar. See KIRK MARINER, OFF 13: THE EASTERN SHORE OF VIRGINIA GUIDEBOOK 39-50, 63-64, 68-69 (2000) [hereinafter MARINER, OFF 13]; THE NATURE CONSERVANCY, THE VIRGINIA COAST RESERVE 2 (2005) [hereinafter THE VIRGINIA COAST RESERVE] (on file with the Virginia Coast Reserve).

²⁹ Videotape: The Last Wild Place (Cox Communications 1999) (on file with The Barrier Islands Center, Machipongo, Va.).

³⁰ Warner, *supra* note 27, at x.

³¹ *Id.* at xiii (explaining that the 1933 hurricane "prompted a general exodus" from the Virginia barrier islands); RALPH T. WHITELAW, 1 VIRGINIA'S EASTERN SHORE 370 (1968). In 1933, Broadwater was a thriving community with a population of approximately 159 people. Fifteenth Census of the United States, Virginia, Northampton County, Sheets

reaction in Virginia of allowing nature to dictate the situation presents a striking historical contrast to the recent quest to rebuild New Orleans, Louisiana after Hurricane Katrina,³² and to the redevelopment of Galveston, Texas after a storm wiped out the city³³ and killed approximately six thousand people in 1900.³⁴

The third reason for choosing to study the Commonwealth of Virginia for this piece is that the state represents a traditional, conservative jurisdiction, rich in both varied natural resources and environmental challenges.³⁵ While the state government has generally preferred fiscal conservatism and caution with respect to change, the rapid growth in human population and economic resources has forced it to become more proactive in environmental regulation.³⁶ Virginia's mounting environmental problems and conservative to slightly moderate political climate reflect the general situation in the rest of the country.³⁷ These characteristics make Virginia an ideal jurisdiction for examination.³⁸ Finally, relative to other states, the history and law of Virginia are both long and well recorded.³⁹ Captain John Smith noticed the rich natural resources of the Virginia barrier islands in 1608 when he mapped the area.⁴⁰ Northampton

26A-27B (1930). The village boasted a post office, a church, an elementary school, a hotel, a sportsmen's club, two stores, an ice cream parlor, and a community center. CURTIS J. BADGER & RICK KELLAM, *THE BARRIER ISLANDS* 30 (1989); Interview with Ken Marshall, Boat Captain, at Hog Island, Va. (Sept. 26, 2005).

³² Daniel Eisenberg, *How to Spend (Almost) \$1 Billion a Day*, TIME, Sept. 26, 2005, at 22, available at <http://www.time.com/time/magazine/printout/0.8816.1106310.00.html> (stating that President Bush promised "one of the largest reconstruction efforts the world has ever seen"); Steve Almasy, *New Orleans to Rebuild Among Uncertainty* (Oct. 4, 2005), <http://www.cnn.com/2005/US/10/03/new.orleans.rebuilding/index.html> (covering President Bush and Mayor Ray Nagin's announcement that New Orleans will be re-built "better than before").

³³ CORNELIA DEAN, *AGAINST THE TIDE* 12 (1999).

³⁴ KAUFMAN & PILKEY, *supra* note 17, at 150.

³⁵ Within its borders, Virginia contains mountains, forests, inland waterways, wetlands, coastal waters, beaches, and barrier islands. Lynda L. Butler, *State Environmental Programs: A Study in Political Influence and Regulatory Failure*, 31 WM. & MARY L. REV. 823, 826 (1990). Its varied ecological resources make it a remarkably beautiful state but present significant management issues. *Id.* at 827.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.* at 826-27; Howard Fineman, *The Virginians*, NEWSWEEK, Jan. 2, 2006, at 70, 72 ("[Virginia is] a test bed for political change in the country as a whole.").

³⁹ Official Tourism Website of the Commonwealth of Virginia, History & Heritage, <http://www.virginia.org/site/content.asp?MGrp=1&MCat=2&Rgn=10000> (last visited Mar. 1, 2007).

⁴⁰ Alexander Hunter, *Hog Island, VA*, in SEASHORE CHRONICLES, *supra* note 27, at 158; WHITELAW, *supra* note 32, at 21.

County on the Eastern Shore of Virginia, where many of the barrier islands are located, has the oldest continuous set of county court records in the country.⁴¹ Thus, from a historical perspective, much information can be gained—and many lessons learned—from Virginia's experiences.

To illustrate the concept that barrier islands lack the stability traditionally inherent in "land," as one typically conceives of the term, Part I will describe the characteristics of barrier islands and the basic geological processes underlying their natural migration. Part II will provide an overview of the methods that the government and private owners have used in attempting to stabilize migrating land, and will discuss why most of those methods are ineffective over the long term. For decades, the courts have struggled with applying land-based property law to ownership of barrier island property and these struggles will be addressed in Part III, with a focus on Virginia law. Finally, the Conclusion will argue that barrier islands should be governed and conserved as a community-based resource, like water, rather than as real property to which traditional property law principles have proven to be generally inappropriate.

I. LAND IN MOTION: AN OVERVIEW OF LEGALLY SIGNIFICANT GEOLOGIC AND ECOLOGIC CHARACTERISTICS OF THE BARRIER ISLANDS

Barrier islands are inherently transient, unstable land.⁴² More specifically, they are "elongated narrow landforms consisting largely of unconsolidated and shifting sand, fronted on one side by the ocean and on the other by a bay or marshland which separates them from the mainland."⁴³ Such islands are formed by the natural geologic processes of ocean currents, the movement of sand and other fine materials, and sea level rise.⁴⁴ When left in their natural state, the islands migrate over time.⁴⁵ Although unstable, the islands are said by geologists to be in "dynamic

⁴¹ There are two counties on the Eastern Shore of Virginia, Northampton and Accomack. WHITELOW, *supra* note 31, at 9. The court records in Northampton County, Virginia date from 1632. *Id.* at 27.

⁴² 4 VA. ADMIN. CODE § 20-440-10 (2007); CURTIS J. BADGER, SALT TIDE: CYCLES AND CURRENTS OF LIFE ALONG THE COAST 41-49 (1993) (noting that the constant changing of barrier islands is part of an inevitable cycle); Warner, *supra* note 27, at x (stating that barrier islands are "earth's least stable landform").

⁴³ 4 VA. ADMIN. CODE § 20-440-10 (2007).

⁴⁴ See Davis, *supra* note 20, at 3.

⁴⁵ *Id.* at 6-13 (describing the three primary morphologies of barrier islands and the natural movement of each).

equilibrium.”⁴⁶ In other words, the so-called erosion⁴⁷ that occurs on the coastline is not a permanent loss, but rather a “survival” strategy.⁴⁸ As parts of an island change and move, the whole island also rolls backward over itself and retreats toward the mainland.⁴⁹ Thus, the barrier islands are essentially “warehouses of sand supplied by ancient rivers that no longer deliver directly to the ocean beaches. To preserve this sand, the islands migrate up the coastal plain, picking up sand even now being deposited by rivers in estuaries and bays.”⁵⁰ Most of the barrier islands that protect the East and Gulf Coasts of the United States have existed continuously for thousands of years, although they have moved several miles.⁵¹

Rising sea level causes the barrier islands and the coastlines behind them to retreat.⁵² It is the “migration of the barrier islands [that] keeps them high enough on the coastal plain to stay above sea level.”⁵³ In geological time, sea level is always changing and therefore, the islands have kept moving and must continue to move if they are to remain in existence.⁵⁴

⁴⁶ *Id.* at 8; KAUFMAN & PILKEY, *supra* note 17, at 15.

⁴⁷ KAUFMAN & PILKEY, *supra* note 17, at 219. Traditionally, the term “erosion” is used by landowners, property lawyers, and engineers to describe the loss of land that occurs when the shoreline eats into the boundaries of real property. *Id.* Geologists prefer the term “migration,” which refers to the natural travel of shorelines and barrier islands in order to maintain their existence (albeit in a different location). *Id.* This conceptual difference is illustrative because it underlies the struggle within the legal system to apply traditional notions of real property to the barrier islands.

⁴⁸ BADGER, *supra* note 42, at 41.

⁴⁹ KAUFMAN & PILKEY, *supra* note 17, at 113 (“What places us in most danger is not the gradual rolling over of the barrier islands, but our insistence on occupying and stabilizing, buying and selling every valuable square foot of real estate.”). Due to patterns of tidal delta flow, some of the Virginia barrier islands (e.g., Parramore, Hog and Cobb) have not migrated directly west but have rotated in a more clockwise pattern, with the northern ends remaining stable or moving slightly seaward, while the southern ends have retreated toward the mainland, giving these islands a drumstick shape. G.F. Oertel & J.C. Craft, *New Jersey and Delmarva Barrier Islands*, in *GEOLOGY OF HOLOCENE BARRIER ISLAND SYSTEMS*, *supra* note 20, at 225. Such patterns illustrate the geologic complexity of barrier environments and the uniqueness of each barrier island. While each is unstable, it may respond to natural forces in an idiosyncratic manner, making predictions about the future difficult and effective land use regulation particularly challenging. *See id.* at 222-26; KAUFMAN & PILKEY, *supra* note 17, at 98, 109.

⁵⁰ KAUFMAN & PILKEY, *supra* note 17, at 24.

⁵¹ 4 VA. ADMIN. CODE § 20-44-10A.2 (2007); KAUFMAN & PILKEY, *supra* note 17, at 24.

⁵² KAUFMAN & PILKEY, *supra* note 17, at 23-25.

⁵³ *Id.* at 98.

⁵⁴ *Id.* Generally, barrier islands all over the world have the same mechanisms for retreating in the face of rising sea level: migration, inlet formation, dune movement, and overwash, the latter occurring when a storm causes waves to wash over an island and deposit

How quickly the islands move, and how fast the coast retreats, depends largely upon the slope of the coastal plain.⁵⁵ If the slope is gentle, as it is on the East and Gulf Coasts of the United States, the barrier islands and the shoreline behind them will retreat more quickly.⁵⁶ Along parts of the Gulf Coast, the shoreline has retreated one hundred feet per year since the end of the last ice age.⁵⁷ The rate of sea level rise has an enormous impact on the pace of movement; on average, a “one foot rise in sea level sends the shoreline back one to two hundred feet.”⁵⁸ Although there exists some controversy today about whether the actions of man are causing an accelerated rate of sea level rise,⁵⁹ there is no doubt that sea level is, in fact, rising, and efforts to control the encroachment of the sea are therefore temporary.⁶⁰

beach sand. The sand washing over the island often enables the island's survival because the sand is protected from loss offshore and the island is perpetuated in a more landward location. 4 VA. ADMIN. CODE § 20-440-10A.2 (2007); BUSH, *supra* note 15, at 22; KAUFMAN & PILKEY, *supra* note 17, at 98. Inlet formation, another survival mechanism, creates land because when sand pours through an inlet, it builds up on one side of the channel. As the inlet migrates (which it will naturally do over time unless it meets resistance), it continues to create land in this manner. Geologists believe that approximately forty percent of the Outer Banks of North Carolina were created by inlets. Unfortunately, development on such land often prevents these mechanisms from occurring, resulting in the islands being starved of the sand that they need to survive, and impeding the creation of new land. KAUFMAN & PILKEY, *supra* note 17, at 104-07.

⁵⁵ KAUFMAN & PILKEY, *supra* note 17, at 24-25.

⁵⁶ *Id.* at 24.

⁵⁷ *Id.* at 24-25.

⁵⁸ DEAN, *supra* note 33, at 34; Trivedi, *supra* note 14 (explaining that barrier islands can migrate twenty feet per year). Some barrier islands on the east coast are rolling over themselves in “retreat so quickly that salt marsh grass [which was on the inland side of the island] reappears on the ocean side.” KAUFMAN & PILKEY, *supra* note 17, at 220-21.

⁵⁹ See, e.g., James G. Titus, *Greenhouse Effect and Sea Level Rise: The Cost of Holding Back the Sea*, 19 COASTAL MGMT. 171 (1991), available at [http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BPPAL/\\$File/cost_of_holding.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BPPAL/$File/cost_of_holding.pdf).

⁶⁰ KAUFMAN & PILKEY, *supra* note 17, at 25, 220 (noting that where land is sinking, sea level rises even more quickly); Diane Tennant, *Sea Change*, VIRGINIAN-PILOT, Sept. 18, 2005, at A1; Karen Durhing, Ctr. for Coastal Res. Mgmt., Va. Inst. of Marine Science, Address at the Shoreline Erosion Seminar (Sept. 29, 2005). The rise in sea level is expected to not only continue into the foreseeable future, but also to accelerate over the next fifty to one hundred years due to changes in the earth's atmosphere. Solutions to the problem must necessarily take into account the fact that barrier islands will respond by migrating more quickly. BUSH, *supra* note 15, at 16. See also Oertel & Craft, *supra* note 49, at 210 (discussing data indicating a doubling of the rate of sea level rise in the last century); Tennant, *supra* (discussing models that predict that sea level will rise two to seven feet over the next ninety-five years).

Each barrier island is generally characterized by several zones: “a sandy beach [on the ocean side], frontal and secondary sand dunes, interior wetlands, and maritime forest, a backshore zone (often marsh), and the lagoon or sound that separates the island from the mainland.”⁶¹ Although these environments are different from one another, they are also interrelated because they merge and evolve as the island migrates.⁶² A barrier island is constructed of sediment (sand, mud and shell debris) upon which plant cover attaches, which, in turn, causes more sand to attach and thereby build up the island.⁶³ Grasses allow dunes and marshes to form; as one moves inland from the grasses, one finds dense shrub growth and then usually trees, depending on the size of the island and whether salt water has killed vegetation due to flooding or wind-borne sea spray.⁶⁴

The ultimate littoral zone, barrier islands are truly at the interface between land and sea; they absorb the brutal impact of storms, hurricanes, storm surge, and waves.⁶⁵ Indeed, barrier islands play a crucial role in protecting the mainland.⁶⁶ Unfortunately, the exposure of the islands causes them to be extremely vulnerable to forces caused by rising sea level and man-made alterations such as jetties, bulkheads, and the removal of dunes and vegetation for the purpose of construction.⁶⁷

The ecological diversity contained within the relatively small area of a barrier island (e.g., Hog Island is only about seven miles long and one mile wide) makes these islands remarkable, not only because of their ability to absorb storm energy but also as wildlife habitats.⁶⁸ Approximately 250 species of birds, including the protected piping plover, find shelter on the islands, which is a primary reason that TNC acquired fourteen of the Virginia barrier islands.⁶⁹ Furthermore, the Virginia islands

⁶¹ BEATLEY ET AL., *supra* note 18, at 19.

⁶² See Davis, *supra* note 20, at 2-8.

⁶³ *Id.* at 15, 17.

⁶⁴ Bush, *supra* note 15, at 10-11, 17, 20, 22, 104.

⁶⁵ See BADGER, *supra* note 42, at 42-43; Orrin H. Pilkey & Mary Edna Fraser, *Preserving Barrier Islands*, DUKE MAGAZINE, July-Aug. 2003, at 45, 46, available at <http://www.duke-magazine.duke.edu/dukemag/issues/070803/barrier1.html> (stating that barrier islands are “the canaries in the coal mine,” warning society of potentially catastrophic changes).

⁶⁶ Daniel D. Barnhizer, *Givings Recapture: Funding Public Acquisition of Private Property Interests on the Coasts*, 27 HARV. ENVTL. L. REV. 295, 312 (2003).

⁶⁷ BUSH, *supra* note 15, at 10-11.

⁶⁸ Brooks Miles Barnes & Barry Truitt, *A Short History of the Virginia Barrier Islands*, in SEASHORE CHRONICLES, *supra* note 27, at 6 (“The barrier island complex is nursery and way station for a myriad of animal life.”).

⁶⁹ The Nature Conservancy in Virginia, Virginia Coast Reserve, <http://nature.org/where-we-work/northamerica/states/virginia/preserves/art1244.html> (last visited Mar. 1, 2007);

are a key stopping point for thousands of migratory birds and monarch butterflies, which rest and feed on the islands during fall and spring migration.⁷⁰ Thus, as further discussed in Part III, when a barrier island is prevented from migrating by man-made attempts at stabilization, it is likely to shrink and perhaps even disappear, a serious loss for coastal human populations and numerous species of wildlife.⁷¹

II. ATTEMPTS TO STABILIZE MIGRATING LAND

Ecosystems along coastal zones and on the barrier islands are complex and diverse. As numerous wildlife species are attracted to the water's edge, so are humans; today, approximately fifty-three percent of the population in the lower forty-eight states resides in the seventeen percent of counties that are coastal.⁷² By 2023, the number of coastal county residents is expected to climb by twenty-six million people.⁷³ Unfortunately, the density of population in these environmentally fragile areas often has a devastating effect, so that the very resources that initially attract bountiful life are steadily destroyed.⁷⁴ Habitats on the coast, including protective sand dunes and the barrier islands themselves, have been bulldozed to make way for housing developments, high rise hotels, and condominiums.⁷⁵ In addition to the loss of wildlife habitats, once these

Interview with Stephen Parker, Director, Va. Coast Reserve, The Nature Conservancy, in Nassawadox, Va. (Sept. 1, 2005).

⁷⁰ Virginia Coast Reserve, *supra* note 69; Yvonne Schultz, Outdoor Recreation Planner, E. Shore of Va. Nat'l Wildlife Refuge, Address at the Guided Tour of Fisherman Island (Oct. 15, 2005).

⁷¹ Virginia Coast Reserve, *supra* note 69.

⁷² DANA BEACH, S.C. COASTAL CONSERVATION LEAGUE, COASTAL SPRAWL: THE EFFECTS OF URBAN DESIGN ON AQUATIC ECOSYSTEMS IN THE UNITED STATES 1 (2002), available at http://www.pewtrusts.com/pdf/env_pew_oceans_sprawl.pdf.

⁷³ Barnhizer, *supra* note 66, at 295; Jeff Donn, *Despite Fears, Americans Head to Coasts*, LINCOLN J. STAR, Dec. 4, 2005, at 3A (noting further that ninety-eight percent of the Florida population resides in coastal counties known as "Hurricane Alley"). Such a dramatic trend toward increased coastal population is a relatively recent phenomenon, occurring after the Civil War. BADGER, *supra* note 42, at 43. It is especially concerning given the projections for rising sea level and increasing hurricane intensity; American society is exacerbating its vulnerability along the coasts, rather than protecting itself against future losses. BUSH, *supra* note 15, at 5, 16.

⁷⁴ KARL F. NORDSTROM, BEACHES AND DUNES OF DEVELOPED COASTS 23 (2000) ("One of the worst aspects of tourism development is the narrow conception of the value of beaches as recreation platforms rather than dynamic natural environments.").

⁷⁵ Property values on the coast have skyrocketed in recent decades; the average value of a coastal home is \$308,845, which is nearly fifty percent more than an inland home.

lines of defense are removed, the coastline's natural protection from currents, rising sea levels, and hurricanes is greatly diminished.⁷⁶

Generally, man's response to diminished natural shoreline defenses has been to erect man-made defenses, deemed "hard" stabilization: seawalls, breakwaters, jetties, groins, revetments and bulkheads.⁷⁷ While these may protect the beaches and buildings in the short-term, their impact in the long-term is devastating.⁷⁸ Hard structures built on the beach, such as those listed above as well as building foundations, reduce the ability of the sand and sea system to maintain its dynamic equilibrium.⁷⁹ They trap sand and dampen wave energy, which prevents the natural movements of sand and island migration, processes which must occur if the island is to survive.⁸⁰ While beachfront structures are protected in the short-term, the beach itself is destroyed in the long-term.⁸¹

Barrier islands are nature's front-line defense of the mainland coast against the impact of the sea and the forces associated with storms.⁸² As discussed in Part I, the migration of the barrier islands allows them to sustain themselves and to continue protecting the coast.⁸³ Although

Donn, *supra* note 73, at 3A. See Trivedi, *supra* note 14 ("The [barrier] islands are among the world's most prized real estate—but their nature is to move.").

⁷⁶ KAUFMAN & PILKEY, *supra* note 17, at 192.

⁷⁷ See *id.* at 192-212. For an overview of shoreline stabilization techniques, see Jessica VanTine & Tiffany B. Zezula, *The Beach Zone: Using Local Land Use Authority to Preserve Barrier Islands*, 20 PACE ENVTL. L. REV. 299, 300, 305-15 (2002).

⁷⁸ BUSH, *supra* note 15, at 73 (listing advantages and disadvantages of hard stabilization measures); DEAN, *supra* note 33, at 16, 66 (stating that shoreline stabilization measures undertaken to protect buildings usually result in severe degradation or total loss of beach in the long term); Houck, *supra* note 21, at 359-60. America's beaches "did not really begin to disappear" until after the first jetties were built in the early part of the twentieth century. KAUFMAN & PILKEY, *supra* note 17, at 169. Of course, when a beach is lost to "armor," such as a jetty or seawall, wildlife species have also lost their habitat. DEAN, *supra* note 34, at 67; VanTine & Zezula, *supra* note 77, at 300 (noting that structural solutions to combat erosion on barrier islands are detrimental to habitat of endangered species).

⁷⁹ See *supra* notes 44-48 and accompanying text. "No erosion problem exists until people lay out property lines and build." KAUFMAN & PILKEY, *supra* note 17, at 191. Besides increasing erosion, development on the shore also results in increased pollution, which further endangers reefs and wildlife. *Id.* at 42.

⁸⁰ BUSH, *supra* note 15, at 24; KAUFMAN & PILKEY, *supra* note 17, at 219-20. The interference of man-made structures with natural processes also resulted in the Dust Bowl problems and farmland erosion of the Great Plains. *Id.*

⁸¹ See generally *id.* (discussing numerous examples of beaches destroyed by attempts at stabilization).

⁸² BADGER, *supra* note 42, at 42.

⁸³ See *supra* notes 52-60 and accompanying text; see also Valerie Bauerlein, *On Topsail Island, Storms Fuel Battle Over Right to Build*, WALL ST. J., Dec. 8, 2005, at A1 (suggesting

geologists have understood the natural movements of sand and the protective defense line of the barrier islands for decades, the public (and thus the government) has not been so willing to allow island migration.⁸⁴ Instead, the U.S. Army Corps of Engineers has spent billions of dollars in stabilization projects.⁸⁵ Since hard protective structures have proved to be largely ineffective and extremely expensive,⁸⁶ the Corps has recently focused its spending on beach re-nourishment efforts.⁸⁷ These latter efforts have been found to be temporary and very costly,⁸⁸ but they keep the tourism dollars flowing in and are politically popular.⁸⁹

that without human interference, barrier islands would migrate freely and accumulate sand from currents and storms).

⁸⁴ KAUFMAN & PILKEY, *supra* note 17, at 11 (“[The] struggle to ‘defend’ the coast is the acting out of an understandable human sentimentality, hedonism, and faith in technology.”).

⁸⁵ *Id.* at 254; Houck, *supra* note 21, at 359.

⁸⁶ *Allen v. Strough*, 752 N.Y.S.2d 339, 341 (N.Y. App. Div. 2002) (addressing whether government should protect private investment in coastal property by allowing proposed revetment that “like any ‘hard structure,’ will ultimately do more harm [to the public interest] than good”); DEAN, *supra* note 33, at 16 (noting that “shoreline stabilization [measures are] irreversible” and must be maintained indefinitely at an increasing cost to taxpayers); Houck, *supra* note 21, at 359-60; KAUFMAN & PILKEY, *supra* note 17, at 167 (economic impact of shore protection is that it increases need for additional protection and future costs). *See also* *Poster v. Strough*, 752 N.Y.S.2d 326, 339 (N.Y. App. Div. 2002) (holding that an administrative decision to deny landowner’s application for revetment permit on Long Island was not arbitrary and capricious). Besides being largely ineffective in the long term, some Corps projects on the coast can expose the federal government to liability under the Takings Clause of the Fifth Amendment of the United States Constitution. *E.g.*, *Applegate v. United States*, 35 Fed. Cl. 406 (1996) (holding that flooding and erosion of private property caused by a government project was a compensable taking).

⁸⁷ Beach replenishment involves shoring up the coast by building sand dunes and pumping sand from the ocean bottom offshore to the beachfront. Barnhizer, *supra* note 66, at 317. *See* DEAN, *supra* note 33, at 96 (noting that the Corps is the primary organizer of beach re-nourishment projects in the U.S.); Houck, *supra* note 21, at 367 (stating that the Corps is prepared to spend ten billion dollars on future beach re-nourishment projects).

⁸⁸ BUSH, *supra* note 15, at 81 (arguing that replenished beaches erode much more quickly than natural beaches, and the minimum cost of replacement is one million dollars per mile of shoreline); DEAN, *supra* note 33, at 99 (noting that no re-nourished East Coast beach north of Florida has lasted longer than five years); Donn, *supra* note 73, at 3A; Houck, *supra* note 21, at 359-60. In brief, beach re-nourishment efforts are so temporary because the equilibrium of the sand-sea system has been disturbed; the system responds by moving some of the newly deposited sand underwater. Humans perceive this natural adjustment by the system as rapid erosion. DEAN, *supra* note 33, at 96.

⁸⁹ *Id.* at 105-08. Government-funded projects make development on barrier islands lucrative. Federal funds support not only stabilization and beach re-nourishment projects, but also highway and bridge construction, water and sewage utilities, flood levees, flood insurance, and disaster relief. Houck, *supra* note 21, at 338-39 (“[B]arrier island development is real estate on welfare.”). *See* Barnhizer, *supra* note 66, at 295 (arguing that increased coastal development is “fueled and maintained largely by government ‘givings’”).

Not only is private property on the coast protected (at least temporarily) by federally-funded stabilization projects, it is essentially subsidized by American taxpayers.⁹⁰ This is due in large part to the fact that most private insurers will no longer provide flood insurance for high-risk coastal sites; therefore, many homes must be covered under the National Flood Insurance Program ("NFIP").⁹¹ Claims through this program from the 2005 hurricane season, which included the impact of Hurricane Katrina, are expected to exceed twenty-three billion dollars.⁹² This amount is more than the total payments for the preceding thirty-six years.⁹³ The NFIP will borrow much of that amount from the U.S. Treasury,⁹⁴ an entity that has serious budgetary challenges of its own. A vicious cycle of development, storm damage, subsidized re-building and temporary stabilization, and greater exposure of people and property to further storm damage results.⁹⁵ The current schemes of property law, environmental law, and land use regulation neither adequately protect the barrier islands as an essential natural resource shielding the coast, nor guard against this dangerous and expensive cycle.⁹⁶

⁹⁰ BUSH, *supra* note 15, at 3-4.

⁹¹ National Flood Insurance Program, 42 U.S.C. §§ 4001-4129 (2007). See Albert B. Crenshaw, *'Under-Bought' Flood Insurance Proves its Value*, WASH. POST, Sept. 4, 2005, at F5 (stating that a controversial program encourages home construction on sites that should not be developed).

⁹² RAWLE O. KING, CONG. RESEARCH SERV., ORDER CODE RS22394, NATIONAL FLOOD INSURANCE PROGRAM: TREASURY BORROWING IN THE AFTERMATH OF KATRINA, at CRS-3 (2006), available at <http://ncseonline.org/NLE/CRSreports/06Jul/RS22394.pdf>.

⁹³ *Id.*

⁹⁴ Barnhizer, *supra* note 66, at 333; Donn, *supra* note 73, at 3A (noting that the federal government has repeatedly subsidized rebuilding in hurricane-prone areas).

⁹⁵ KAUFMAN & PILKEY, *supra* note 17, at 143. See DEAN, *supra* note 33, at 150 (listing billions of dollars in costs associated with each major hurricane); Barnhizer, *supra* note 66, at 296 (arguing that government entities spend millions annually to repeatedly repair unsustainable coastal development). In fact, forty percent of all payments made by the NFIP are repeat claims, that is, claims made on previously storm-damaged properties. Allen G. Breed, *Rebuilding in Storm Belt Defies Forecasts*, DETROIT NEWS, May 21, 2006, at 9A. By pouring taxpayers' funds into coastal areas for development, disaster relief, and rebuilding after storms, the NFIP and the Federal Emergency Management Agency ("FEMA") actually enable future coastal disasters. See VanTine & Zezula, *supra* note 77, at 311-12 n.66.

⁹⁶ Houck, *supra* note 21, at 333 ("The cases . . . reveal that, no matter what environmental laws say, they are often eclipsed by subsidies that make the attainment of legislated goals all but impossible."). See DEAN, *supra* note 33, at 58 (arguing that despite laws prohibiting them, hard stabilization measures continue to "proliferate" on the coast). A complete discussion of the effectiveness of statutes and regulations impacting the barrier islands is

The Virginia barrier islands are the exception to the pattern of costly development and rebuilding described above.⁹⁷ The islands are, with the exceptions of Chincoteague and Cedar, undeveloped.⁹⁸ Therefore, they have migrated and maintained themselves.⁹⁹ While some islands have disappeared into the sea, others have grown or emerged.¹⁰⁰ The preservation of the Virginia barrier islands is largely due to the fact that they are almost wholly owned by TNC, the federal government, or the Commonwealth of Virginia and development on them is prohibited.¹⁰¹ Whether this approach is appropriate for all of the barrier islands of the United States is an open question, which will be further explored in the Conclusion. Despite their natural state and consequent relative safety as a precious natural resource, the Virginia barrier islands have been the subject of several real property cases due to their tendency to move.¹⁰²

III. THE STRUGGLE TO APPLY TRADITIONAL PRINCIPLES OF LAND OWNERSHIP TO BARRIER ISLANDS

The Virginia barrier islands defy traditional notions of land. Even the dictionary definition of land, “[t]he solid ground of the earth, especially as distinguished from the sea,”¹⁰³ does not seem to include islands that migrate, roll, merge, and sometimes disappear altogether. The courts’ struggles in deciding cases involving property disputes on these islands illustrate the challenges associated with applying traditional principles of land ownership to the barrier islands.¹⁰⁴

beyond the scope of this paper. However, the federal, state, and local laws pertinent to land use regulation on the Virginia barrier islands are listed in Appendix A, which also includes citations to commentary concerning the lack of effectiveness of such laws.

⁹⁷ DEAN, *supra* note 33, at 150; KAUFMAN & PILKEY, *supra* note 17, at 143; Barnhizer, *supra* note 66, at 296; VanTine & Zezula, *supra* note 77, at 311-12.

⁹⁸ See *supra* note 28 and accompanying text; see also BADGER & KELLAM, *supra* note 31, at xi, 97-98.

⁹⁹ KAUFMAN & PILKEY, *supra* note 17, at 24, 96-100; VanTine & Zezula, *supra* note 77, at 306, 311.

¹⁰⁰ Davis, *supra* note 20, at 222; MARINER, OFF 13, *supra* note 28, at 65; WHITELAW, *supra* note 31, at 213-14.

¹⁰¹ Warner, *supra* note 27, at xiii.

¹⁰² See, e.g., Nature Conservancy v. Machipongo Club, 419 F. Supp. 390, 396-97 (E.D. Va. 1976), *aff'd in part, rev'd in part*, 571 F.2d 1294, *modified on reh'g*, 579 F.2d 873 (4th Cir. 1978) (per curiam); Bradford v. Nature Conservancy, 294 S.E.2d 866 (Va. 1982).

¹⁰³ AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 735 (1976).

¹⁰⁴ See Bradford, 294 S.E.2d 866; see also Machipongo Club, 419 F. Supp. at 396-97.

A. *The Case of Bradford v. Nature Conservancy*

In the seminal case of *Bradford v. Nature Conservancy*,¹⁰⁵ the Supreme Court of Virginia applied real property law to a barrier island and interpreted several old Virginia statutes concerning seashore ownership.¹⁰⁶ Hog Island “is approximately six miles long and ranges in width from one mile near the northern end to an estimate 300 yards at the southern end.”¹⁰⁷ Sportsmen used Hog Island for hunting and fishing.¹⁰⁸ The owner of most of Hog Island, TNC, attempted to deny these hunters access to the island for hunting and fishing.¹⁰⁹ TNC purchased many of the Virginia barrier islands to preserve the ecologically valuable area, and was concerned that the sportsmen’s activities would disrupt sensitive wildlife species and their habitat.¹¹⁰ The sportsmen and their predecessors, as well as area watermen, had freely used Hog and other Virginia barrier islands for centuries and believed that it was their natural right to do so.¹¹¹ Specifically at issue in the case were the marshes, the Atlantic beaches, and two unimproved roads (tracks) on the island.¹¹²

The issues in *Bradford* were heard in both the state and federal court systems. In the federal court action filed by TNC, *Nature Conservancy v. Machipongo Club*, TNC claimed that defendant sportsmen’s club and its members had committed trespass on TNC’s Hog Island property.¹¹³ The state court action, *Bradford v. Nature Conservancy*, was filed by individual members of the sportsmen’s club, seeking a declaration that they had the right to hunt, fish, and use the roads on Hog Island.¹¹⁴ In 1978, the Fourth Circuit remanded *Machipongo Club* to the Eastern District of Virginia with instructions to stay the decision until *Bradford* was decided by the Supreme Court of Virginia and the state court had interpreted the Virginia statutes related to ownership of shores and marshes.¹¹⁵

¹⁰⁵ 294 S.E.2d 866.

¹⁰⁶ *Id.* at 866-76.

¹⁰⁷ *Id.* at 869.

¹⁰⁸ *Id.* at 870.

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.* at 871; Interview with Barry Truitt, Historian, Virginia Coast Reserve, The Nature Conservancy, in Nassawadox, Va. (Sept. 21, 2005).

¹¹² *Bradford*, 294 S.E.2d at 869-70; *Machipongo Club*, 419 F. Supp. at 395.

¹¹³ *Machipongo Club*, 419 F. Supp. at 395.

¹¹⁴ *Bradford*, 294 S.E.2d at 870.

¹¹⁵ *Machipongo Club*, 579 F.2d at 873.

To reach its decision, which TNC officials still refer to as the case in which the court “split the baby,”¹¹⁶ the state court interpreted several Virginia statutes: the 1780 Reserved Commons Act,¹¹⁷ the 1819 Low Water Mark Act,¹¹⁸ and the 1888 Eastern Shore Commons Act.¹¹⁹ Ultimately, the court held that the marshes were a common in which TNC had no interest.¹²⁰ Any part of the Atlantic beach originally granted after 1780 was also a common in which TNC had no interest, but TNC would have title to parts of the beach stemming from a grant prior to 1780, subject to the public’s right to fish, fowl, and hunt there.¹²¹ However, the sportsmen had no right to use the roadways on the island.¹²²

While the court seemed to struggle with both the language of the foregoing statutes and their joint interpretation,¹²³ the nature of Hog

¹¹⁶ Interview with Stephen Parker, *supra* note 69.

¹¹⁷ At the time that *Bradford* was decided, the 1780 Act read, in part, as follows:

All the beds of the bays, rivers, creeks and the shores of the sea within the jurisdiction of this Commonwealth, and not conveyed by special grant or compact according to law, shall continue and remain the property of the Commonwealth of Virginia, and may be used as a common by all the people of the State for the purpose of fishing and fowling, and of taking and catching oysters and other shellfish, subject to the provisions of Title 28.1, and any future laws that may be passed by the General Assembly.

Bradford, 294 S.E.2d at 873 n.5 (citing VA. CODE § 62.1-1 (1950), *repealed by* Acts 1992, c. 836). Today, similar statutory language can be found at VA. CODE ANN. § 28.2-1200 (2007).

¹¹⁸ At the time that *Bradford* was decided, the 1819 Act read, in relevant part, as follows:

[T]he limits or bounds of the several tracts of land lying on such bays, rivers, creeks and shores, and the rights and privileges of the owners of such lands, shall extend to the mean low-water mark, but no farther, unless where a creek or river, or some part thereof, is comprised within the limits of a lawful survey.

VA. CODE § 62.1-2, *repealed by* Acts 1992, c. 836. Today, similar statutory language can be found at VA. CODE ANN. § 28.2-1202 (2007).

¹¹⁹ At the time that *Bradford* was decided, the 1888 Act read, in part, as follows:

All unappropriated marsh or meadowlands lying on the Eastern Shore of Virginia, which have remained ungranted, and which have been used as a common by the people of this State, shall continue as such common, and remain ungranted. Any of the people of this State may fish, fowl, or hunt on any such marsh or meadowlands.

Bradford, 294 S.E.2d at 874 n.5 (citing VA. CODE § 41.1-4, *repealed by* Acts 1995, c. 850). Today, similar statutory language is located at VA. CODE ANN. § 28.2-1502 (2007).

¹²⁰ *Bradford*, 294 S.E.2d at 875.

¹²¹ *Id.* at 875-76.

¹²² *Id.*

¹²³ Ultimately, the court interpreted the three old Virginia statutes at issue as follows: grants of marshland from the state after 1888 are void; with respect to the shore, land-owners own only to the high water mark if the original grant from the state was made

Island itself added to the complexity of the case.¹²⁴ As a threshold matter, the court was forced to decide what parts of the property in dispute constituted “marsh and meadowlands,”¹²⁵ such that the 1888 Act would apply,¹²⁶ and what parts were “shores”¹²⁷ of the sea, such that the 1780 and 1819 Acts would apply.¹²⁸ In addition, other parts of barrier islands are classified as uplands, such as the roads on Hog Island, to which none of these statutes applies.¹²⁹ Yet, the areas of a barrier island are not necessarily distinct; they merge gradually together without clear definition.¹³⁰ Moreover, as noted previously, one type of topography can become another quickly, with the

after 1873; landowners do not have title to the land between the high and low water marks if the grant was made after 1780 and the lands had been used as a common, unless the grant was made during the Reconstruction Period (1865-71); and grants of the shore made prior to 1780 are valid and extend to the low water mark, “subject to the public’s right to fish, fowl, and hunt” between the high and low water marks. *Id.* at 870-74. A complete discussion of the issues raised by the *Bradford* court’s joint interpretation of these statutes is beyond the scope of this paper but the technicalities involved have been thoughtfully explored by other commentators. *See, e.g.*, Denis J. Brion, *The Unresolved Structure of Property Rights in the Virginia Shore*, 24 WM. & MARY L. REV. 727, 759-64 (1983); Szablewicz, *supra* note 4, at 380-86 (summarizing the *Bradford* court’s interpretations of the 1780, 1819, and 1888 Acts and noting that the effect of the 1819 Act on lands not historically used as a common remains unclear); *see also* Kraft v. Burr, 476 S.E.2d 715, 717 n.3 (Va. 1996) (showing a seemingly confused court, which states that appellant misapplied *Bradford* and concludes that the *Bradford* holding means that subaqueous beds of navigable waters were subject to the public’s right to fish, fowl, and hunt only if such beds had not been granted by the Crown prior to the Revolution).

¹²⁴ *Bradford*, 294 S.E.2d at 870-74.

¹²⁵ *Id.* at 872.

¹²⁶ The *Bradford* court held that this statute only applies to lands historically used as commons. *Id.* at 871. Since this issue of fact is sometimes difficult to prove, the precedent set in *Bradford* is likely to complicate future analyses in barrier island cases involving interpretation of the 1888 Act. *See* Szablewicz, *supra* note 4, at 383-84 (noting that owners must conduct a title search). In the companion Hog Island case in federal trial court, the judge relied on testimony of folklore about barrier island life to decide the issue of whether portions of the islands had historically been used as commons. *Machipongo Club*, 419 F. Supp. at 403.

¹²⁷ *Bradford*, 294 S.E.2d at 873.

¹²⁸ *Id.* at 872 n.4. In Virginia, “the shore” and “the beach” “are defined as the area between the ordinary high water and the ordinary low water marks.” *Id.* States vary considerably with respect to ownership of tidelands and public versus private property rights on the shore. KAUFMAN & PILKEY, *supra* note 17, at 230-32, 248 (noting that there is no definitive decision on what constitutes high water mark); Szablewicz, *supra* note 4, at 380.

¹²⁹ *See* Szablewicz, *supra* note 4, at 383.

¹³⁰ *See* KAUFMAN & PILKEY, *supra* note 17, at 230 (explaining that the law categorizes four different parts of a beach and fails to recognize that they are components of one dynamic system).

island rolling over itself so that the inland side marsh becomes Atlantic shore in a relatively short period of time.¹³¹ Therefore, deciding what laws apply to a barrier island parcel may be a serious challenge for a court, and ultimately an arbitrary choice. This is one of the ways in which barrier islands defy the standard application of property law principles.

Another challenge for the *Bradford* court involved whether the plaintiffs should be allowed to use the beach access road on Hog Island.¹³² This unimproved road (referred to as a trail by witnesses) was on the north side of the island and ran from the site of an old U.S. Coast Guard Station to the Atlantic beach.¹³³ Since 1935, when the deed conveying the parcel to the United States described the beach access road (as a “50’ Right of Way about 780’ to Higher Beach”)¹³⁴ and included it on a plat, Hog Island had changed shape considerably.¹³⁵ While the southern end of the island had virtually disappeared, the northern end had accreted,¹³⁶ requiring the beach access road to be lengthened considerably beyond 780 feet in order for it to reach to the sea.¹³⁷ The federal trial court in *Machipongo Club* also addressed this issue, although its decision was not

¹³¹ DEAN, *supra* note 33, at 34; KAUFMAN & PILKEY, *supra* note 17, at 220-21; *see generally* Trivedi, *supra* note 14.

¹³² *Bradford*, 294 S.E.2d at 869.

¹³³ *Id.*

¹³⁴ *Machipongo Club*, 419 F. Supp. at 399.

¹³⁵ *Id.* at 400-01.

¹³⁶ *Id.* Accretion is the increase of riparian land by the gradual deposit of solid material, so that what was once covered by water becomes dry land. *Steelman v. Field*, 128 S.E. 558, 559 (Va. 1925). According to the Director of the Virginia Coastal Reserve of TNC at the time that the *Bradford* and *Machipongo Club* cases were pending, the manner in which the north end of the island grew was a significant factual issue. Interview with Gerard J. Hennessey, Past Director, Va. Coast Reserve, The Nature Conservancy, in Exmore, Va. (Oct. 7, 2005). This controversy developed because in order for an owner of riparian land such as TNC to gain title to new deposits of land, the alluvial deposit must be “gradual and imperceptible.” *Carr v. Kidd*, 540 S.E.2d 884, 890-91 (Va. 2001). Such accretion is contrasted with avulsion, which is the “sudden and perceptible” gain or loss of “land by the action of water.” BLACK’S LAW DICTIONARY 137 (6th ed. 1990); *Georgia v. South Carolina*, 497 U.S. 376, 404 (1990). As the Supreme Court stated in *Georgia v. South Carolina*, it is sometimes difficult to determine whether accretion has occurred or whether land mass change was the result of avulsion. *Id.* For example, on a barrier island, proof that new deposits resulted from accretion would likely need to be made with the introduction of aerial photographs, which may not be available for a particular parcel over the period of time necessary to demonstrate a gradual, imperceptible increase in land mass. Interview with Gerard J. Hennessey, *supra*.

¹³⁷ *Machipongo Club*, 419 F. Supp. at 400.

binding on the Virginia Supreme Court.¹³⁸ The federal court held that the road was an easement and that the Coast Guard had obtained the benefits of accretion; thus, the Coast Guard possessed a lengthened easement and had transferred the longer easement to the Coast Guard's successor in title, the sportsmen's club.¹³⁹ However, on appeal, the Fourth Circuit reversed this decision, "since the parties [the Coast Guard and the Machipongo Club in 1966], before the conveyance, considered a description which included the right-of-way but for undisclosed reasons employed a description which omitted it."¹⁴⁰ One has to wonder if the "undisclosed reason"¹⁴¹ was that the island had changed so much, and the trail to the sea consequently longer and so markedly different than the description written thirty years earlier, that the parties simply decided not to describe a moving target, realizing that any legal description would soon be inaccurate.

Complicating the matter further was the fact that this road went to the shores of the sea, and was perhaps partially on the commons, depending upon when the land had been originally granted.¹⁴² Of course, determining when a particular section of shoreline was originally granted for purposes of determining whether that section is held in common or privately could be practically impossible, given that the modern shoreline of a barrier island appears nothing like it did, and is not located where it was, at the time of the original grant from the Commonwealth.¹⁴³

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Nature Conservancy v. Machipongo Club*, 571 F.2d 1294, 1298 (4th Cir. 1978), *modified on reh'g*, 579 F.2d 873 (4th Cir. 1978) (per curiam).

¹⁴¹ *Id.*

¹⁴² See *supra* notes 116-31 and accompanying text. According to the Director of the Virginia Coastal Reserve of TNC at the time that the two Hog Island cases were pending, significant factual issues existed as to where the road (trail) started, whether it was on inter-tidal property, and when such inter-tidal property was originally granted. Interview with Gerard J. Hennessey, *supra* note 136. Ultimately, these facts were not discussed in the courts' opinions; however, given the rules set out in *Bradford*, similar factual situations are likely to raise problems in future cases involving barrier island property. See *City of Virginia Beach v. Nala Corp.*, 53 Va. Cir. 309, 331 (2000) (concluding that few grants from Crown or Commonwealth passed title to land between high- and low-water marks).

¹⁴³ *Machipongo Club*, 419 F. Supp. at 403 ("the configuration of . . . [Hog] island has been constantly changing"); Szablewicz, *supra* note 4, at 383-84 (discussing difficulties that wetland owners have in determining what they own after *Bradford* and noting reluctance of title insurance companies to cover riparian tracts); Interview with Barry Truitt, *supra* note 111 (noting that under *Bradford*, TNC owns at least to the high water mark but that ownership of the Atlantic beaches in Virginia is a significant issue, since it is sometimes impossible to conduct a complete title search due to unrecorded and lost deeds).

The Virginia Supreme Court ultimately held that the sportsmen had no right to use the beach access road.¹⁴⁴ With respect to the other road on Hog Island, the Virginia Supreme Court found that the sportsmen had no right to use this north-south road.¹⁴⁵ At trial, one theory of the sportsmen's club members who owned land on Hog Island was that they had an easement of necessity in either the north-south road or the beach in order to get to their property.¹⁴⁶ However, the court held that none of the plaintiffs produced evidence in support of this claim and only one actually produced evidence of the location of his land on Hog Island.¹⁴⁷ This example illustrates the hurdles one must overcome to prove one's property rights on a barrier island: the first is producing evidence that the property in question *exists* and the second is proving *where* it is located.¹⁴⁸

Much of the *Bradford* opinion involves discussion of the commons, since the Virginia Supreme Court was interpreting both the 1780 Act and the 1888 Act, which each addressed coastal land held in common.¹⁴⁹ Indeed, the current versions of these statutes create commons as the default classification of marshes, meadowlands, and shores of the sea.¹⁵⁰

¹⁴⁴ *Bradford*, 294 S.E.2d at 875-76.

¹⁴⁵ *Id.* at 875; *Machipongo Club*, 419 F. Supp. at 396-97.

¹⁴⁶ *Bradford*, 294 S.E.2d at 875 n.10.

¹⁴⁷ *Id.*

¹⁴⁸ Because there are still some parcels of property on Hog Island that are owned privately by individuals, TNC has had occasion to deal with such individuals and to conduct research on island property lines. Confusion remains today about property ownership and where parcels are located. Some individuals have offered to sell TNC property that is underwater or that TNC had already acquired; other individuals are unaware that they own property. Interview with Barry Truitt, *supra* note 111. Some are still paying real property taxes on parcels that have been underwater for years. Interview with Jerry Doughty, Historian, The Barrier Islands Center, in Machipongo, Va. (Sept. 28, 2005). Historian Barry Truitt, an employee of TNC since 1976, conducted extensive research in order to create a plat map of Hog Island several years ago and for many of the parcels ("about twenty-five percent of the time"), he was unable to determine the location of the property line, despite his familiarity with the island and its history. Interview with Barry Truitt, *supra* note 111.

¹⁴⁹ See *supra* notes 117, 119 and accompanying text. The *Bradford* court emphasized that the grant of any common lands was void. 294 S.E.2d at 873.

¹⁵⁰ The modern version of the 1888 Act reads, in part:

All ungranted shores of the sea, marsh and meadowlands shall remain the property of the Commonwealth. Such ungranted marsh and meadowlands which have been used as a commons by the people of the Commonwealth shall continue as a commons for the purpose of fishing, fowling, hunting, and the taking and catching of oysters and other shellfish. All ungranted shores of the sea may be used as a commons for the purpose of fishing, fowling, hunting, and the taking and catching of oysters and other shellfish.

The notion of the commons is very powerful on the Eastern Shore of Virginia in general, and the barrier islands in particular.¹⁵¹ As the history of Hog Island demonstrates, property lines are often vague or not respected.¹⁵² Over the years, islanders and sportsmen have felt free to use the resources of the marshes and beaches for hunting, fishing, and traveling.¹⁵³ Historically, cows and sheep held as livestock on Hog and Wallops Islands roamed freely and were not restricted to their owners' pastures.¹⁵⁴ While TNC's ownership of many of the Virginia barrier islands has come to be respected recently, that was not always so; even today, some Eastern Shore residents use TNC property for recreational purposes, even where TNC has strict "no use" policies.¹⁵⁵

Clearly, there has been and remains a blurring of the public-private distinction on the barrier islands:¹⁵⁶ defined private property lines

VA. CODE ANN. § 28.2-1502 (2007). Similarly, the modern version of the 1780 Act reads, in part:

All the beds of the bays, rivers, creeks and the shores of the sea within the jurisdiction of the Commonwealth, not conveyed by special grant or compact according to law, shall remain the property of the Commonwealth and may be used as a common by all the people of the Commonwealth for the purpose of fishing, fowling, hunting, and taking and catching oysters and other shellfish.

VA. CODE ANN. § 28.2-1200 (2007).

¹⁵¹ See *Nala Corp.*, 53 Va. Cir. at 328 (stating that the ancient doctrine of "commons" remains a vital part of Virginia law).

¹⁵² *Machipongo Club*, 419 F. Supp. at 397.

¹⁵³ *Bradford*, 294 S.E.2d at 869-70; *Machipongo Club*, 419 F. Supp. at 397, 403.

¹⁵⁴ *Bowden v. United States*, 200 F.2d 176, 177 (4th Cir. 1952). In *Bowden*, the United States Court of Appeals for the Fourth Circuit held that the plaintiffs, former residents of Wallops Island, failed to prove their negligence case against the federal government after the Bowdens' sheep disappeared following the government's spraying of the island with DDT. *Id.* at 178. The Bowdens had attempted to round up and remove their sheep from Wallops Island after the government occupied it in 1946, but were unsuccessful in their efforts; the sheep grazed freely on the northern two-thirds of the rather large (approximately two thousand acre) island. *Id.* at 177. "It is impossible to show what happened to the sheep," reasoned the Fourth Circuit, "It is difficult to understand why anyone owning sheep valued at . . . \$8,500 . . . should have permitted them to remain on the Island . . ." *Id.* at 178. The *Bowden* case is thus a perfect example of the local custom of open grazing on barrier islands (a community property practice), and the blurred distinction between public and private property coming into direct conflict with traditional principles of real property rights (where boundary lines and control over one's property are of the utmost importance).

¹⁵⁵ See THE VIRGINIA COAST RESERVE, *supra* note 28; Interview with Barry Truitt, *supra* note 111.

¹⁵⁶ *Machipongo Club*, 419 F. Supp. at 397 ("[The] utopian approach to land ownership [on Hog Island] blurred the concept of public and private land on the uninhabited portions of the island.").

do not seem to exist and the islands are viewed as a valuable public resource.¹⁵⁷ Perhaps they should be. If so, another question may be raised: how should society protect the numerous wildlife species that also need the islands for their habitat? While TNC has taken matters into its private hands by purchasing most of the barrier island habitats in Virginia,¹⁵⁸ the other barrier islands in the United States have not been so aggressively protected by private (or even public) action. The conclusion of this paper suggests an alternative theory for regarding the barrier islands as a special public resource.

B. Other Virginia Cases

Apart from *Bradford*, courts in Virginia have several times applied principles of property law to the barrier islands. In one significant case, *Steelman v. Field*, the Supreme Court of Appeals of Virginia employed and justified the law of accretion.¹⁵⁹ Samuel Field, the original plaintiff, owned the southern end of Assateague Island, a barrier island that had accreted so much since 1859 that 900 acres had been added to the Tom's Cove area at the southern tip of the island.¹⁶⁰ Field claimed that he owned the accreted property to the low water mark and that the Commonwealth of Virginia had no right to assign a portion of his property to another for oyster planting grounds.¹⁶¹ The Commonwealth had previously held title to the property at issue (as public waters), which was assignable as oyster grounds under Virginia law.¹⁶² The court applied the rule of accretion and held that Field, as riparian owner, gained title to the land added to his property by the gradual action of the water and that "[t]he title of the Commonwealth to the public waters likewise shifts with the shifting sands, but that which is lost at one place is sometimes gained at another."¹⁶³

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 394.

¹⁵⁹ *Steelman v. Field*, 128 S.E. 558, 559-60 (Va. 1925).

¹⁶⁰ *Id.* at 559.

¹⁶¹ *Id.* Field was able to trace his title back to the original grant from the Crown in 1687. *Id.* Thus, even under the *Bradford* rule established nearly sixty years later, Field likely had good title to the low water mark. See *supra* note 123 and accompanying text.

¹⁶² *Id.*

¹⁶³ *Id.* at 560. This seems like a rather nonchalant way to justify Field's gain (and the Commonwealth's loss) of nine hundred acres of property. The court discussed the policy behind the rule of accretion at some length, noting that a riparian owner is also apt to lose soil by the gradual encroachment of water but that the real reason for the rule of accretion is to preserve the fundamental riparian right of access to water. *Id.*

Therefore, the oyster inspector acted as a trespasser in attempting to assign Field's property and could be enjoined from doing so.¹⁶⁴

Most landowners on the barrier islands and along the Virginia coast have not been as fortunate as Samuel Field. Not only have they frequently lost their property to the sea, but they have also had difficulty proving the boundaries of property that remains above water.¹⁶⁵ For example, in *Steelman v. Lafferty*, the property in dispute was forty acres on Godwin's Island, a barrier island in Northampton County, Virginia, which Lafferty had purchased at a tax sale.¹⁶⁶ Although the jury had found

¹⁶⁴ *Id.*

¹⁶⁵ This is true both historically and recently. For example, Bone Island was purchased at a public auction in 1889; reference to an 1877 grant indicated that the island comprised 340 acres. WHITELAW, *supra* note 31, at 213. Lots on Bone Island were later sold by the Bone Island Development Association, but erosion was so severe that there was not much of the island left by the 1950's and it is mostly underwater today. *Id.* A patent was issued for the four hundred acres constituting Prout's Island in 1687 but a channel cut through the island in first half of the nineteenth century; subsequently, the north part of Prout's disappeared and the south part became Cobb's Island, which was the site of a popular resort in the late 1800's. *Id.* at 214. Ultimately, the development on Cobb's was destroyed by storm-related damage and the island was abandoned. BADGER & KELLAM, *supra* note 31, at 4; *The Extinction of Cobb's Island*, BALT. SUN, Oct. 20, 1896, reprinted in SEASHORE CHRONICLES, *supra* note 27, at 131-33; WHITELAW, *supra* note 31, at 214. See generally THE VIRGINIA COAST RESERVE, *supra* note 28, at 81-84 (Virginia barrier islands have changed size and shape several times, divided, and fused); WHITELAW, *supra* note 31 (tracing title to Virginia barrier islands back to original patents and states the significant changes in acreage of the islands, often in relatively short periods of time). Several years ago, there was a dispute over property on Adams' Island when a landowner attempted to prove title to island property that had migrated considerably and merged with Fisherman Island, which is owned by the federal government. The trial judge held against the private landowner because there was no way to prove that "the land here [on Fisherman] was the same land that was over there" on Adams' Island, once owned by claimant. Interview with Baxley T. Tankard, Att'y, in Franktown, Va. (Oct. 23, 2005). A major issue exists today for many coastal property owners in Virginia Beach; after the severe hurricane of 1933, "blocks of waterfront property had become blocks of underwater property . . . and fish still swim over roughly 100 lots where people intended to live." Joanne Kimberlin, *Lots to Hope for at the Beach*, VIRGINIAN-PILOT, Nov. 12, 2005, at A1. Although many of the landowners are still paying property taxes on their lots (hoping that the sea will one day give it back), it is doubtful whether they even own it; if the land is intertidal property, it is probably the commons, and if it is beneath navigable water, it cannot be privately owned. *Id.* at A1, A13. See *supra* notes 123, 142; see also *United States v. Alaska*, 521 U.S. 1, 5-6 (1997) (holding that the federal government has paramount sovereign rights in submerged lands seaward of low-water mark; pursuant to Submerged Lands Act, 43 U.S.C. §§ 1301-1356a (2000), states have title to submerged lands beneath a 3-mile belt of the territorial sea).

¹⁶⁶ *Steelman v. Lafferty*, 71 S.E. 524, 524 (Va. 1911).

that Lafferty should prevail in his action to eject the defendant from the oyster planting ground appurtenant to his island parcel, the Virginia Supreme Court of Appeals reversed and remanded the decision to the trial court.¹⁶⁷ The court held that to prevail, Lafferty would have had to establish title to the appurtenant land and clearly locate his boundaries, which Lafferty failed to do.¹⁶⁸ The tax deed, which referenced a survey that had been lost, described the property as “Godwin’s Island, containing forty-three and three-fourths acres, and mentioned in the said report of the said county surveyor, as surrounded by New Inlet, Wreck Island Creek, Ship Shoals Inlet, and Godwin’s Island Creek.”¹⁶⁹ Although the court made much of the missing survey, which allegedly specified the metes and bounds of the real estate,¹⁷⁰ it would have been over twenty years old¹⁷¹ and likely to be inaccurate due to migration. Furthermore, and ironically, the witnesses for both parties at trial (which included the county surveyor himself) agreed “that the lands claimed by [Lafferty] cannot be located” and yet the trial court still held for Lafferty.¹⁷² Probably due to their understanding of the nature of barrier islands, the jurors were willing to accept the property description as sufficient.

In a similar case—one relied upon by the *Lafferty* court—deeds conveying property on Chincoteague Island in Accomack County failed for indefiniteness.¹⁷³ Bunting had brought an action seeking to eject Merritt from 24.62 acres in Bunting’s possession, which Merritt had obtained in a lease from the Commonwealth as oyster planting grounds.¹⁷⁴ In order to prove his right to possess the property in dispute, Little Assateague Bay, Bunting had to prove his ownership of the lands adjacent to the Bay.¹⁷⁵ Although Bunting introduced an unrecorded deed from 1878 as evidence, the court held that Bunting did not prove his title.¹⁷⁶ The court reasoned that the grant of property in the deed was too vague because it did not “show where the land intended to be granted is located, except that it is on Chincoteague Island, and embraced within certain

¹⁶⁷ *Id.* at 524-25.

¹⁶⁸ *Id.* at 525.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at 524.

¹⁷¹ The tax deed referencing the surveyor’s report was dated 1890. *Id.* at 524-25.

¹⁷² *Id.*

¹⁷³ *Merritt v. Bunting*, 57 S.E. 567, 568 (Va. 1907).

¹⁷⁴ *Id.* at 567.

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 567-68.

courses and distances.”¹⁷⁷ There was “no starting point or ending point” stated.¹⁷⁸ Interestingly, the county surveyor testified at trial (for Merritt) that he located the land embraced within Bunting’s grant, but when Bunting went with him to Little Assateague Bay and told him where the original surveyor had started, he was unable to reproduce the original survey.¹⁷⁹ “[I]f it had started there,” the surveyor testified, “laying off the grant, and running the courses and distances given in the grant, a great part of the land would have been in said bay”¹⁸⁰ To geologists and others who understand the migration of the barrier islands of the East Coast, it is no surprise that the land was not where it was described thirty years before.¹⁸¹ However, Virginia’s Supreme Court of Appeals forced land-based rules of property ownership onto a moving island, and found that Bunting’s grant was not sufficient (even if it had been recorded) “to charge [Merritt] with notice of any right in Bunting to the land in controversy.”¹⁸²

¹⁷⁷ *Id.* at 568.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ KAUFMAN & PILKEY, *supra* note 17, at 92 (noting that horizontal changes in shape of barrier islands conflict with unchanging nature of property lines).

¹⁸² *Merritt*, 57 S.E. at 568. The Virginia courts are not so unforgiving as to omit extrinsic evidence as unnecessary in ascertaining what property is conveyed and where it is located. Rather, the property description in a deed must be sufficient to afford the court, with the aid of extrinsic evidence, the means of determining what parcel is conveyed and where it is located. *Firebaugh v. Whitehead*, 559 S.E.2d 611, 615 (Va. 2002). *See also* *French v. Clinchfield Coal Corp.*, 198 S.E. 503, 503 (Va. 1938) (noting that the fact that the “courses and distances set out in the original survey” under an 1859 patent “were not in exact accord with the courses and distances between the natural objects named in the description by metes and bounds” did not void the grant). However, the standard established by the Virginia Supreme Court for constructive notice in a deed is probably too high for many barrier island property owners; to be valid as to subsequent purchasers, the deed:

must afford . . . the means of not only ascertaining with accuracy what property is conveyed or affected by the instrument registered or recorded and where it is, but its language must be such that, if a subsequent purchaser or incumbrancer should examine the instrument itself, he would obtain thereby actual notice of all the rights which were intended to be created or conferred by it

Shaheen v. County of Mathews, 579 S.E.2d 162, 172 (Va. 2003). Given the tangled set of property laws and regulations that apply to the coast, it would be difficult to draft a deed that provided an accurate means for locating land in motion that and also provided actual notice of all the rights conveyed. The 1970 deed conveying 1,422 ½ acres of Hog Island to TNC provides an example of how barrier island property is typically described:

[B]eginning at a point on the Churn boundary line, marked by a cedar stub low to the ground where marsh joins high land; thence S. 70° 40'

More recently, in *Commonwealth v. Morgan*, the Supreme Court of Virginia confirmed that a patent could lawfully convey the bottom of a navigable waterway if such submerged land was within known boundaries.¹⁸³ Although the oyster grounds in dispute in *Morgan* were not appurtenant to a barrier island but were under a tributary of the Rappahannock River in Lancaster County,¹⁸⁴ the court generalized its decision to apply to property surrounded by sea as well.¹⁸⁵ For barrier island property, however, the challenge is proving those “boundaries claimed,” a question of fact emphasized by the *Morgan* court.¹⁸⁶ Importantly, a resource without a boundary cannot be subject to principles of property law because “there is nothing objective from which others can be excluded.”¹⁸⁷

As sea level continues to rise at a faster rate,¹⁸⁸ the struggles to apply laws regarding the ownership and use of real property to the barrier islands and coastal property will only become more frequent and more poignant.¹⁸⁹ For example, in the recent case of *Jenkins v. Bay House*

E. 38 ch. to a point on the shore line of the Atlantic Ocean . . . thence following shore line . . . [courses and distances stated] following line of low water mark . . . thence leaving George's Stake Creek, S. 2° ¾ W. 88.50 ch. across marsh in a straight line to the point of beginning with its appurtenances.

167 Northampton County Deed Book 167 (1970) (on file at Northampton County Courthouse). The deed then references a map produced in a 1901 survey, which has the same beginning point described in the 1970 deed. 3 Northampton County Deed Book 105 (1901). Clearly, the 1970 deed simply copied the previous property description, which seems absurd, given the facts that seventy years later (and certainly at present), the Churn boundary line would be likely impossible to locate, the cedar stub would be long gone, and the line where marsh meets high land may well be beach front property. See *supra* notes 58, 148 and accompanying text. Under the standards establishing the validity of deeds in *Lafferty*, *Bunting*, *Firebaugh*, and *Shaheen*, it appears that TNC's deed for Hog Island could fail for indefiniteness.

¹⁸³ *Commonwealth v. Morgan*, 303 S.E.2d 899, 901 (Va. 1983).

¹⁸⁴ *Id.* at 899.

¹⁸⁵ *Id.* at 902.

¹⁸⁶ *Id.* at 901 n.3.

¹⁸⁷ Reed, *supra* note 3, at 496.

¹⁸⁸ See *supra* note 60 and accompanying text.

¹⁸⁹ See KAUFMAN & PILKEY, *supra* note 17, at 251 (arguing that since we cannot confine or distribute its shifting surfaces, it is time to agree that coastal real property “is owned by none of us and all of us”); Kimberlin, *supra* note 165, at A1, A13. While this article focuses on the application of traditional land ownership doctrines to the Virginia barrier islands, courts in other jurisdictions have met with similar challenges in their attempts to apply property laws and regulations to barrier islands along the East and Gulf Coasts of the United States. Appendix B contains a list of significant court decisions involving the application of property law and land use regulation principles to barrier islands outside of the Commonwealth of Virginia.

Associates, the Supreme Court of Virginia considered whether a landowner had title to property that formerly was the bottom of his inland pond, but which had become the bottom of a navigable waterway (the Chesapeake Bay) due to land movement and submersion.¹⁹⁰ In this case, Bay House Associates had acquired the subject property in Northumberland County, which included the submerged land beneath a pond.¹⁹¹ The pond was originally separated from the Chesapeake Bay by an isthmus but “in recent years,” an “opening” in the isthmus” developed and the former pond became connected to the Chesapeake Bay.¹⁹² Bay House’s neighbors proceeded to construct piers extending from their property to the former pond, claiming that they had riparian rights to use the waters and former pond bed, once it became open to the Bay.¹⁹³ Bay House prevailed in the trial court on its claim of trespass as to its former pond bed, but the Virginia Supreme Court reversed the trial court’s holding.¹⁹⁴ The court also ignored the issue of whether Bay House owned its new Bayside property to the high-water or low-water mark.¹⁹⁵ However, since sea level in Virginia is rising faster than almost anywhere in the world,¹⁹⁶ the Virginia courts will not be able to disregard such issues for much longer.

C. *Assateague Island and Property Valuation Issues*

Assateague Island, which is in both Virginia and Maryland,¹⁹⁷ has provided several interesting challenges to the application of traditional property law principles. Today, much of the island is federally owned as a national seashore.¹⁹⁸ Located near the densely populated resort town of Ocean City, Maryland, the park was established in 1965 with the goal of balancing the preservation of natural resources with human use and enjoyment.¹⁹⁹

¹⁹⁰ *Jenkins v. Bay House Assoc.*, 581 S.E.2d 510 (Va. 2003).

¹⁹¹ *Id.* at 511.

¹⁹² *Id.*

¹⁹³ *Id.* at 511-12.

¹⁹⁴ *Id.* at 513.

¹⁹⁵ *See id.* (lacking any discussion of ownership boundary and water level).

¹⁹⁶ Tennant, *supra* note 60, at A1.

¹⁹⁷ *See* National Park Service, Assateague Island National Seashore Park Map, <http://www.nps.gov/asis/planyourvisit/upload/parkmap.pdf> (last visited Mar. 1, 2007).

¹⁹⁸ *See* KIRK MARINER, ONCE UPON AN ISLAND 145 (1996) [hereinafter MARINER, ONCE UPON AN ISLAND] (discussing the federal legislation which created Assateague National Seashore).

¹⁹⁹ 16 U.S.C. § 459f (2007); National Park Service, Assateague Island National Seashore, Nature & Science: Environmental Factors, <http://www.nps.gov/asis/naturescience/environmentalfactors.htm> (last visited Mar. 1, 2007) [hereinafter Environmental Factors].

First, there is an issue related to the property description for the national park in its enabling legislation. The description is both general in its vague reference to the island, and specific in its reference to a map:

The seashore shall comprise the area within Assateague Island and the small marsh islands adjacent thereto, together with the adjacent water areas not more than one-half mile beyond the mean high water line of the land portions as generally depicted on a map identified as Proposed Assateague Island National Seashore Boundary Map, NS-AI-7100A, November 1964.²⁰⁰

This map captured a snapshot of a land mass that did not exist as such two years before, and certainly does not exist now, for Assateague Island has changed dramatically in shape and location.²⁰¹ Given that such a property description, if placed in a deed, would probably fail for indefiniteness, it appears that Congress did not contemplate the likelihood of significant island migration when it drafted the bill.²⁰²

Because the State of Maryland owns part of the north end of the island, jurisdictional issues have arisen between the state and federal governments, especially since jetties installed by the Corps of Engineers in an attempt to sustain an inlet actually accelerated the change process by

²⁰⁰ 16 U.S.C. § 459f (2007). Although the referenced boundary map is “available for public inspection in the offices of the Department of the Interior” according to 16 U.S.C. § 459f, the author found it to be unavailable at the main office of Assateague Island National Seashore in Berlin, Md. The author gathered that due to the difficulties associated with locating boundaries and federal versus state jurisdictional lines, and the fact that legal disputes have not yet arisen over these issues, it would be best not to attempt to clarify those boundaries but rather, to let that proverbial sleeping dog lie. *See infra* note 205 and accompanying text.

²⁰¹ *See* WHITELAW, *supra* note 31, at 1384 (noting that a 1687 patent for the Virginia portion of Assateague Island indicated 3,500 acres; a 1943 transfer to the federal government for wildlife refuge parcels indicated 8,808.5 acres); Aerial Photograph with GPS Overlay: Jetty Shoreline Change, Ocean City, Md. (National Park Service, 2003) (on file at Assateague Island National Seashore); GPS Map: Historic Island Change, Assateague Island National Seashore 1850-2002 (National Park Service, 2003) (on file at Assateague Island National Seashore).

²⁰² *See supra* notes 173-82 and accompanying text. The legislative history for the Assateague Island National Seashore Act indicates that members of Congress did not discuss significant island migration on the record. 111 CONG. REC. 23,892, 23,892-94 (1965). *See also* 111 CONG. REC. 22,993, 22,993-98 (1965) (noting that legislation would “preserve a wonderland of barrier beach and shifting sands thrusting outward from the sea”); 111 CONG. REC. 14,007, 14,007-11 (1965) (noting the need for beachfront stabilization).

interrupting sand flow to the south.²⁰³ The boundary between federal and state land has moved, the island has rolled inward, and a formerly navigable channel has closed.²⁰⁴ The National Park Service is understandably unsure about where to enforce federal regulations; therefore, in some places, it probably does not aggressively do so.²⁰⁵ A court has not yet been called upon to settle these murky jurisdictional questions, but if previous courts' attempts to apply land-based property law to the barrier islands are an indication, a coin toss may be in order.²⁰⁶

Legal issues have, however, arisen over the valuation of Assateague Island property because Assateague, like other barrier islands, has migrated, flooded, and changed shape considerably.²⁰⁷ When the establishment of the Assateague National Seashore was pending in the early 1960s, land speculators purchased parcels of property on the island, hoping to profit from increases in land values.²⁰⁸ However, a major storm in March 1962 washed away or severely damaged most existing structures, as well as the paved road on the island.²⁰⁹ Because there was so

²⁰³ DEAN, *supra* note 33, at 78-80.

²⁰⁴ See Environmental Factors, *supra* note 199 (discussing the movement of the island toward the mainland). See generally *United States v. Alaska*, 521 U.S. 1, 9-12 (discussing the boundary lines between the state and the federal government).

²⁰⁵ Telephone Interview with Robert Fudge, Dir. of Interpretation, Assateague Island National Seashore (Oct. 11, 2005).

²⁰⁶ See *supra* note 189.

²⁰⁷ See generally *United States v. 222.0 Acres of Land More or Less (222.0 Acres)*, 324 F. Supp. 1170 (D. Md. 1971) (discussing difficulty in valuing Assateague Island property due to unusual circumstances); *In re Assateague Island Condemnation Cases*, 356 F. Supp. 357 (D. Md. 1973) (illustrating difficulty in valuing Assateague Island property in takings cases), *aff'd sub nom. In re Certain Land in County of Worcester, State of Md.*, 487 F.2d 1397 (4th Cir. 1973), *United States v. Bernwinkler*, 487 F.2d 1398 (4th Cir. 1973), *United States v. Fischbach*, 487 F.2d 1398 (4th Cir. 1973), and *United States v. Ruby*, 487 F.2d 1399 (4th Cir. 1973).

²⁰⁸ See *222.0 Acres*, 324 F. Supp. at 1175. This was not the first time that Assateague Island was the subject of plans for resort development. *Plan to Develop Assateague Beach*, PENINSULA ENTERPRISE, Oct. 24, 1936, at 1 (describing tentative plan to develop several thousand acres for hotel, cottages, and dude ranch). Fortunately, common sense (and perhaps a weak economy) prevailed and Assateague was never home to more than just a small community of residents.

²⁰⁹ *222.0 Acres*, 324 F. Supp. at 1174-75. Of the forty-eight homes on the island, thirty were destroyed. MARINER, ONCE UPON AN ISLAND, *supra* note 198, at 144 ("Nature's quick and easy destruction of the development resulted in a reconsideration of what to do with the island."). As a significant percentage of the island was under water following the storm, complex ownership and jurisdictional issues arose immediately. *222.0 Acres*, 324 F. Supp. at 1175. The state government owns the ocean bottom offshore to the low-tide waterline, so some privately owned land formerly subject to purchase by the federal government

much destruction, property values in the area were depressed.²¹⁰ However, the Corps of Engineers assisted in “restor[ing] the barrier dunes,” and property values in the Ocean City area (just north of the national seashore) rebounded in the years 1963-68.²¹¹ Property values on Assateague also climbed due to the publicity associated with the park.²¹² The trial courts charged with valuing island parcels for purposes of compensating landowners for a taking by the federal government were faced with the question of how to value the land: should pre-storm (1961-62) values be used, or would post-storm values be more appropriate?²¹³ Post-storm values were especially difficult to determine because although much property had been washed away, the value of the land was inflated due to publicity associated with the prospective national park.²¹⁴

In struggling with the valuation issue, the district court in *United States v. 222.0 Acres of Land* first noted that some lots were “covered by water in whole or in part at normal high tides every day.”²¹⁵ In an extensive recitation of facts, the court then considered the sale prices of lots on Assateague in the years prior to the 1962 storm, the destruction wrought by the storm and the depressed values afterward, the restoration of the barrier dunes by the Corps of Engineers, and the effects of the

became state property virtually overnight. Telephone Interview with Robert Fudge, *supra* note 205; *United States v. Alaska*, 521 U.S. at 5-6. Even today, federal officials speculate whether a legal dispute would result if a beach replenishment project on Assateague caused island property to be replaced after a private property owner had not received compensation for the portion of his property that was underwater at the time of sale to the federal government. Telephone Interview with Robert Fudge, *supra* note 205. *See also* KAUFMAN & PILKEY, *supra* note 17, at 249 (lack of clarity under the law as to who has property rights in a migrating beach). Further questions relate to whether such a private property owner would have a better claim if he could prove that he once owned the sand that was pumped from offshore for the beach replenishment project, and whether the federal, state, or local government owns the sand in long-shore currents. *See id.* at 83. Such sand is undoubtedly a valuable resource, especially as states and municipalities seek appropriate material with which to replenish their beaches, a major tourist attraction and revenue generator. *Id.* For example, city officials of Ocean City, Md., claim ownership of a sand shoal just off the coast, which was formed when sand from beach replenishment projects washed off the beach and was prevented by jetties by flowing south to Assateague Island National Seashore. DEAN, *supra* note 33, at 112-13. National Park Service officials are concerned by such an assertion of “sand rights” and a legal dispute over the issue is possible. *Id.*

²¹⁰ *222.0 Acres*, 324 F. Supp. at 1174-75.

²¹¹ *Id.* at 1175.

²¹² *Id.*

²¹³ *Id.* at 1174-83.

²¹⁴ *Id.*

²¹⁵ *Id.* at 1173.

Assateague Island National Seashore Act.²¹⁶ The court also speculated about property values in 1967-68 if the island had not become a national park, further considering such factors as its proximity to Baltimore and Washington and the "high quality of the beach."²¹⁷ Finally, without explanation, but while acknowledging the numerous factors affecting property values, the court concluded that just compensation was the sale price of such lots in voluntary arms-length sales transactions in 1961-62, adjusted upward "at the rate of about 50%."²¹⁸

Two years later, the same court decided *Assateague Island Condemnation Cases*.²¹⁹ This time, in conducting its valuation analysis, the court emphasized a different set of facts: the high costs of building roads on the island, the need to bring in fill, the "formidable problems presented by federal, state and county environmental and other standards" for residential development, the infestation of the marsh with insects, and an appraiser's conclusion that the highest and best practical use for the tract was hunting and outdoor recreation.²²⁰ Ultimately, the court provided a specific value for each tract at issue based upon structures present, including a reduction for a twenty-five-year lease to the owner,²²¹ and the environmental factors present in this case and that of *United States v. 222.0 Acres of Land*.²²²

While the two foregoing valuation cases had different outcomes, taken together, they illustrate a key point: barrier island property is extremely complicated. It does not behave like inland real property; it

²¹⁶ *Id.* at 1174-75.

²¹⁷ *Id.* at 1179-82.

²¹⁸ *Id.* at 1182.

²¹⁹ 356 F. Supp. 357 (D. Md. 1973), *aff'd sub nom. In re Certain Land in County of Worcester, State of Md.*, 487 F.2d 1397 (4th Cir. 1973), *United States v. Bernwinkler*, 487 F.2d 1398 (4th Cir. 1973), *United States v. Fischbach*, 487 F.2d 1398 (4th Cir. 1973), and *United States v. Ruby*, 487 F.2d 1399 (4th Cir. 1973).

²²⁰ *In re Assateague Island Condemnation Cases*, 356 F. Supp. at 360. The court also noted that 12.39 acres of the 29.44-acre tract to be valued were under water, found that 1.73 acres were tidelands, and further stated that "part of the remaining 15.32 acres is forested, a part is savannah (grassy land predominantly dry) and a part is marsh land, some of which is inundated during periods of exceptionally high tides." *Id.* Overall, the judge in this case made a compelling argument as to why most of the southeastern barrier islands of the United States should not have been developed for residential purposes, and he did not even consider the destruction that would be wrought by hurricanes, the enormous costs to taxpayers of rebuilding, and the dreary prognosis for development given rising sea level.

²²¹ *Id.* at 364.

²²² *Id.* at 357-64.

changes constantly. Basic property rules, such as those associated with land valuations in takings cases, do not work well when they are applied to the barrier islands.²²³ As exemplified by the foregoing cases involving Assateague Island, traditional land valuation formulae used by the courts ignore the special value of barrier islands in protecting the coast from catastrophic damage caused by storms and in providing habitats for endangered and threatened species.²²⁴ Thus, as discussed in the Conclusion, an alternative set of property law rules for barrier islands would be more appropriate.

CONCLUSION: APPLY WATER-BASED NOTIONS OF LAW TO THE BARRIER ISLANDS AS A COMMON RESOURCE

The struggle to determine how to treat barrier island property is representative of the conflict between several important public policies in this country: the value of free enterprise, the strength of private property rights, and the need for preservation of critical environmental resources. Despite some governmental efforts to preserve the islands,²²⁵ and although both geologists and legal scholars have asserted that barrier islands are not suitable for permanent development such development has continued.²²⁶ The exception to this pattern is the barrier islands of Virginia, which remain largely undeveloped due to their ownership by TNC and the federal and state governments.²²⁷ The barrier islands of Virginia therefore serve as an important model of how such a crucial resource and wildlife habitat has been preserved, rather than destroyed by man-made interference with natural processes.²²⁸ Virginia also serves as

²²³ See *supra* note 189.

²²⁴ See Eric T. Freyfogle, *The Owning and Taking of Sensitive Lands*, 43 UCLAL. REV. 77, 88-95 (1995) (discussing certain unreasonable values of wetlands and barrier islands); see also *Loveladies Harbor, Inc. v. United States*, 21 Cl. Ct. 153 (1990), *aff'd*, 28 F.3d 1171 (Fed. Cir. 1994) (explaining that the court values environmentally sensitive property before and after regulation while ignoring externalities associated with the ecological significance of each parcel).

²²⁵ See BUSH, *supra* note 15, at 4-5 (discussing coastal population growth).

²²⁶ *Id.* at xii ("strongly recommend[ing] against" living on barrier island or purchasing barrier island property); Brion, *supra* note 123, at 729 (arguing that "intensive development of barrier islands is ultimately incompatible with its natural function" of protecting the coast from Atlantic storms); VanTine & Zezula, *supra* note 77, at 300.

²²⁷ See BADGER & KELLAM, *supra* note 31, at xi-xii (discussing Virginia's barrier system on the East coast); DEAN, *supra* note 33, at 237-40 (discussing the Nature Conservancy's purchase of Virginia's barrier islands).

²²⁸ See BEATLEY ET AL., *supra* note 18, at 237-40 (discussing examples of environmentally compatible development on the Eastern Shore of Virginia).

a model jurisdiction for examining how traditional property law principles have been applied to land in motion.²²⁹

Generally, existing laws and regulations governing the barrier islands are haphazard and have not adequately protected the islands as a valuable national resource, curtailed the rise in coastal population, or reduced the cost of storm damage to society.²³⁰ With sea level rising²³¹ and the frequency and intensity of storms impacting the coast expected to increase,²³² the role of the barrier islands as a buffer is more important than ever. Given the availability of scientific knowledge about the ocean and the barrier islands, as well as the recognition that land-based rules of law have been inappropriately or ineffectively applied to them,²³³ a new legal paradigm for barrier island property is warranted. For purposes of both ownership and resource regulation, the appropriate scheme must take into account the geological and ecological characteristics of the islands.²³⁴

With respect to ownership of property, and as discussed in Part III, land-based notions do not apply well to the barrier islands.²³⁵ However,

²²⁹ See *Jenkins v. Bay House Assoc.*, 581 S.E.2d 510 (Va. 2003); *Bradford v. Nature Conservancy*, 294 S.E.2d 866 (Va. 1982).

²³⁰ BUSH, *supra* note 15, at 69; NORDSTROM, *supra* note 74, at 194 (noting that state coastal policies vary widely in absence of unifying federal plan); Szablewicz, *supra* note 4, at 376-77 (noting conflicting policy objectives among federal, state, and local governments with respect to the barrier islands). See DEAN, *supra* note 33, at 58 (lamenting that despite laws restricting hard stabilization measures, such armor continues to be installed); Hope M. Babcock, *Has the U.S. Supreme Court Finally Drained the Swamp of Takings Jurisprudence?: The Impact of Lucas v. South Carolina Coastal Council on Wetlands and Coastal Barrier Beaches*, 19 HARV. ENVTL. L. REV. 1, 61-62 (1995) (asserting that "current legal dogma" has failed to consider "the laws of nature," threatening ecologically sensitive areas). See generally Butler, *supra* note 35 (discussing failure of state regulatory programs in light of political influences). In her book *Against the Tide*, Cornelia Dean asks a related philosophical question: if a government regulation that deprives a property owner of all economically viable use of his or her property constitutes a taking, is it not also a taking when a private property owner "destroy[s] a natural resource that belongs to the public?" DEAN, *supra* note 33, at 204. When barrier islands, an invaluable natural resource, are subjected to private development and hard structures that cause the coast to be exposed to horrific storm damage, it seems that the private owners should be responsible for the costs, since they have, in effect, taken a public resource for private profit.

²³¹ See Tennant, *supra* note 60, at A1.

²³² See DEAN, *supra* note 33, at 143.

²³³ See *supra* note 189.

²³⁴ See KAUFMAN & PILKEY, *supra* note 17, at 36 (advocating that property law must take into account the realities of the coast and recognize "that the substance of the land . . . must be shared"); see also WES JACKSON, *BECOMING NATIVE TO THIS PLACE* 25 (1994) (arguing that nature must inform society's decisions about land use).

²³⁵ KAUFMAN & PILKEY, *supra* note 17, at 224 ("The legal system has never adapted to the surprises of nature.").

the notion of what it means to own property is evolving: property owners today do not have the expectation that they have an absolute right to use their property however they wish.²³⁶ Landowners generally accept that there are limitations placed on the uses of their property by federal, state, and local governments.²³⁷ It appears that society is moving, albeit slowly, toward understanding that land-use practices must take into account the characteristics of the land itself and the ecosystems present there.²³⁸

The idea that society might have a different approach to property ownership is not new. The Native Americans had no concept of private land ownership; they understood land as common ground.²³⁹ When chiefs sold land to English settlers, they believed they were granting the right to use property, not to hold it in perpetuity.²⁴⁰ Even as the notion of private property rights took over and dominated this country's development, as discussed in Part III, the concept of the commons along the shore remained powerful. Recently, legal scholars have suggested that courts must take into account evolving norms and expectations of a community when applying property law.²⁴¹ Communities, in turn, must pay attention to nature when establishing property ownership norms and incorporate a land ethic into ownership law.²⁴²

While the United States Supreme Court has not been completely supportive of state regulations that attempt to protect environmentally fragile properties,²⁴³ the Court has suggested that limitations may exist

²³⁶ See Freyfogle, *The Owning and Taking of Sensitive Lands*, *supra* note 224, at 79.

²³⁷ *Id.*

²³⁸ *Id.* at 113.

²³⁹ KIRK MARINER, TRUE TALES OF THE EASTERN SHORE 21 (2003).

²⁴⁰ *Id.* See JACKSON, *supra* note 234, at 17.

²⁴¹ Freyfogle, *The Owning and Taking of Sensitive Lands*, *supra* note 224, at 120 (noting that courts must update the common law of real property by considering "evolving norms" of the community); Goldstein, *supra* note 10, at 349, 409 (noting that real property law is not "static" and will evolve to accommodate environmental ethics).

²⁴² Arnold, *supra* note 7, at 318-21 (noting that property law must take into account natural functions of the land and "the ecosystem that the land or resource serves"); Freyfogle, *The Particulars of Owning*, *supra* note 7, at 585 (noting that rights in land should be "tailor[ed] to the land itself"); Freyfogle, *The Owning and Taking of Sensitive Lands*, *supra* note 224, at 138 ("[O]wnership norms must somehow embrace more overtly the wisdom of the age of ecology, a wisdom that will inevitably translate into greater land-use limits, into greater communal humility."). See Brion, *supra* note 123, at 765 ("[T]he webs of property interests in tracts of land shrink in proportion to the significance of the webs of biotic functions in the land.").

²⁴³ *E.g.*, *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992) (holding that the implementation of a South Carolina statute meant to preserve coastal property constituted a taking for which compensation was required).

on a property owner's title.²⁴⁴ Thus, the notion that limitations exist on owners' rights in barrier island property is not entirely inconsistent with current jurisprudence. Such limitations exist, and always have, because of the characteristics of the property itself.²⁴⁵ As the cases have demonstrated,²⁴⁶ it is impossible to "own" barrier island property in the traditional land-based sense because the rules of law simply do not apply.

Several commentators have asserted that within the existing legal framework, the most effective strategy for preserving the barrier islands is simply to purchase them and forbid development.²⁴⁷ Either public acquisition or acquisition by a private entity, such as TNC, for long-term preservation has worked on a limited scale, as in Virginia.²⁴⁸ Unfortunately, this strategy is prohibitively expensive and politically unpopular, so it is unlikely to be applied in time to protect the barrier island chain from Maine to Texas.²⁴⁹ Instead, society must move away from thinking about the barrier islands as coastal real estate, which must be owned in a metes and bounds manner. The islands are important as a national (not merely local) resource. They are multi-jurisdictional in nature because they involve sea, shoreline, and moving sand. Barrier island issues are

²⁴⁴ *Id.* at 1030. *Cf.* Goldstein, *supra* note 10, at 406 ("Why is the purchaser of land not responsible for taking account of the physical facts which regard his parcel?").

²⁴⁵ See generally Freyfogle, *The Owning and Taking of Sensitive Lands*, *supra* note 224.

²⁴⁶ See *Nature Conservancy v. Machipongo Club*, 419 F. Supp. 390 (E.D. Va. 1976), *aff'd in part, rev'd in part*, 571 F.2d 1294 (4th Cir. 1978), *modified on reh'g*, 579 F.2d 873 (4th Cir. 1978)(*per curiam*); *Bradford v. Nature Conservancy*, 294 S.E.2d 866 (Va. 1982); *Steelman v. Field*, 128 S.E. 558 (Va. 1925); *Steelman v. Lafferty*, 71 S.E. 524 (Va. 1911); *Merritt v. Bunting*, 57 S.E. 567 (Va. 1907).

²⁴⁷ DEAN, *supra* note 33, at 213-34 (discussing the purchase of coastal property as the only surefire strategy for preserving it); Barnhizer, *supra* note 66, at 343 (discussing public acquisition of property rights as effective mechanism for protecting coast); VanTine & Zezula, *supra* note 77, at 312-15 (discussing land acquisition option for barrier islands). Others have proposed regulatory solutions to save the barrier islands as a valuable natural resource. *E.g.*, KAUFMAN & PILKEY, *supra* note 17, at 281-82 (proposing a zoning scheme under which buildings would be private property but land would be owned in common); VanTine & Zezula, *supra* note 77, at 317-21 (proposing local zoning ordinance to prohibit development that is incompatible with natural processes on barrier islands). However, for political and jurisdictional reasons, the regulatory approach has been ineffective and a new scheme is needed. A related inquiry for future research would involve an international comparison of approaches to preserve barrier islands in light of global atmospheric changes and sea level rise. See NORDSTROM, *supra* note 74, at 196-99 (describing national coastal management programs in the United Kingdom, Denmark, Spain, and Germany).

²⁴⁸ Warner, *supra* note 27, at xiii.

²⁴⁹ See Szablewicz, *supra* note 4, at 405 (noting that the nature of legislative system makes public acquisition of barrier islands unlikely).

really societal issues, not confined within state or local boundaries. Thus, a federal approach, which involves partnering with state and local governments, is called for in developing the new legal paradigm.²⁵⁰

Given that the barrier islands do not behave like land, and further given their importance as a common resource for coastal populations and an invaluable habitat for wildlife species, viewing barrier islands as a water-based resource instead of a land-based resource is appropriate.²⁵¹ Other legal scholars have proposed that viewing real property using the paradigm of water and its communal nature makes sense,²⁵² especially for ecologically significant land.²⁵³ In light of the widespread societal recognition of the importance of barrier islands in protecting the coast and coastal populations following Hurricane Katrina, as well as the acknowledgement that sea level is rising and will continue to do so, it is a logical step for society to change its conception of barrier island property to a community-based scheme rather than a traditional, private property rights scheme. The acceptance of water as a community-based resource is long-standing;²⁵⁴ it is a rational extension of that paradigm to include the barrier islands within its scope.

²⁵⁰ Barnhizer, *supra* note 66, at 299. See KAUFMAN & PILKEY, *supra* note 17, at 280-83 (suggesting strategies for federal, state, and local governments, as well as private sector, in retreating from the beachfront).

²⁵¹ See Myrl L. Duncan, *Reconceiving the Bundle of Sticks: Land as a Community-Based Resource*, 32 ENVTL. L. 773, 791-98 (2002) (discussing the historical contrast between legal rights in water (public) and rights in land (private)). Historically, surface water and groundwater are both treated as public resources under the law. *Id.* The federal government has superior rights to control navigable waters for purposes of commerce. *Id.* A water-based scheme would still allow for environmental protection of threatened and endangered species and their habitats. *Id.* at 795. Such regulations would be more practicable to enforce—and more flexible—without the underlying assumption of stable property boundaries. *Id.*

²⁵² *Id.* at 791-95.

²⁵³ *Id.* at 783, 800 (arguing that land ownership principles disconnected from principles of ecology and community are “nonsensical”); Carol M. Rose, *Property as the Keystone Right?*, 71 NOTRE DAME L. REV. 329, 351 (1996) (asserting society’s understanding of property rights would be more flexible and reasonable if water were the paradigm). *Cf.* Duncan, *supra* note 251, at 798 (suggesting that society has treated water in a communal manner because it is mobile and difficult to apportion, but land, being stable and easy to carve into parcels, has been treated as a resource appropriate for individual ownership). Of course, since the barrier islands are neither stable nor easy to apportion, this theory implies that society’s historical treatment of barrier island property as suitable for individual ownership is deeply flawed.

²⁵⁴ Duncan, *supra* note 251, at 791-95.

Of course, the transition to viewing the barrier islands as a community water-based resource would be a difficult one. A primary challenge would be determining how to treat existing private development.²⁵⁵ Eventually, without continuing expenditures by the federal government (in the forms of Corps projects, Federal Emergency Management Agency assistance, NFIP subsidized redevelopment, and other government disaster relief programs), the barrier islands would be reclaimed by nature and private ownership would cease to exist after the real estate became less and less valuable. Existing structures on the oceanfront could be moved to the mainland, where they would no longer be vulnerable to the forces of the sea. That very process occurred on the barrier islands of Virginia in the 1930s, to the dismay of property owners; however, they were wise enough not to fight the ocean, or to enlist the federal government's help to do so.²⁵⁶ After having their homes and their community washed away by the brutal forces of nature, Hog Islanders understood that a barrier island is not a good place to live and they moved to the mainland, taking their houses with them.²⁵⁷ Perhaps in remembering these singular individuals and their village of Broadwater—which exists now only in the memories of a few surviving residents of Hog Island—modern society can make a fundamental change in order to preserve one of the nation's most remarkable and priceless natural resources: the barrier islands.²⁵⁸

²⁵⁵ See KAUFMAN & PILKEY, *supra* note 17, at 271-73 (asserting that for most heavily developed beaches, no "viable alternative exists except to return" to their natural state). Another issue would involve the barrier islands that have already been degraded and partially lost due to man's interference. Fortunately, they need not be further sacrificed; barrier islands can be strengthened by plantings that encourage the development of marshes on their inland side. DEAN, *supra* note 33, at 153; David Burke, Manager, Living Shorelines Stewardship Initiative, Address at the Shoreline Erosion Seminar, Onley, Va. (Sept. 29, 2005) (describing fringe marsh creation as a shoreline erosion control method).

²⁵⁶ WILLIAM & MARY CTR. FOR ARCHAEOLOGICAL RESEARCH, A PIONEERING FARMSTEAD OF THE BARRIER ISLANDS 5 (2000). See Interview with Jerry Doughty, *supra* note 148.

²⁵⁷ A PIONEERING FARMSTEAD OF THE BARRIER ISLANDS, *supra* note 256, at 5. See Interview with Jerry Doughty, *supra* note 148. Today, a neighborhood called "Little Hog Island" is present in Willis Wharf, Va., where many of the structures originally constructed on Hog Island (in the village of Broadwater) were relocated.

²⁵⁸ See BADGER & KELLAM, *supra* note 31, at xii; YVONNE WIDGEON, PRECIOUS MEMORIES OF CHILDHOOD DAYS ON HOG ISLAND (1991); Videotape: Barrier Island (Video Atlantic Teleproductions 2005) (on file with The Barrier Islands Center).

APPENDIX A**KEY STATUTES AND REGULATIONS AFFECTING PRESERVATION OF THE VIRGINIA BARRIER ISLANDS***Federal*

Coastal Zone Management Act, 16 U.S.C. §§ 1451-65 (2007) (“CZMA”) (encourages states to implement land use planning programs for coastal areas).²⁵⁹

Coastal Barrier Resources Act, 16 U.S.C. §§ 3501-10 (2007) (“CBRA”) (restricts expenditure of federal funds for development of undeveloped barrier islands).²⁶⁰

State

Chesapeake Bay Preservation Act, VA. CODE ANN. §§ 10.1-2100 to -2116 (2007) (requires local governments of Tidewater Virginia to designate resource protection areas and incorporate water quality protection measures in their comprehensive plans and zoning ordinances).

Coastal Primary Sand Dune Protection Act, VA. CODE ANN. §§ 28.2-1400 to -1420 (2007) (restricts activities that would disrupt primary sand dunes on coastal barrier islands).

Soil and Water Conservation Act, VA. CODE ANN. §§ 10.1-500 to -573 (2007) (requires submission of erosion control plan for land-disturbing activity).

²⁵⁹ The CZMA, while well-intended, does not adequately protect the barrier islands. See KAUFMAN & PILKEY, *supra* note 17, at 113, 247 (noting that state coastal management plans under CZMA fail to recognize the “indivisible wholeness of barrier islands” or designate barriers as areas of special concern); Houck, *supra* note 21, at 340 (noting that mandates of the CZMA are weak).

²⁶⁰ *But cf.* Barnhizer, *supra* note 66, at 339-40 (noting that the CBRA has had only “limited success in preventing” development on the barrier islands). In fact, recent lawmakers have weakened the statute by working to exclude barrier island property from its protective provisions; at the time that Hurricane Katrina struck the Gulf Coast, bills were pending in Congress to provide federal insurance coverage to 50,000 acres that had been excluded from eligibility under the CBRA. Breed, *supra* note 95, at 3A (noting that the CBRA does not protect the majority of the barrier islands, since most are already developed).

Wetlands Protection Act, VA. CODE ANN. §§ 28.2-1300 to -1320 (2007) (states policy of protecting wetlands while accommodating economic development).

Va. Marine Resources Comm'n, Coastal Primary Sand Dune/Reaches Guidelines: Barrier Island Policy, 4 VAC § 20-44-10A.2 (2007), *available at* <http://www.mrc.virginia.gov/regulations/fr440.shtm> (prescribes permitting process for development on barrier islands impacting coastal primary sand dunes).

Local

ACCOMACK COUNTY, VA., CODE §§ 102-281 to -315(2007) (governs use and development of wetlands).

Coastal Primary Sand Dune Ordinance, NORTHAMPTON COUNTY, VA., CODE §§ 152.01-.99(2007).

Wetlands Ordinance, NORTHAMPTON COUNTY, VA., CODE §§ 151.01-.28 (2007).

Zoning Ordinance, NORTHAMPTON COUNTY, VA., CODE §§ 154.001-.999 (2007).²⁶¹

²⁶¹ The Northampton County zoning requirements are based expressly upon the Chesapeake Bay Preservation Act (cited above). As noted, Northampton County has adopted ordinances that apply to both the seaside (the Coastal Primary Sand Dunes Ordinance) and the landward side (the Wetlands Ordinance) of barrier islands. Accomack County has a wetlands ordinance with building and zoning requirements but no dune regulations, so the Virginia Marine Resources Commission ("VMRC") has jurisdiction over seaside development in Accomack County through the application of its barrier island policy and supplemental guidelines (cited above). However, the VMRC has jurisdiction over beaches and dunes only; if building were to occur behind the dunes (to the west), VMRC would lack jurisdiction. If the wetlands on the landward side of the island were involved, the Accomack County Wetlands Ordinance would apply; however, if building were to occur on the landward side but not in a wetlands area, neither the Wetlands Ordinance nor the VMRC barrier island policy would apply. Thus, the challenge on barrier islands is not only determining which governmental authorities have jurisdiction, but also, when the island migrates, determining whether jurisdiction of such authorities has changed. For example, a home that was not in the wetlands or on the dunes at the time of construction may be now; jurisdictional lines change as the island rolls over and moves. There is no "grandfathering" for homes to be exempt from these regulations if such regulation did not apply at time of construction. Telephone interview with Hank Badger, Engineer, Va. Marine Res. Comm'n (Oct. 11, 2005). This practical difficulty for local officials is another example of a primary assertion in this paper: land-based laws do not work on the barrier islands.

APPENDIX BSIGNIFICANT COURT DECISIONS RELATED TO THE BARRIER ISLANDS
OUTSIDE OF THE COMMONWEALTH OF VIRGINIA*Florida*

Siesta Properties, Inc. v. Hart, 122 So. 2d 218 (Fla. Dist. Ct. App. 1960) (finding that property lines could not be “enlarged” after a hurricane deposited land of one riparian landowner against the shore of another island).

New York

New York Coastal Partnership v. United States Dept. of the Interior, 341 F.3d 112 (2d Cir. 2003), *cert. denied*, 126 S. Ct. 352 (2005) (affirming dismissal of a claim that the government exacerbated erosion on Fire Island by preventing replenishment of sand through littoral drift and causing deprivation of property).

North Carolina

Cape Hatteras Access Preservation Alliance v. United States Dept. of the Interior, 344 F. Supp. 2d 108 (D.D.C. 2004) (finding that the U.S. Department of Fish and Wildlife’s interpretation of an Endangered Species Act regulation, which contemplated movable land boundaries, was valid).

Concerned Citizens of Brunswick County Taxpayers Ass’n v. State, 404 S.E.2d 677, 684 (N.C. 1991) (finding that the dynamic quality of land on a barrier island did not defeat an easement by prescription, even if the pathway claimed under prescriptive use doctrine changed during the prescribed period).

Parker v. New Hanover County, 619 S.E.2d 868 (N.C. Ct. App. 2005) (finding that a special tax assessment for an inlet relocation project to stabilize migrating barrier islands could withstand legal challenges).

Singleton v. Sunset Beach & Twin Lakes, Inc., 556 S.E.2d 657 (N.C. Ct. App. 2001) (finding that the court was unable to determine property rights to a strip of land on a barrier island when its "actual physical location on the face of the earth" was different than its map designation).

Shell Island Homeowners Ass'n v. Tomlinson, 517 S.E.2d 401 (N.C. Ct. App. 1999) (challenging the constitutionality of erosion control structure regulations that arose after an inlet on a barrier island migrated).

Conservation Council of North Carolina v. Haste, 402 S.E.2d 447 (N.C. Ct. App. 1991) (finding that an environmental group was entitled to a hearing to contest the government's decision that revetment was necessary to protect a bridge on the Outer Banks from erosion).

South Carolina

Georgia v. South Carolina, 497 U.S. 376 (1990) (deciding ownership of islands at the mouth of the Savannah River, where it was unclear whether the islands were formed by accretion or avulsion).

Lucas v. South Carolina Coastal Council, 505 U.S. 1003 (1992) (seminal regulatory takings case in which property owner prevailed, despite the fact that following Hurricane Hugo and while case was pending, his land was several feet under water).²⁶²

Texas

Mikeska v. City of Galveston, 419 F.3d 431 (5th Cir. 2005) (vacating a grant of summary judgment to city after city had refused to restore utility service to homes on Galveston Island following Tropical Storm Frances, which had resulted in inland migration so that homes were seaward of vegetation line).

²⁶² See Houck, *supra* note 21, at 347.