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# Coastal Development, Environmental Amenities, and Market Forces: An Application of Economic Theory

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James R. Rinehart and Jeffrey J. Pompe

**T**he purpose of this article is to explore the experiences of several coastal island developments with regard to environmental protection. The compatibility of free markets and the attainment of environmental standards on coastal barrier islands are explained, and the cases of several South Carolina barrier islands are used to illustrate this compatibility.

## Market Solutions for Environmental Protection on Coastal Barrier Islands

General economic theory explains that common property resources are sometimes used inefficiently because private users normally do not take into account the social costs of their actions. Such

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a view is often used to make the case for government involvement through regulation of common property resources. The authors' research on coastal development demonstrates clear exceptions to this conclusion.

Coastal ecosystems are sensitive to the impact of development and population growth. More than 50 percent of the U. S. population now lives within 50 miles of a coastline, and the migration to coastal areas continues. As one might expect, human activities create numerous externalities. Problems created by development include shoreline erosion, beach and water pollution, wildlife habitat damage, and biodiversity reduction.

It is the authors' contention, however, that adequate property rights can lead developers to protect valuable habitat and natural resources. According to the Coase Theorem, if property rights are securely in place and transaction costs are low, the market tends to automatically work to resolve externalities. This phenomenon has been

observed in practice on the barrier islands of South Carolina, and the authors believe these examples can make the Coase Theorem, and public choice economics in general, more meaningful.

Barrier islands are elongated, dune-covered strips of sand stretching along 2,700 miles of the United States coastline. These islands protect the mainland from wave and storm damage as well as provide valuable habitat for plants and wildlife. South Carolina barrier islands such as Hilton Head, Seabrook, and Dewees have been largely owned by one owner with clearly defined and secure property rights. Consequently, the owner/developer is forced to factor in the negative erosion effects on other properties owned if, for example, a sand dune is graded to get closer to the ocean for a better view. Coastal sand dunes are valuable landforms that protect property from storm damage (Bush, Pilkey, & Neal, 1998). In the course of barrier island development, one can observe decisionmakers protecting

environmental amenities such as water, forest, air, wildlife, and other natural resources since the overall economic value of the investment is put in jeopardy if such resources are harmed.

In the cases included in this study, developers used deed covenants to set environmental standards, property owners' associations to enforce compliance with deed restrictions, and community gates to control access to sensitive resources. A security gate gives property owners control in much the same way that one controls what goes on in one's backyard. Most gated communities also form homeowners' associations that serve as a private community government. Through these associations, property owners force compliance with rules and deed covenants, thereby protecting each other from environmental externalities common in most cities and communities.<sup>1</sup>

If the owner plans and develops an entire area before selling any portion of the development, the externalities are dealt with as part of the overall plan since the monetary value of the development is dependent upon it. However, if each parcel of land is owned by a separate individual and is sold independently one at a time without the development being envisioned or created as a community or whole, little incentive exists for any one person to take into account externalities such as the damage that one might do to the land, water, air, wildlife, or plant life.

Myrtle Beach, a well-known resort area in South Carolina, is

a good example of piecemeal development. Lots there have been and are owned by thousands of individuals and have been sold piecemeal for decades and, as one might expect, with accompanying significant damage to the environment. The dune system is often destroyed, and structures are built too close to the ocean. The locality is treeless, crowded, noisy, and burdened with bumper-to-bumper traffic most of the time. Myrtle Beach is now wrestling with zoning and regulation controls in an attempt to deal with its many externality problems. Most of the environmental amenities already lost can never be restored. Also, government regulators are greatly hampered in their efforts to control current and future development since a set of property rights and vested interests was established long ago. As a consequence, new limitations can be put into place only at severe costs to these interest groups. Heavy litigation is ensured with every new rule or restriction and legal expenses soar for both sides.

The use of deed covenants, property owners' associations, and security gates has been spreading rapidly throughout the United States. One estimate puts the number of gated communities at 20,000 with most of those being established within the past 15 years (Blakely & Snyder, 1997). One reason for the popularity of gated communities is that developers make considerable efforts to preserve the natural beauty of the area. It is apparent that environmental amenities sell and developers, through market processes, have found a way to produce and market them.

Covenants included with the original property deeds are used by most developers of barrier islands (and other gated communities for that matter) to impose restraints on current and future landowners, thereby preventing many externalities from becoming problems in the first place. With covenants securely in place at the outset, the need for public regulation, other than to enforce the covenants in place, is minor. Covenants are also more efficient than public regulation because enforcement costs less, and they help to avoid capricious and arbitrary rules and changes, which are common with government zoning. Finally, covenants involve less inequity since the "taking" question oftentimes can be avoided. Government protection of the environment (e.g., zoning regulation) sometimes "takes" land value without taking the land.

The well-known case of David Lucas illustrates this dilemma. In 1986, after buying two lots on the Isle of Palms in South Carolina for almost \$1 million, a 1988 State law prevented him from building on them. Lucas sued the State. This case went all the way to the U. S. Supreme Court, imposing substantial cost on the State, Lucas, and the Federal government. South Carolina eventually lost the case and paid Lucas more than \$1 million for his two lots (Rinehart & Pompe, 1995).<sup>2</sup>

### Case Studies

The authors of this paper present three cases for illustration. Although only three cases are presented, thousands of similar

cases exist on and off the coast. In fact, the authors have identified more than 30 such developments on or near the South Carolina barrier islands.

### **Hilton Head Island**

Hilton Head Island was one of the first of South Carolina barrier islands to be developed on a large scale. The island is located thirty miles north of Savannah, Georgia, and 110 miles south of Charleston, South Carolina. It is shaped like a foot and is five miles across at its widest point, encompassing approximately 42 square miles. By the middle of the 20<sup>th</sup> century, the Island was inhabited by roughly 1,100 people, and no one lived on the southern two-thirds of the island, which was covered by dense, subtropical forests.

In 1949, Fred C. Hack and Joseph B. Fraser, two lumbermen from Georgia, organized the Hilton Head Company and bought 8,000 acres of the island. In 1950, Hack and a new investor, Olin T. McIntosh (along with Fraser), formed another company, The Honey Horn Plantation, and bought an additional 12,000 acres. The two companies now owned most of the island. The primary reason for the purchase was the island's virgin timber. It was not very long before Charles Fraser, Joseph's son, realized the resort potential of the island. In 1957 he changed the direction of the investment project from lumber to resort development. In fact, Charles convinced his father to cease cutting the tall pines, especially those along the coast, because he realized that the trees had more monetary value in higher land prices if left

standing than if sawed into lumber.

Fraser took 3,480 acres (eventually encompassing 5,000 acres) on the southern tip of the island and began to develop it as a resort. This section, known as Sea Pines, had miles of beachfront, many lagoons and sea marshes, and heavy concentrations of forests and wildlife. The developer exercised great care to protect the environment as development got underway. Lots were laid out to maximize views; houses were opened to the outside; streets wound through nicely landscaped lots; trees, wildlife, and natural vegetation were protected; and lagoons, sand dunes, and marshes were off limits to builders. According to Michael N. Danielson, "Sea Pines became a training ground for developers, architects, landscape designers, and others who later took their lessons to resorts and new communities across the nation" (1995: 34).

Hack tried to take a different approach with some of the land he controlled by selling lots piecemeal. He soon realized that Fraser's approach was far more profitable and began carbon-copy development efforts on the remaining portions of the island, starting with Port Royal Plantation consisting of 1,000 acres, followed by Shipyard (800 acres), and Spanish Wells Plantation (360 acres).

While both Fraser and Hack took great care to protect the island environment, it must be said in all candor that they did it primarily because that course of action was the most profitable one. This outcome is precisely

the one expected based on the logic of the Coase Theorem. If there is sufficient demand for environmental goods, market incentives push private landowners toward the optimum level of environmental goods. In short, buyers of environmental goods, such as those buying land at Sea Pines on Hilton Head Island, were able and willing to outbid the historical users of the island, namely lumber mills, hunters, and farmers.

### **Seabrook Island**

Seabrook Island is located approximately 23 miles south of Charleston, South Carolina. The island has 2,200 acres of land area and more than 3.5 miles of beach. Development of the island began in 1970 by the Seabrook Development Corporation. Following in the path of Charles Fraser and Sea Pines on Hilton Head Island, the developers relied on deed covenants, property owners' groups, and a security gate to protect the environment.

Twenty-eight years later, according to the Seabrook Island Natural History Group, "Seabrook embodies the near-virgin state of its discovery nearly 300 years ago" (Pivnick & Carney, 1992: 92). The heavily wooded island has a variety of unpolluted fresh water lakes, marshes, lagoons, creeks, and abundant wildlife. Seabrook has no commercial establishments such as grocery stores, banks, department stores, etc. A property owners' association, made up of approximately 2,300 property owners, has been created primarily to enforce the original covenants and to assess property for adequate fees to

take care of roads, beaches, utilities, and the security gate.

Since the security gate denies public access, Seabrook Island property owners must cover all island maintenance costs, including beach preservation. Natural erosion can be severe, and maintaining beaches can be especially expensive. Beach maintenance projects have included \$3 million from 1972 to 1982 for seawalls; \$300,000, in 1983, to move Captain Sam's Inlet; \$1.5 million, in 1990, for beach nourishment; and \$500,000, in 1996, to move Captain Sam's Inlet. If the beaches on the Island were public, property owners would be clamoring for federal money. The Federal government pays 65 percent of the costs of nourishment on public beaches, although property owners near the beach get most of the benefits.

### Dewees Island

Dewees Island, 12 miles northeast of Charleston, South Carolina, is a very recent barrier island development that takes the concepts established at Sea Pines and Seabrook even further. The island is privately owned and contains 1,206 acres with a diverse ecosystem. The Island Preservation Partnership started developing the property in 1990 and has significantly limited the number of lots and homes to be sold. The developers have incorporated sufficient restrictions in the property deeds to ensure protection of the island's environment. The plan is to integrate homeowners into their surroundings with minimal disruption to the island's ecosystem.

Careful planning preserves the island's natural resources, including the sensitive beach and salt marsh environment. The developers have restricted the number of lots and homes to 150, leaving over 65 percent of the island protected from any development, including 350 acres that have been designated as a wildlife preserve. Oceanfront homes are built in the maritime forest well back from the beach in order to protect the sand dune system and to prevent beach erosion. The setback distance on Dewees exceeds State requirements for coastal development.

Site planning and building design are used to minimize disturbance to the environment. Site development may disturb no more than 7,000 square feet of ground, and no formal lawns are permitted. All roads and driveways consist of a natural sand base in order to limit the amount of pollution that is washed into waterways. No gasoline-powered vehicles are allowed on the island in order to lessen noise, air, and water pollution. Private docks, which may harm fish and plant life as well as diminish the natural ambience, are prohibited. Walkways and wetland bridging protect wetlands and dune systems. All measures are designed to prevent the destruction of the natural environment and to preserve the character and natural resources of the island.

The Dewees developers actively promote these environmental standards because they can sell them. It is as simple as that. Property buyers pay for the environmental amenities through higher lot prices. Lots are not cheap on the island—they range

from \$165,000 to more than \$400,000. In this case, as in the other two, the property price is equal to the social cost, which includes private cost plus external cost. Despite the high prices, all lots on Dewees were sold by 2001. When private property rights are well defined and secure, markets will establish a price for the environmental amenities, market failure can be avoided (as the Coase Theorem explains), and something closer to an environmental optimum can be attained.

### Conclusion

Until recent decades, most economists explained that common property resources exhibited externality characteristics that required government intervention, generally referred to as "market failure." Public choice economists in recent years have raised the specter of "government failure." Namely, government agencies do not always work as well in practice as their proponents envisioned. Rational ignorance, vested interest, and short-term orientation, characteristics of governmental operation, often get in the way of the best intentioned plans.

Public choice economists also have stressed the compatibility between market forces and the optimum use of common property resources. When property rights are clear and secure, "market failure" does not occur, thereby obviating the need for governmental involvement. With secure property rights in place, individuals have incentives to weigh benefits and costs (including environmental benefits

and costs) in making choices, thus producing efficient outcomes. Environmental protection in private developments can, and often does, exceed minimum government requirements. In coastal communities, ocean setbacks and habitat protection are two examples. Case studies such as Sea Pines on Hilton Head Island, Seabrook, and Dewees, illustrate the correctness of this theory.

### Endnotes

1. Actually, these results are not limited to barrier islands, but barrier islands do provide a very good illustration. Many of the thousands of gated communities in the U. S. make deliberate efforts to preserve environmental amenities.
2. For David Lucas' personal account of this case, see David Lucas, *Lucas vs. The Green Machine*.

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