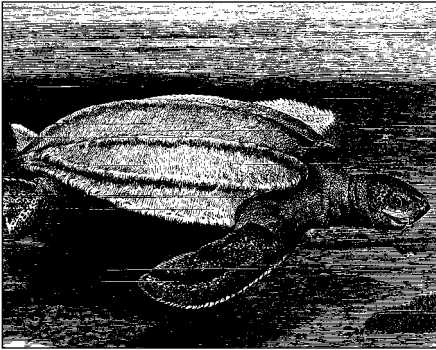


CASE STUDY 4

COASTAL BARRIER ISLAND PRESERVATION IN NORTH CAROLINA



Situation

A barrier island with a small year-round population and a large number of seasonal home owners has the potential of greater development. The island is also home to a unique forest community as well as other rare fauna. State plans to purchase large tracts of the island for preservation must consider the economic impact of shutting down further development that such preservation would entail and the alternative of purchasing a similar tract for preservation on another island.

Background

Old Baldy Island is a coastal barrier island in North Carolina.¹ It is situated at the mouth of the Cape Buffalo River, approximately three miles off the coast of Northport and about 30 miles south of Wilmatown, the fourth largest city in the state. Old Baldy Island is the largest and southernmost of a series of small islands connected by extensive salt marshes that form an area known as Smith Island. It comprises approximately 13,000 acres including upland, tidal marshes and creeks, shallow bays, and marshland. The island is 3-1/2 miles long and 1-1/2 miles wide and features a moderate climate often referred to as subtropical. The Old Baldy Island Lighthouse, built in 1817, serves as the Island's landmark — it is North Carolina's oldest lighthouse.

Located on the island is the Old Baldy Planned Unit Development, primarily a second home development; it is somewhat of an island retreat in that its access is limited to a privately operated ferry system which provides access to the mainland. While there are a limited number of year-round residents (approximately 60 at present), some 1,200 families have homes there. The neighborhood is less than 50 percent developed.

THE MARITIME FOREST. Old Baldy Island is home to a maritime evergreen forest. It is a globally imperiled forest community located on old stabilized dunes and flats protected from saltwater flooding and the most

¹ While this case study is based on a real situation, place names and some facts have been modified for the purposes of the example.

extreme salt spray. Encompassing approximately 355 acres, it is the largest in the state and still has undeveloped, natural transition zones from ocean to sound. The topography is that of a dune ridge and swale system: the ridges are broad and they slope gently into even broader swales, which can be wet or dry, depending on local drainage patterns. The natural communities associated with the Phase I site include salt marsh, interdunal ponds, pine lowlands, palmetto lowlands, and non-forested freshwater wetlands.

While the State has been working closely with local officials to minimize impacts from development on the maritime forest, even low-intensity development on Old Baldy Island will tend to fragment the high-quality maritime forest communities. The proposed actions would preclude even lower density development.

A special Maritime Forest Advisory Committee, set up by the North Carolina Coastal Resources Commission in 1990, recommended that the few remaining high quality tracts of maritime forest be acquired and managed for conservation purposes. The committee ranked the undeveloped maritime forest on Old Baldy Island among the top two or three maritime forests in North Carolina in terms of natural area values such as ecological integrity, uniqueness, diversity, rare species, size, and historical significance. Nags Head Woods and Buxton Woods are the two other areas of significant natural value and these two areas have already been acquired for conservation purposes.

VEGETATION. The Island is home to several species of plants that are unique. One of these is a plant commonly known as the Old Baldy Blue Curl, a small indigenous plant in the mint family. A significant feature of the forest is the many extremely old trees; they include palmettos, pines, cedars, oaks, and dogwoods. The undergrowth throughout the forest is quite dense with many vine species. The most common of the understory shrub layer are Red Bay, Wild Olive, *Prunus caroliniana*, and French Mulberry. The Island also harbors two moss species, Beach Moss and Cuban scheliessmund that are recognized as “critically imperiled species.” Other plants that fall within the “critically imperiled species” designation are the Tough Bumelia and the Piedmont Flatsedge. Finally, the dunes and cape at Old Baldy are host to a newly identified species, Dune Blue Curl, which is a candidate for state and federal protection.

WILDLIFE. Old Baldy Island is North Carolina’s most popular nesting area for the endangered loggerhead sea turtle, which lays its eggs along the island’s 14-mile oceanfront. The Old Baldy Conservancy has a successful sea turtle conservation program which claims a 95 percent hatch rate. Other fauna of the island complex include alligators, raccoons, large numbers of tern and gulls, over-wintering brown pelicans, and migrating peregrine falcons. The freshwater ponds and marshes are used heavily by water birds, as are the extensive marshes, tidal creeks, bays, and mudflats. Nearby Battery Island is North Carolina’s largest breeding rookery for egrets, herons, and ibises.

Proposal for Preservation

To preserve maritime forest, the state of North Carolina is considering purchasing land currently scheduled for development. In Phase I of the proposed preservation plan, the State will ac-

quire approximately 125 acres of the remaining core maritime forest. In Phase II, the State will work to acquire as much of the remaining undeveloped maritime forest and associated wetlands as possible. It is anticipated that Phase II will include the purchase of additional areas along the undeveloped estuarine shoreline. North Carolina is also considering acquisition of an ocean front section that would protect a portion of the island from ocean to sound.

The Old Baldy Phase I Purchase Tract is an irregular shaped area of 96.80 acres. The Purchase Tract can be generally characterized as a gently rolling and heavily wooded maritime forest. The plan would include a Maritime Forest Protection Overlay District, protective salt spray shear zone vegetation, forest wetlands, and relic dunes and dune ridges. In addition, there would be a prohibition against the removal of trees and shrubbery (except as necessary), the filling of wetlands and ponds, and on-street parking. In addition, all construction would need to be contained to prevent runoff. To protect against the potential of introducing harmful exotic plants, only permissible plants would be allowed. The maximum lot coverage for structures, including all impervious surfaces, would not be allowed to exceed: (1) 25 percent of a building lot less than 9,000 square feet; (2) 50 percent of a lot less than 9,000 square feet in residential lots; (3) 60 percent of a commercial service or multi-family lot.

Economic Considerations

Implementing the proposed Old Baldy Island Phase I purchase would reduce the community's ad valorem tax base by approximately \$10 million, the purchase price of the land. Based on the current rate of development and the type of development that has occurred, approximately 50 housing units with property values of approximately \$7.5 million would be added per year, if there are no restrictions. Because of the seasonal nature of most of these residences, each of the additional residential units, if developed, would be anticipated to result in \$250 per month in direct expenditures in the local community during the winter season (October-February) and \$1,000 per month during the summer season. It has been estimated that the addition of more than 200 new residential units would result in the need for increased local public servants including one additional police officer, one fireman, and several municipal maintenance staff persons.

Exercise

The Old Baldy purchase is only one active maritime forest preservation option available to the State of North Carolina. Another is to purchase a similarly sized tract of maritime forest land on Little Barrier Island, also in North Carolina. The purchased land would become a nature preserve protected from development. The Old Baldy Little Barrier Islands are very similar — the main differences are smaller loggerhead sea turtle nesting areas and the absence of palmetto palm trees and beach moss on Little Barrier Island. Little Barrier Island also lacks the historical significance of Old Baldy Island, home of the Old Baldy Island Lighthouse and Captain Charlie's Station cottages built in 1903.

Little Barrier Island has extremely limited development, with no existing plans for additional construction activity. For this reason, purchasing the land is estimated to cost \$2 million. Since

the land on Old Baldy Island is scheduled for development, its purchase price is expected to be roughly \$10 million, the appraised value of the land. Given this information consider the following questions:

1. Suppose your agency is trying to decide between purchasing the land described above on Old Baldy Island and the similarly sized tract of maritime forest land on Little Barrier Island in North Carolina. Which tract of land would you recommend trying to purchase?
 - a. What additional information would you want?
 - b. Does the schedule for development affect your decision?
 - c. What operations other than purchase might be available (zoning, legislation, takings)?
2. Which economic approach in this handbook would you typically use in evaluating the Old Baldy Island maritime preservation proposal?
3. How would the various economic approaches be of use to others in the decision process?
 - a. Developers
 - b. Local agencies making decisions regarding supporting public investment decisions
 - c. Interest groups
 - d. Public at large
 - e. Federal regulators/decision-makers
4. The residential development on Old Baldy is “upscale,” but is protected by covenants and zoning restrictions. Transportation around the island is restricted to electric golf carts. Plants may not be introduced unless they are on a list of permissible shrubbery. Restrictions also exist limiting all impervious structures. You have responsibility for the enforcement of zoning laws related to the environment. Two homeowners have approached you with a proposal. One, for aesthetic reasons, prefers not to pave his driveway. The other wishes to purchase her neighbor’s “right to pave” in order to build a tennis court on her property. Proponents of this proposal applaud the flexibility that allowing “tradable paving rights” affords. Property values could rise if residents are permitted to build tennis courts and other amenities on their land. They also note that less pavement would exist than if the two homeowners had paved driveways. Those opposed to the change argue that existing residents originally did not have a choice between paving a driveway, building a tennis court, and selling their rights. Further, they argue, the right to pave is an intrinsic part of the property and cannot be transferred. Finally, they fear that this is an attempt to abolish paving limitations altogether.
 - a. Should residents be allowed to sell paving rights?
 - b. How would you deal with the right of a future homeowner to pave his driveway if the previous owner has already sold the rights?
 - c. Should your agency attempt to regulate the price for which paving rights will sell? If so, what will you consider in setting that price?
 - d. What problems might arise from setting such a price?