

ARMORING THE COAST:

BEACHFRONT BATTLES OVER SEAWALLS

By John Tibbetts

As many beaches erode, houses and businesses along the nation's shoreline are increasingly threatened by rising seas during storms. Some oceanfront property owners claim their homes could be damaged or destroyed if they are not allowed to build protective seawalls. New seawalls, however, are banned in South Carolina because they contribute to the loss of public beaches. The problem is that people are building permanent structures on land that can easily wash away. How can South Carolina balance preservation of beaches against the rights of private landowners?



WHILE SHOREBIRDS GRAZE NEARBY, bulldozers have been scraping up sand near the water's edge at the Isle of Palms, a barrier island near Charleston. Since September 1996, bulldozers have dug shallow holes where the low-tide beach grows out in an unusual, curving bulge near the northeastern tip of the island. Then the machines have rumbled along for a quarter-mile or so, following the eroding shoreline.

Where the beach disappears at high tide, the bulldozers have dumped sand to build eight-foot protective dunes in front of houses and condominiums at Wild Dunes resort. The dunes provide no protection from high tides and storms, though. High tides easily wash away the temporary dunes, and a storm could knock the buildings off their pilings or undermine foundations.

The houses and condominiums "are sitting ducks, really," says Bill Eiser, S.C. Ocean and Coastal Resource

Management (OCRM) oceanographer.

Now six oceanfront homes at Wild Dunes are the focus of a lawsuit, *Elsie Jerozal v. S.C. Department of Health and Environmental Control-Ocean and Coastal Resources Management*. In August 1996, the landowners wanted to protect their property from erosion by piling truck-sized 6,000-pound sandbags on the public beach. But the state denied the permit request, because giant sandbags would be an "erosion-control structure" or a seawall. Regulators allowed property owners to install 5-gallon sand bags and scrape sand for protective dunes as a compromise.

Seawalls were banned under the S.C. Beachfront Management Act because they can accelerate beach

BARRICADE. On the Isle of Palms, Summer House condominium owners have been allowed to protect their buildings' foundation with small sandbags and sand scraping. PHOTO: WISSE STEES



IF LUCAS Argued Today

Legal experts doubt that the S. Supreme Court would even consider the *Lucas* case if it were presented now, because beach erosion has eaten away the land in question, just as state regulators predicted. The ocean has eroded the buildable land on the undeveloped lot and threatened a home on the developed lot formerly owned by David H. Lucas, a local developer.

"The Court wouldn't decide the *Lucas* case today," says Tom McElfish, an attorney with the Environmental Law Center, a nonpartisan think tank in Washington, D.C. "The court would dismiss it as moot, saying, 'We're not going to take this case.'"

In the *Lucas* decision, the Court relied on the additional legal assumption that the world is unchanging, says R.J. Lyman, an attorney with the Massachusetts Office of Environmental Affairs. Lyman, however, notes that land forms, especially beachfront property, are in flux. The Court saw the *Lucas* lots in a "snapshot" taken when the beachfront was unusually wide, he says, "but that snapshot was not representative of a lasting picture."

Beachfront property can erode and disappear, he says.

erosion. Seawalls allow waves to scour away sand and prevent beaches from naturally migrating inland, resulting in the beachfront disappearing underwater.

If a new seawall were built at Wild Dunes, high tides would cover the beach with two feet of water, making it difficult to walk on the public shoreline for several hours a day, regulators say.

Yet oceanfront landowners could lose their homes to storms and erosion if they cannot build seawalls. So now South Carolina faces the challenge of balancing the public's right to walk along the beachfront against the need of private landowners to protect their property.

The *Jerozal* lawsuit awaits a court date in the Charleston Court of Common Pleas. A similar case involving giant sandbags and a Daufuskie Island eroding beachfront is now awaiting a court date in Beaufort County.

In June 1997, Summer House condominiums at Wild Dunes and three neighboring landowners were also denied permits to put up giant sandbags. If a hurricane roared past this fall, as Bertha did in 1996, the condominiums could be destroyed by rough seas, says Dick Johnson, a resident of Summer House. "We don't need a direct hit;

if a hurricane goes by us, we're in trouble."

The problem is that people are building permanent structures on land that can easily wash away. In fact, South Carolina regulators made this argument during a landmark case heard by the U.S. Supreme Court in 1992, *David H. Lucas v. S.C. Coastal Council*—a case with broad influence on the state's shoreline policies.

In 1987, Lucas, a local developer, paid about \$1 million for two oceanfront lots at Wild Dunes near the *Jerozal* properties when the beach was hundreds of feet wide. His aim was to build a single-family home on each lot. But dramatic erosion along this shoreline had occurred about every five to 10 years; twice in the last 40 years, the lots had been completely underwater.

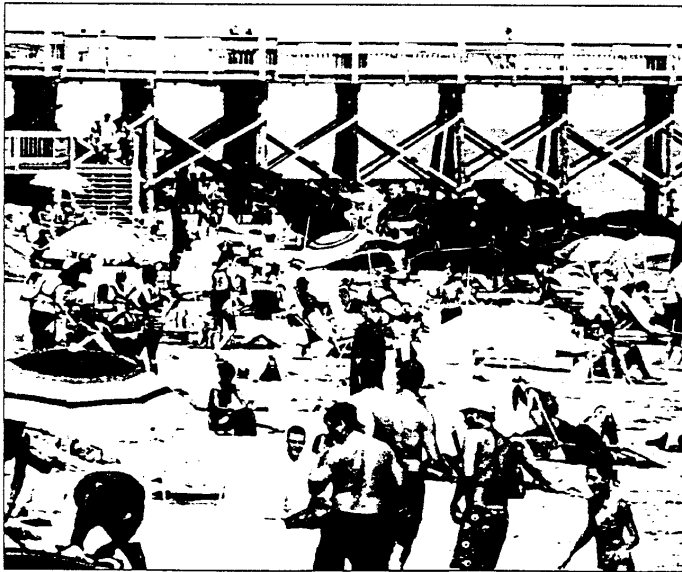
The S.C. Beachfront Management Act, passed in 1988, prohibited permanent structures from oceanfront areas likely to erode within 40 years. As a result, Lucas could not build on his lots, though homes existed on adjacent properties.

If regulators prevented him from building, Lucas said, his property would be worthless, or "taken" unconstitutionally, so he must be compensated. Lucas eventually won the case, the state buying the lots in a

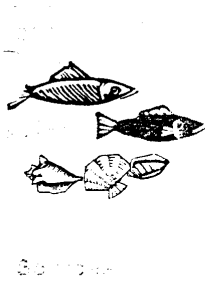
settlement of \$1.6 million. The case made national headlines and energized the growing property-rights movement.

"In the guise of environmental protection, (some) want no growth," says Lucas. "There's a group of people who like the beaches kept pristine, who don't want any development. But we stopped them."

The state resold the disputed lots to John and Robert Gwynn, developers in Columbia, the resale including special permits to build on both lots. So far, one of these lots has been developed with a single-family home, which is threatened by severe erosion, just as regulators had warned. The undeveloped



A DAY AT THE BEACH. Healthy beaches are crucial to South Carolina's \$6 billion tourism industry. PHOTO: WADE SPEEDS



Most nourishment projects along the South Carolina coast pump sand from ocean and river bottoms onto beaches. Now biologists worry that holes on the ocean floor left by dredging are not refilling with coarse sand, but with fine-grained, muddy sediments, which cannot be used for future nourishment projects.

"If you dig a hole to pump out sand, and the hole fills with mud, that area is clearly not good to use again" for nourishment sand, says Robert Van Dolah, marine biologist at the S.C. Department of Natural Resources.

If communities hope to dredge for additional nourishment projects in the future, they "would have to dig another hole someplace, and later on yet another hole someplace else, and this goes on. You can affect a significant area of ocean bottom that way."

By changing the composition of ocean bottoms, nourishment projects are also altering the biology of these areas and the kinds of creatures that live there, he says.

Van Dolah and colleagues are now studying all of the "borrow sites" dredged for nourishment projects along the South Carolina

coast, examining whether the holes have filled with sandy or muddy sediments.

lot, moreover, is cut in half by erosion, with too little land on which to build a house.

Eroding Beaches

OVER THE PAST CENTURY, SEA levels have risen an average of one foot on Gulf and Atlantic beaches. As a result, shorelines have migrated landward at an average rate of one or two feet per year, though local conditions can vary greatly, says Robert Dean, University of Florida coastal engineer. In some areas, the annual erosion rate can be more than 20 feet annually. Other areas, though, are stable or growing.

Today, developed beaches in South Carolina with "hotspots" of erosion include Edisto Beach, North Myrtle Beach, Garden City, Debordieu, Daufuskie Island, Hilton Head, Folly Beach, Sullivan's Island and, of course, Isle of Palms.

For generations erosion was not much noticed, because most U.S. beaches were

undeveloped. But as more structures were built on the oceanfront, landowners began installing erosion-control structures to protect their property. In the 1960s, starting in New Jersey, the nation's shoreline became increasingly armored with seawalls, bulkheads, revetments and other devices.

"There was a free-for-all, with people putting up any kind of shore protection they could afford," says Sea Grant researcher Tim Kana, senior scientist with CSC/Baird, based in Columbia.

Now 27 percent of South Carolina's developed shoreline is armored, as is 50 percent of New Jersey's, 70 percent of Virginia's and 80 percent of Georgia's.

So coastal managers have searched for alternatives to armoring. The options, though, have proved limited. Communities can nourish beaches, though nourishment is short-term and expensive. Most replenishments are designed to last several years, but sometimes they don't last that long.

Second, states can establish a policy of retreat, requiring that buildings be set back from the ocean, and prohibiting new seawalls and repair of old ones. But only two states, North Carolina and South Carolina, have attempted this strategy.

The South Carolina retreat policy has two basic features. A property owner can get a special permit to build up to a 5,000-square-foot house on land likely to erode within 40 years. But if the shoreline indeed washed away and the structure ended up on the public beach, the landowner would have to remove the building.

Further, new seawalls are prohibited, and existing seawalls cannot be rebuilt if 60 percent of each structure is destroyed by a storm. (By 2005, the threshold lowers to 50 percent.) As seawalls disappear, then some beaches will migrate inland, inevitably knocking some structures down and leaving others on the public beach, in which case they would have to be removed.

Inlet Vagaries

THE BEACHFRONT FOUGHT over in Lucas and Jerozal is a volatile environment because it's near a tidal inlet. Inlets are natural or manmade channels connecting the coastal



TOO CLOSE FOR COMFORT. On the northeastern tip of the Isle of Palms, the beach has rapidly eroded hundreds of feet, as appearing at high tide in front of some structures. PHOTO: JUDGE SPEEDS

ocean to rivers and estuaries, with strong currents caused by tides and river flows. Inlet currents build up supplies of sand, called shoals, just inside or outside inlet channels.

Some inlets cause rapid erosion as they travel down the coast under the influence of strong tidal and downdrift currents. Other inlets indirectly cause erosion when waves push shoals from inlet channels onto barrier islands.

A large shoal is located just offshore between the Isle of Palms and Dewees Island to the north. But a few years ago, waves very slowly pushed a portion of the shoal south and west toward the Isle of Palms. The migrating shoal added sand to the island, but it also created narrow channels for waves and strong currents to strike stretches of the beach, washing sand away, creating extreme erosion in some areas.

But once the shoal comes ashore, "attaching" to the shoreline and spreading, the beachfront will grow out, and the former Lucas lots will once again have a surplus of sand.

The sand won't stay there, though. While the Isle of Palms has an overall growing trend, some portions will continue to have periodic, dramatic losses of sand caused by migrating shoals every five to 10 years. In 1963, for example, the former Lucas lots were entirely on the public beach, and 10 years later they were partially covered by tidal ponds. Half of each Jerozal lot has been underwater or on the active beach 15-30 percent of the time since 1949.

"The land at issue in *Lucas* is virtually a mirage," writes Richard Lazarus, Georgetown University law professor, in the May 1993 *Stanford Law Review*.

Not true, says Lucas. The high land on his former lots will return, he says, likely remaining erosion-free for several years.

Management Decisions

IN 1992, THE U.S. SUPREME Court sent the *Lucas* case back to the S.C. Supreme Court with instructions. If the state's prohibition against Lucas' building on his lots indeed made his land worthless, then the regulation had

"taken" his property and institutionalized, and Lucas would be due compensation.

But a big loophole existed. If constructing a home in a hazardous place were considered a nuisance or a public hazard in South Carolina, then the regulation would not be a taking.

"Government can deny development for clear public safety reasons," says Gus Bauman, an attorney with Beveridge & Diamond in Washington, D.C.

So South Carolina was instructed to search through its common law—its historical judicial decisions—to discover whether its courts had ruled that building in hazardous areas was indeed a nuisance or threat to public safety. Finding no precedent that building on the beachfront could harm others, the state settled the case.

The *Lucas* case made big changes in the state's policy of retreat. "Before *Lucas*, we had a prohibition against building houses in certain (erosional) areas; now, after *Lucas*, we don't," says Steve Moore, OCRM director of permitting.

Regulators, in fact, say they cannot prevent people from building in hazardous places. "As long as you have high ground property to build on, it doesn't really matter what the erosion history of your land is, you'll get a permit" for a residential structure, says Eiser of CCRM. "While it's high ground, we can't deny (residential) property owners the right to build. Just because it's in a high-risk area is not enough justification to say that you can't build there."

But unlike houses, seawalls can harm the public beach by increasing erosion. Therefore, the strongest portion of the state's beachfront protection law is the seawall provisions, regulators say.

The effect of the seawall provisions, however, is that many more oceanfront homes will be threatened by storms and erosion. Thus regulators expect that property owners will try pressuring the state legislature to change the law.

"It will not be a good day when structures end up on the beach, and we have to order them removed," says Moore. "But very likely it's going to happen." ✓



Seawalls

North Carolina and South Carolina are the only states with sandy beaches on the East and Gulf coasts to ban new oceanfront seawalls. But as valuable oceanfront homes are threatened by rising sea levels, "North Carolina and South Carolina will be under tremendous pressure to undo the seawall restrictions," says Kerry Kehoe, legislative counsel for the Coastal States Organization.

State legislatures will increasingly hear calls from homeowners to allow new seawalls built and old ones repaired to protect homes and businesses. But in North Carolina, the ban on seawalls is very popular among voters, so it would be extremely difficult to change the law, officials say.

In South Carolina, some homeowners are applying pressure in courts and the legislature to undo the seawalls provisions, says Steve Moore, director of permitting for the S.C. Ocean and Coastal Resource Management. If the seawall provisions, "the hallmark, the cornerstone, of the state policy," were eliminated, the Beachfront Management Act would be effectively gutted, and regulators would lose a crucial tool to control development along the shoreline.