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 tumbled along for a quarter-mile or so, following the ending 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 Eisig, S.C. Ocean and Coastal Resource Management (OCRM) oceanographer.

Now an oceanfront homes at Wild Dunes are the focus of a lawsuit, Ellis 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-loads of 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 seawall. Regulations allowed property owners to install 5-foot high sand bags and scrape sand for protective dunes as a temporary measure.

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

BARRICADE: On the Isle of Palms, condominium owners have been allowed to protect their buildings with small sandbags and sand scraping from wave sets.
It's 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 Jernigal 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 case 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 resolved the disputed lots to John and Robert Gunn, developers in Columbia, the result 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...
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 Tern, 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 "hot spots" of erosion include Edisto Beach, North Myrtle Beach, Garden City, DeBordieu, Dunes 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/Bird, 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 armor. 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 2009, the threshold lowers to 50 percent.) As seawalls disappear, 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 bathed in Lucas and Jenness is a volatile environment because it's near a tidal inlet. Inlets are natural or manmade channels connecting the coastal...
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 Jerusal lot has been underwater or on the active beach 15-30 percent of the time since 1949.


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 Lucas would be due compensation.

But a big loophole existed. If constructing a home in a hazardous area were considered a nuisance or a public hazard in South Carolina, then the regulation could 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 determine 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 would harm others, the state settled the case.

The Lucas case marked a change 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 and 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 Eiler of OCRM. "While it's high ground, we can't deny 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 every 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 Terry Kelso, legislative counsel for the Coastal States Organization.

State legislators 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 seawall 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.