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## Shoveling Sand Against The Tide

*In this case, it would make sense for the US Army to retreat*

**By Ted Williams**

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**Retreat has always been anathema** to the United States Army, an admirable mindset except when fighting, say, the force of gravity. At that point, courage morphs quickly to stupidity.

"This nation has a large and powerful adversary," proclaimed the US Army Corps of Engineers in one of its early promotional films. "We're fighting Mother Nature. . . . It's a battle we have to fight day by day, year by year; the health of our economy depends on victory." Shortly thereafter it declared victory over the Mississippi: "We harnessed it, straightened it, regularized it, shackled it." As with all declarations of victory over Nature, that one proved premature.

Now, with the era of dams and river gutterization largely over, the Corps is keeping busy by pressing the attack on another front—the sea. At enormous expense to fish, wildlife and taxpayers it "replenishes" beaches with sand. Save for a superb three-part series by Terry Gibson in Florida Sportsman (beginning with the April 2005 issue), sporting and environmental publications are paying scant attention to this issue.

As a conduit for pumping pork, beach replenishment is as efficient as any other Corps activity. Federal taxpayers kick in as much as 65 percent for initial construction ("restoration") and 50 percent for "replenishment," also called "long-term maintenance" (although it's not maintenance at all, but regular replacement every time the beach washes away). For example, \$800 million of federal, state and municipal funds have been spent in Florida, \$665 million in California, \$494 million in New Jersey, \$228 million in New York, \$161 million in North Carolina, \$149 million in Virginia, \$106 million in South Carolina, \$90 million in Maryland, and \$50 million in Louisiana. As a means of saving beaches, however, replenishment is remarkably inefficient. "Twenty-six percent of replenished US Atlantic Coast barrier beaches (from the south shore of Long Island to Miami) were effectively gone in less than one year, while 62 percent lasted between two and five years, and 12 percent (all in southeast Florida) lasted more than five years," reports professor Orrin Pilkey, director of Duke University's Program for the Study of Developed Shorelines.

The Corps and the public have never understood that floods and beach erosion can't be prevented, only postponed, and that postponement devastates fish, wildlife and people. Along the Atlantic shore I have observed volunteers plugging dune blowouts with old Christmas trees, which remained in place just long enough to evict threatened piping plovers from their preferred nesting habitat. "We know when they put their Christmas trees in," remarked one Fire Island National Seashore ranger, "because we get them downdrift a week or so later." On Cape Cod, at the nation's northernmost nesting-site of the diamondback terrapin (a state-threatened species) I inspected the unhappy results of "dune stabilization." Believing that dunes aren't supposed to move, volunteers had planted them with beach grass. But it is the very instability of dunes on which so many species depend. In this case the grass had cooled the sand, and because sex in developing reptile eggs is determined by temperature, virtually all the hatchlings were male.

Some states still allow dunes and beaches to be "stabilized" with sea walls of cement or sand bags. Such structures hold back the ocean for a while until they themselves erode, but when waves break

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against them the energy is reflected seaward, carrying the sand with it and leaving a deep, rock-lined gully-and a new place for the Corps to pay itself to wage a new battle.

Ninety percent of the sea turtles that nest in US sand make landfall in Florida. Yet no state is more permissive in allowing seawalls which block their access. David Godfrey of the Caribbean Conservation Corporation reports that loggerhead turtles were doing OK in Florida until about six years ago. "Last year we had the lowest documented numbers of nests in 20 years," he says. "At a time when that's happening the policies of the state are particularly troubling to us." When the Fish and Wildlife Service or NOAA Fisheries finds that a project will jeopardize an endangered or threatened species, they must issue a "jeopardy opinion," which means the project can't happen unless the developer implements "reasonable and prudent alternatives." But a year ago a Fish and Wildlife biologist told me he'd been informed by his superiors that the Bush administration has forbidden jeopardy opinions for any species, no matter what.

Imagine the damage to riparian life if the Corps replaced all sediment along 10 miles of the Big Hole River. That's just what it's doing along the coastline. Invertebrates that fuel the entire nearshore ecosystem and on which shorebirds, crabs and juvenile fish depend are wiped out. Marine life is damaged-first when the sand is sucked from the seabed, and second when it is dumped on shallow reefs and beaches. Corps contractors use giant dredges to strip-mine the ocean floor along with all the delicate organisms it sustains, including worms, mollusks, shrimps, crabs, sand eels, sponges, corals and sea grasses. The nearshore ecosystem dies, then the natural beach dies when it's buried, often with incompatible sand. "We're getting bad sand from bad places," Pilkey told me. This "replenishment" sand may be coarser than the natural beach sand, consisting of broken shells or cobbles. When it's bulldozed around the beach it wipes out shorebird nesting habitat, prevents burrowers such as worms, sandfleas, ghost crabs and surf clams from moving back and forth with the tide, blocks the probing bills of shorebirds, and prevents sea turtles from digging nests.

Or the sand may be too fine. "Geologists would call these fine particles 'silts' or 'clays,'" declares Dr. Pete Peterson of the University of North Carolina Institute of Marine Sciences, one of the world's foremost authorities on beach invertebrates. "Everyone else calls it 'mud.' Mud is rapidly eroded and suspended; so, with every storm, you have a source injecting turbidity." This interface between earth, air and sea is the richest life zone in the ocean, Peterson points out. But many of the life forms that evolved here, especially juvenile fish and crustaceans, are filter feeders or have extremely delicate gills. The particles kill them. Mature creatures such as permit, bonefish, snook, striped bass, bluefish, false albacore, bonito, flounders, jacks, pompano, tarpon, Spanish mackerel, pelicans, terns, gulls, gannets, cormorants and sea ducks are sight feeders. Turbidity from beach replenishment prevents them from feeding. In fact, it prevents much of their prey-glass minnows, for instance-from even showing up in the surf zone. "The turbidity extends down the beach for miles, killing organisms beyond the replenishment area," says Peterson. "We've documented violations of state water-quality standards months after projects ended."

"These beach replenishment projects have been a constant source of concern for us," says George Geiger, vice chair of the South Atlantic Fishery Management Council. "We have commented ad nauseum to the Corps, as required through the permitting process. But I don't believe the council's comments have any bearing on potential permits. Under the Sustainable Fisheries Act of 1996 each council has to identify essential fish habitat out to 200 miles. Certainly the nearshore reef complex is essential habitat for all manner of fish-groupers, snappers, grunts, numerous crustaceans. It's a very delicate and complicated system. It's also a waypoint for these fish on their way offshore. And it's being buried knowingly." Supposedly, the Corps "mitigates" this damage by concocting offshore reefs with building rubble. But they don't work for these species; often they don't work for any species.

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Geiger makes his living as an inshore, light-tackle fishing guide around Florida's Indian River County. "We get this dirty-water plume that's almost permanent," he says. "For a couple years now-since the last major beach replenishment in Sebastian Inlet-glass minnows haven't been present. If you don't have them, you don't have anything."

In an official report the council deplores the fact that environmental review of beach replenishment is "dominated" by organisms listed under the Endangered Species Act while "there has been little or no consideration of hundreds of other species affected, many with direct fishery value" such as: red drum and weakfish; hard-bottom-dependent species such as snappers, groupers and black sea bass; coastal migratory pelagics including large mackerels and sharks; penaeid shrimp; corals; and benthic sargassum.

If environmental review is "dominated" by concern for listed species, that review offers little protection. "All this essential fish habitat is also juvenile sea turtle habitat," remarks the Caribbean Conservation Corporation's David Godfrey. "A lot of young turtles grow up on those reefs and sea-grass beds along the east coast of Florida. These turtles are from all over the world, not just Florida. They're from Costa Rica, Mexico, the Mediterranean."

Often, the Corps doesn't even make its contractors fulfill mitigation requirements imposed by its regulatory division. Terms of one environmental impact statement require contractors to transplant some 2,000 corals out from under an 11-mile-long project near Fort Lauderdale. So far, only a few hundred have been transplanted, and most of these are as dead as the Christmas trees that dune stabilizers plant in blowouts. "This project is the end of the thousand-year-old corals," says Florida Sportsman's Terry Gibson. "You might as well chainsaw the redwoods."

It turns out that what's good for corals, turtles, birds, fish and other nearshore marine organisms is also good for surfers. Gibson, who grew up in Florida's Palm Beach County, tells me he used to have 22 high-quality surfing/fishing spots thanks to reefs that held sandbars at the proper angle, but that beach replenishment has reduced these to two. "Ten years ago, the water here was clear; but all except one of these dredging projects have caused chronic turbidity. Sandfleas, coquina clams or ghost crabs are vastly reduced. The projects damn near put two bait shops out of business."

Under federal law, environmental review for beach replenishment is the responsibility of the Army Corps of Engineers, the main facilitator and, therefore, the main promoter. Basically, the Corps asserts that clouding the surf zone and smothering beaches and reefs is salubrious for everyone and everything. The Corps is also charged with calculating the cost-benefit ratios for projects, a task it performs by factoring in such outrageous estimates as "\$94 million" in property damage supposedly saved by its replenishment of Ocean City, Maryland, beaches before the winter storms of 1992. "But," notes Pilkey, "Hurricane Hugo, a much larger storm with a ten-foot storm surge, did only \$10 million worth of damage in Myrtle Beach, a similar community. . . . The Ocean City estimate of damage prevented seems to have been pulled out of the air."

In New York State the Corps has buried Rockaway beaches with mud and dumped butchers' offal it sucked up from an offshore site on Coney Island. Now it proposes a massive seven-mile beach replenishment project along the south shore of Long Island in the vicinity of Point Lookout. If the project happens, it will wipe out surf breaks as well as important burrowing forage for striped bass such as sand worms and sand eels.

"We had a private coastal engineer from Vero Beach come up and do an independent review for us,"

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says Ericka D'Avanzo, Long Beach environmental chair of the Surfrider Foundation. "He studied Point Lookout Beach, which is eroding, and Long Beach, which is accreting. The Corps has the same plan for both-\$207 million for construction and maintenance over 50 years, supposedly offering protection from a 100-year storm. That doesn't make sense. We have more sand now than we had in 1880. The engineer said Long Beach already has 99-year protection. So for one year more the cost is \$207 million."

Basically, beach replenishment is a taxpayer-financed gravy train for rich owners of beachfront McMansions, some of whom are now demanding the removal of protective dunes that block their ocean view. In the towns of Gulf Stream, Florida, and East Hampton, New York-whose beaches are continually replenished at taxpayer expense-the median home prices are \$1.5 million and \$977,000 respectively. "These people aren't interested in sharing public beaches and public resources," comments Dr. Bill Rosenblatt, mayor of Loch Arbor, New Jersey-a state whose entire 127-mile shoreline has been approved for beach replenishment at a cost of \$9 billion over the next 40 years. "Access has been limited in many areas. Beach replenishment is a stimulus for development, which then creates its own constituency for additional beach replenishment. The builders and electric companies love it. Now we're one of the top-10 most expensive counties for real estate in the US." Rosenblatt, who also serves on the national board of the Surfrider Foundation, reports that just in his area beach replenishment has destroyed innumerable fishing spots and destroyed or degraded over 50 good surf breaks.

North Carolina has received \$161 million in beach pork over the past 50 years, and much more may be on the way. Five years ago Rep. Walter Jones (R-NC) slipped a 14.2-mile beach replenishment project into the Water Resources Development Act. Initial construction costs: \$71.7 million; maintenance costs (because the sand quickly washes away): \$22.7 million a year for 50 years. Total cost: \$1.8 billion. Offshore mining of 79 million cubic yards of sand will take place in critical striped bass wintering habitat opposite some of the most important surf-casting beaches in our nation. "Retreat," as it's officially called-that is, buying out or relocating at-risk buildings-would cost only \$300 to \$400 million in this area. As global warming melts the polar ice caps, the oceans are rising at rates never seen before. Winning against the sea is as impossible for the Corps as it was for King Canute; but, again, the US Army doesn't like to retreat-especially when it can keep busy making fake beaches. In its environmental impact statement the Corps seriously asserts that spending \$300-\$400 million to relocate or buy out at-risk buildings isn't practical because such retreat fails to "fully address the problems of long-term beach erosion and storm erosion."

**When the 2004 hurricanes** peeled back some Florida beaches, building up others in the process, Congress threw \$130 million at the state for beach replenishment. The previous July, St. Petersburg had paid \$5 million to widen its beaches to 250 feet. A month later those beaches were gone. "Everyone knew [the sand] was gonna wash away," the city's public works director told the Daytona Beach News-Journal. The same publication quoted Paden Woodruff, environmental administrator of the Florida DEP beach section, as brushing aside the issue of disappearing sand sources and proclaiming that someday his "great-great-grandson might be nourishing St. Lucie County beaches" from an offshore sand-mining platform. "[Besides] do you think it's the American way to give up and retreat?"

It's not just fishermen, surfers, birders and environmentalists who are outraged. "As you dream of heading to the beach this Memorial Day, imagine this: on the way, stop at the bank, take out all your money, and then dump it into the ocean," suggests Taxpayers for Common Sense. "Sound crazy? Well, that's exactly what the Army Corps of Engineers does with millions of hard-earned tax dollars

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every year under the federal beach replenishment program."

Keith Ashdown, the group's vice-president for policy, says this: "These are local concerns, and we should not be funding them. Last time we had an amendment in front of Congress to cut funding we got trounced. Lightening is going to have to strike before we win."

The hero of the hour is none other than President George W. Bush, whose 2006 budget calls for a \$39 million cut from the \$102 million spent in 2005. In his first term, the President tried to zero out beach replenishment. When the powerful fake-beach lobby killed that effort, he tried to reverse cost sharing so the states and municipalities would carry 65 percent of the cost. The fake-beach lobby, killed that, too. With that, the administration suggested the feds keep paying 65 percent of initial costs, but that non-federal sources pick up the tab for long-term maintenance.

In fact, every president since Ford has tried to staunch the flow of federal pork to beach boondoggles and all have failed. I asked Ashdown if he thought President Bush's paired-down beach replenishment budget would clear Congress without getting bloated with more pork. "Not a chance," he said.

Not only do taxpayers get to pay for beach replenishment, they get to pay for storm damage to the houses that beach replenishment attracts. Unlike private insurance, federal flood insurance ladled out by the Federal Emergency Management Agency (FEMA) can't be cancelled no matter how many claims are made. Something like 1,500 coastal buildings are lost to the advancing sea each year, and FEMA estimates that by 2010 the figure will be about 10,000. Build them, and the sea will come. Still, the Corps, Congress and the public insist on drawing a line in the sand and standing their ground.

When you're facing off against the ocean, retreat is smarter, cheaper and drier. The National Wildlife Federation's David Conrad suggests this: "Communities could levy a small recreation sales tax, develop a trust fund, and pass a rule that for 20 years Front Street can have buildings but that when the ocean reaches a certain level, they'd buy out Front Street, demolish the buildings, and let the beach rebuild its dunes. Then Second Street would be Front Street. That sounds radical. But there are places right now where Fifth Street has become Front Street. It's just that no one will acknowledge it; instead they fight and fight and spend taxpayer money."

Ever since the hurricanes of 2004, David Godfrey hasn't been getting laughed out of the room when he uses the word "retreat" in front of state and federal beach bureaucrats. "We need to retreat in ways that are fair," he says. "The political will to do that isn't there yet, but those ways exist-buying conservation easements, for example, cutting taxes, buying out buildings when erosion reaches their foundations. That obviously can't happen on Miami Beach. Or if it is going to happen, it will be the last place because of all the high-rises. At the moment, these massive dredge-and-fill projects are the only option there. But we need to say: 'Do it in ways that aren't so harmful to nearshore habitat-not these giant, squared off, massive beaches that extend a quarter mile offshore where you're burying everything in sight every five to seven years.' That's the standard template along almost all the East Coast."

Once upon a time a community did it right. In 1973 a bridge from Florida's mainland brought a building boom to the pristine beaches of Sanibel Island. Giddy Lee County bureaucrats, who held land-use authority over the island, whooped it up for development, envisioning 35,000 seaside condos, apartments and houses. Residents had no say in their island's future, so on Election Day 1974 they voted to secede from Lee County and incorporate as the City of Sanibel. With that, they declared the beaches public property and called an orderly retreat from the sea by mandating sensible setbacks for new buildings. When a few houses, built before incorporation, were threatened by beach erosion the

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city did authorize limited replenishment, which promptly spawned caterwalling among about two dozen beneficiaries for regular replenishment. That's when environmental activists like Norm Ziegler-the angler and author-stood up and shouted it down.

Because Sanibel Island has protected its natural beaches, it is one of the few places you can sight-fish for snook; and Ziegler is now at work on a book on this subject. "People in Florida talk about federal money as if it came from the Tooth Fairy," he told me. "But it comes from somewhere. Why should a person in Iowa pay to pump sand in front of a billionaire's house?"

Good question.