

This Time, Man Defeated Nature

Florida's Flood-Control System Kept Frances From Swamping Plains

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WELLINGTON, Fla., Sept. 8 -- The most remarkable feature of Hurricane Frances was not its gargantuan size, which helped it drench almost all of Florida, or its glacial speed, which helped it dump as much as 13 inches of rain during its leisurely jaunt across the state.

The most remarkable feature of Frances was its flooding -- or, more precisely, its lack of flooding. Millions of people in South and central Florida live in low-lying flood plains that were wetlands in their natural state, and officials had worried that a big slow storm such as Frances would cause enormous water damage. But thanks to the world's most extensive and expensive water-control system, featuring thousands of miles of canals and levees as well as hundreds of powerful pumps, most of those flood plains did not flood.

Even former swamplands such as Wellington, a horse-country boomtown that used to be part of the Everglades, managed to stay relatively dry.

"It's really amazing," said Mayor Thomas Wenham. "I don't think we've got any flood damage at all."

Hurricanes are inevitably portrayed as object lessons in man's helplessness in the face of Mother Nature's power, and Frances's 105-mph winds certainly reflected that power. Water managers readily concede that there are limits to their ability to deflect floodwaters, and they fervently hope that they will not have to battle Hurricane Ivan with the peninsula already saturated by Charley, Frances and heavy summer rains.

But when it came to flooding, man got the better of Mother Nature during Frances, keeping billions of gallons of water out of the peninsula's living rooms. A decades-old big-government project that has ravaged the Everglades -- and has been targeted for an eco-sensitive \$8 billion makeover -- provided a vivid reminder of its original purpose this week. The Army Corps of Engineers and its nature-battling compatriots in the South Florida Water Management District were criticized by some environmentalists when they began shunting the region's water out to sea earlier this year, but agency officials noted that the water might have otherwise ended up in people's homes.

The most serious flood impact from Frances occurred along the St. Johns River and near Tampa Bay, areas unprotected by the Central and Southern Florida Flood Control Project. There were a few complaints about flood-damaged homes in the project's boundaries.

But only a few. Throughout the region, water managers opened canal gates and cranked up huge pumps to shunt floodwaters from Frances into the giant saucer of Lake Okeechobee, into storm basins, and occasionally into estuaries and marshes. For example, in the soggy Kissimmee Valley, which had already received almost twice its

average rainfall in the month before Frances, they prevented overflows by pumping enough water into Lake Okeechobee to fill an Olympic-size pool every 1 1/2 seconds.

"Some people don't even realize this system exists, and some people love to complain about it, but it's incredible that we could get through this storm without major flooding," said Bob Howard, the water management district's director of operations. "People still call us and say, 'Hey, why is there water in my yard?' They don't understand where they live. They don't understand what this place used to be."

South Florida used to be so wet that mapmakers had trouble deciding whether to depict it as land or water. It received 50 to 60 inches of annual rainfall, more than any other section of the United States. And it was almost as flat as a board, sloping south about an inch per mile, so the rain was exceedingly slow to drain out to sea. As a result, most of South Florida was an inhospitable wetland wilderness called the Everglades with only a few hundred residents.

But some early visitors began to dream of draining and "reclaiming" the Everglades into an agricultural and residential paradise. They figured it would be a simple matter of digging a few canals through the pestilential swamp and letting its waters pour out to sea.

The region was too wet and too flat to drain with a few ditches and dikes, and it rebelled against man's initial efforts to control it. In 1928, a Category 4 hurricane blasted Lake Okeechobee through a flimsy muck dike, drowning the region and killing 2,500 people. And in 1947, twin hurricanes reminiscent of Charley and Frances left South Florida underwater for months, causing tens of millions of dollars in flood damage.

That is when the Army Corps joined forces with the state of Florida to build the flood-control project, the largest dirt-moving effort since the Panama Canal. It created a maze of levees as high as 30 feet, canals as wide as 200 feet and pumps with engines the size of two-story buildings. The squiggly Kissimmee River is now the ruler-straight C-38 Canal; Lake Okeechobee is imprisoned by a 35-foot-tall dike; the Everglades have been ditched, diked and dredged beyond recognition. The project has cost more than \$500 million.

But the project has made South Florida safe for more than 7 million residents, 40 million annual tourists and agribusinesses that produce one-fourth of America's sugar. It has kept the region wet enough to supply drinking and irrigation water and to prevent fires and saltwater intrusion while averting huge floods.

The project has also devastated the Everglades. Half of the watery wilderness is gone, replaced by suburbs such as Plantation, Weston, Pahokee and Wellington. The other half is an abused and polluted mess, used as a reservoir and a sewer for a burgeoning human population. The Supreme Court recently heard a case in which water managers were accused of poisoning the Everglades with Wellington's excess runoff.

Four years ago, Congress approved an \$8 billion effort to remake the project to restore the Everglades, the largest environmental initiative in history. But even Nick Aumen, an

ecologist at Everglades National Park, concedes that despite all the environmental damage it has inflicted, the original project has met and exceeded its original goals: "I've got to admit, it's done an incredible job of controlling floods."

Aumen should know. He lives a few miles from Wellington, on land that used to support cypress swamps, pine flatwoods and isolated ponds. (He is currently restoring some of the wetlands in his back yard.) A small canal runs past his lot, which is true of almost every lot in the former Everglades. In some unincorporated areas out here, the only local governments are powerful drainage boards that have dug thousands of additional miles of ditches. Drainage is the key to survival, and drainage has allowed Wellington's population to expand 700 percent in the past two decades. The price of some five-acre lots have almost quadrupled in the past four years.

Wellington is now America's horse capital, featuring polo fields, equestrian centers and elegant stables with barrel-tiled roofs and Venetian arches; after more than a century at Madison Square Garden, the National Horse Show is coming to town this year. New York Mayor Michael R. Bloomberg (R) and rocker Bruce Springsteen take their daughters to horse shows here, and actor Tommy Lee Jones and Boston Bruins owner Jeremy M. Jacobs have mansions here. And none of this would be possible without canals.

"Look, Florida's flat. We need the ditches, or else the water would just pond up," said James Goldberg, whose family runs the Silver Screen Cinema Cafe in Wellington.

Frances pounded Wellington almost head on, ripping down palm trees, polo bleachers and screened-in Florida porches. Eight local homes may be condemned for wind damage. But the day after the storm, Wellington's roads were bone dry. Some yards were underwater, and some polo fields looked like lakes, but the predictions of the Great Flood never materialized. The log of complaints from residents the district received from western Palm Beach County seems rather petty, under the circumstances: Car half covered in water. Water up to knees in yard. Water going into garage. Ms. Mott would like someone to call her to reassure that her house is not going to flood.

"When you hear about this much rain, you want to start building an ark," said Richard Bonner, a deputy district engineer for the Army Corps in Florida. "But the system really contained it. There was a time when thousands of people were killed because we couldn't provide protection, so we're very pleased."