



# Cape Fear Firebird

*The Light of Save the Cape*

September 21, 2016

*Baby, the rain must fall; baby, the wind must blow*  
~ Elmer Bernstein & Ernie Sheldon

## ***Deluge, Part 2***

On August 18, we cited a report of the US Environmental Protection Agency about the recent increase in frequency of coastal flooding events. It shows that Wilmington, North Carolina, has a much higher rate of flooding events per year—almost 50%—than any other US coastal community—higher than any on the east and west coasts—higher even than places like Key West. Wow! Right here!

We looked for the reason, and discovered that dredging over the last hundred years has increased the tidal range—the difference in depth between low and high tide—at Wilmington from 2.6 feet to 4.7 feet. Now the tides at Wilmington are nearly as high as the tides at the mouth of the river.

We see the effects all along the Cape Fear River, the Northeast Cape Fear River, and the many inlets. What were once fresh water marshes have been inundated by salt water, changing lush forests, home to many varieties of plant and animal life, some endangered, into dreary forests of skeletons.

That's just what happens with day-to-day tides. What happens when we have a storm? That's been known to occur at the Cape Fear. And we have to take that into account.

The good friend who sent us that EPA report recently sent us a stunning paper from Portland State University in Oregon, of all places. The authors, who were honored by publication of their paper by the American Geophysical Union, selected the Cape Fear as the ideal location to determine how increasing depth and width of river channels by dredging causes long-term changes to the magnitudes of storm surge and storm tides in harbors and estuaries. Because that has happened here.

They found data going back to the 1880's. As for the range of normal tides, they learned that they had doubled, to almost five feet. But the storm surge—Oh my!

The historical high in the nineteenth century, when the channel was about 23 feet deep, was a storm surge of about six and half feet in a category four hurricane. But suppose the channel in the Cape Fear River is dredged to 47 feet, as the State Ports Authority plans, and the Governor's 25-year transportation plan supports? To maintain that channel depth, it must be overdredged to 49 feet to take into account silting between maintenance events. The investigators determined that the storm surge from a category four event up a river channel of that depth would be more than 13 feet!

We've had category four events at the Cape Fear. The most recent was Hazel in 1954. Imagine another category four hurricane with a storm surge of 13 feet at Wilmington. Devastation. Suppose it's at high tide! A huge risk to take to accommodate Asian container ships with goods that could just as efficiently be moved into and out of North Carolina through Norfolk and Charleston.