

Are We Suffering From “Hurricane Amnesia”?

The ten year anniversary of Hurricane Charley in 2014, and a nagging feeling that I should revisit the hurricane shutter quotes I had solicited in the previous year, inspired me to take a closer look at the tropical storm history of the area around Burnt Store Marina. The disquieting conclusion from this research was that those shutters should be installed sooner, rather than later. We’ve had a good ten year run since Charley, and in fact, the last 50 or so years since Hurricane Alma in 1966 and Donna in 1960 have been relatively benign. The picture is a little different when we extend the search back 180 years to the beginning of reliable written history of the area, or the 145 years to the earliest data in the National Oceanic and Atmospheric Administration (“NOAA”) online storm tracking database¹.

Like almost all parts of Florida, Charlotte Harbor has had a stormy past. Weather watchers have developed a system for categorizing those tropical cyclones based on sustained surface wind velocity.

Sustained surface wind velocity	Categories of Tropical Cyclones using the Saffir-Simpson Scale
33 knots (38 mph or 62 km/hr) or less	Tropical Depression
34-63 knots (39-73 mph or 63-118 km/hr)	Tropical Storm
64-82 knots (74-95 mph or 119-153 km/h)	Category 1 hurricane
83-95 knots (96-110 mph or 154-177 km/h)	Category 2 hurricane
96-112 knots (111-129 mph or 178-208 km/h)	Category 3 hurricane
113-136 knots (130-156 mph or 209-251 km/h)	Category 4 hurricane
137 knots (157 mph or 252 km/h) or higher	Category 5 hurricane

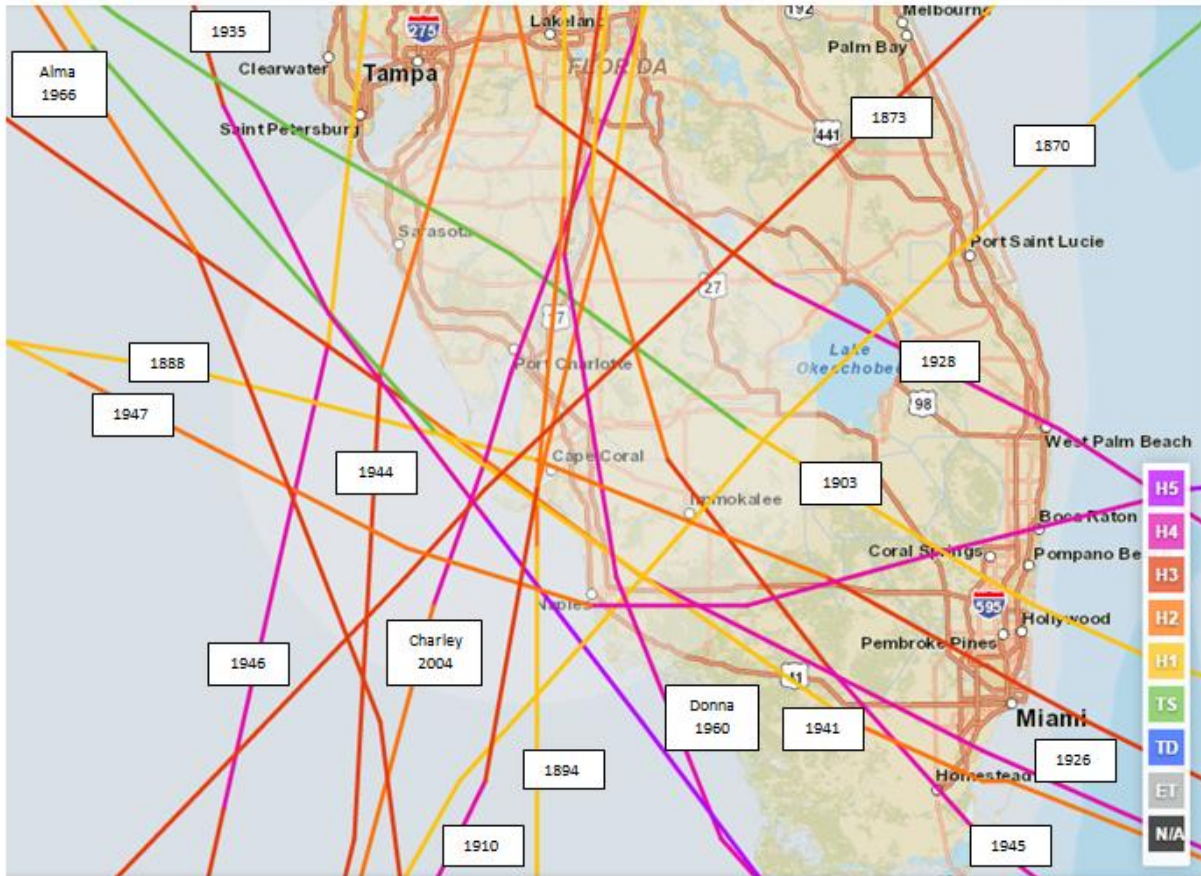
¹ <http://coast.noaa.gov/hurricanes>

Using the online NOAA website, it is possible to create an infinite number of map simulations of the tracks of past hurricanes and tropical storms for any part of the USA. After accessing the site at <http://coast.noaa.gov/hurricanes> it is a simple task of first typing in a location, then selecting a radius in nautical miles and finally selecting the “advanced filters” in the Refine Search section of the page to select any number of iterations including type of storm, month, or years range.

There have been twenty-four hurricanes or tropical storms/depressions which have tracked within a 20 mile radius of BSM since 1870. In that same 145 year period there have been sixty-five hurricanes and tropical storms/depressions which have tracked within a 60 mile radius of the Marina. Of those sixty-five, seventeen were classified as Category 1 to 5 hurricanes (Map 1). Seventeen is certainly an intimidating number, but the good news is that the same analysis for other popular Florida cities indicates the following number of hurricanes: Jacksonville – 21; Sarasota – 24; Naples – 25; Tampa – 26; Panama City – 28; Orlando – 28; The Villages – 30; Key West – 33; West Palm, 34; Miami – 36.

There are also many examples of storms still causing significant damage while passing more than 60 miles away, and when downgraded below hurricane strength. Tropical Storm Sandy is a good example as it landed in Atlantic City, 125 miles from the serious storm surge damage it caused in Manhattan, and had been re-categorized as an extra-tropical storm when it came ashore. Hurricanes which have passed well offshore of the gulf coast have sometimes been the cause of coastal flooding.

Map 1 - 1870-2014 - Seventeen Category 1 to 5 Hurricanes Tracked Within 60 Miles of Burnt Store Marina²



Dare we be complacent given the infrequent recent storm experience in southwest Florida? Should we take comfort from the above analysis of the NOAA data which indicates we may have one of the best hurricane track records in the state? Not on your life! It becomes apparent when studying these tracks that there is little pattern to them and that we are experiencing an historically quiet period. It is also difficult to anticipate the potential severity of these storms as they form in the Atlantic basin.

Brief portraits of a few of the storms which have impacted the Gulf coast of Florida over the last 180 years are summarized below to illustrate what we could experience if a broad, slow moving hurricane skirts our coast.

² Map generated from data on <http://coast.noaa.gov/hurricanes> - Filters – 60 mile radius of Burnt Store Marina; Category 1 to 5 storms; Period 1870-1925; years and names added to the tracks by the author based on the underlying data.

1848 – Several trading posts in Charlotte Harbor (possibly including Burnt Store) were destroyed and both Stump Pass in Englewood and New Pass in Sarasota were created. Fort Brooke in Tampa Bay was also destroyed.

1873 – Punta Rassa at the mouth of the Caloosahatchee was destroyed by a 14 foot storm surge which also flooded Sanibel with 5 feet of salt water.

1878 – In the Gale of 1878 it poured rain non-stop for four days in the interior. Huge areas on the southwest coast were flooded and the fresh water entering the gulf killed virtually all of the fish for miles out into the gulf.

1910 – Seven Cuban fishermen were killed when their schooners were sunk off Punta Gorda and a school was blown off its foundations. Fort Myers Beach was swallowed and much of the water was blown out of Tampa Bay.

1921 – The Tampa Bay Hurricane produced a tide 7 feet above normal at Punta Gorda and a 12 foot storm surge in Tampa Bay which flooded the city. The Punta Gorda City Wharf at the foot of Sullivan St. was destroyed.

1926 – The Great Miami Hurricane hit Charlotte Harbor after crossing the state. Redfish Pass was created splitting Captiva and North Captiva Islands. The almost completed first Matlacha Bridge was toppled into the channel when a barge hit it.

1928 – The Great Okeechobee Hurricane killed over 1,800 in West Palm and the area south of Okeechobee and caused much flooding along the west coast. The 1926 and 1928 storms were featured in the final chapters of the novel “A Land Remembered”.

1935 – The Labor Day Hurricane damaged much of the Florida Keys and maintained category 4 status when it struck Charlotte Harbor causing extensive flooding.

1941-1947 – Charlotte Harbor was struck by six different tropical storms or hurricanes causing much damage. In 1944 a storm surge covered Gasparilla Island. On September 18, 1947 8.7 inches of rain were reported at Fort Myers.

1960 – Hurricane Donna (in 1950 hurricanes began receiving names) travelled just inland of Charlotte Harbor and had winds of 130 mph (as measured by FPL). Water was first pulled out of Charlotte Harbor then brought back in causing an eight foot storm surge which flooded Punta Gorda. The steeple of the Punta Gorda Presbyterian Church was toppled (in the 1926 storm the bell tower of the Episcopal Church of the Good Shepherd was knocked over).

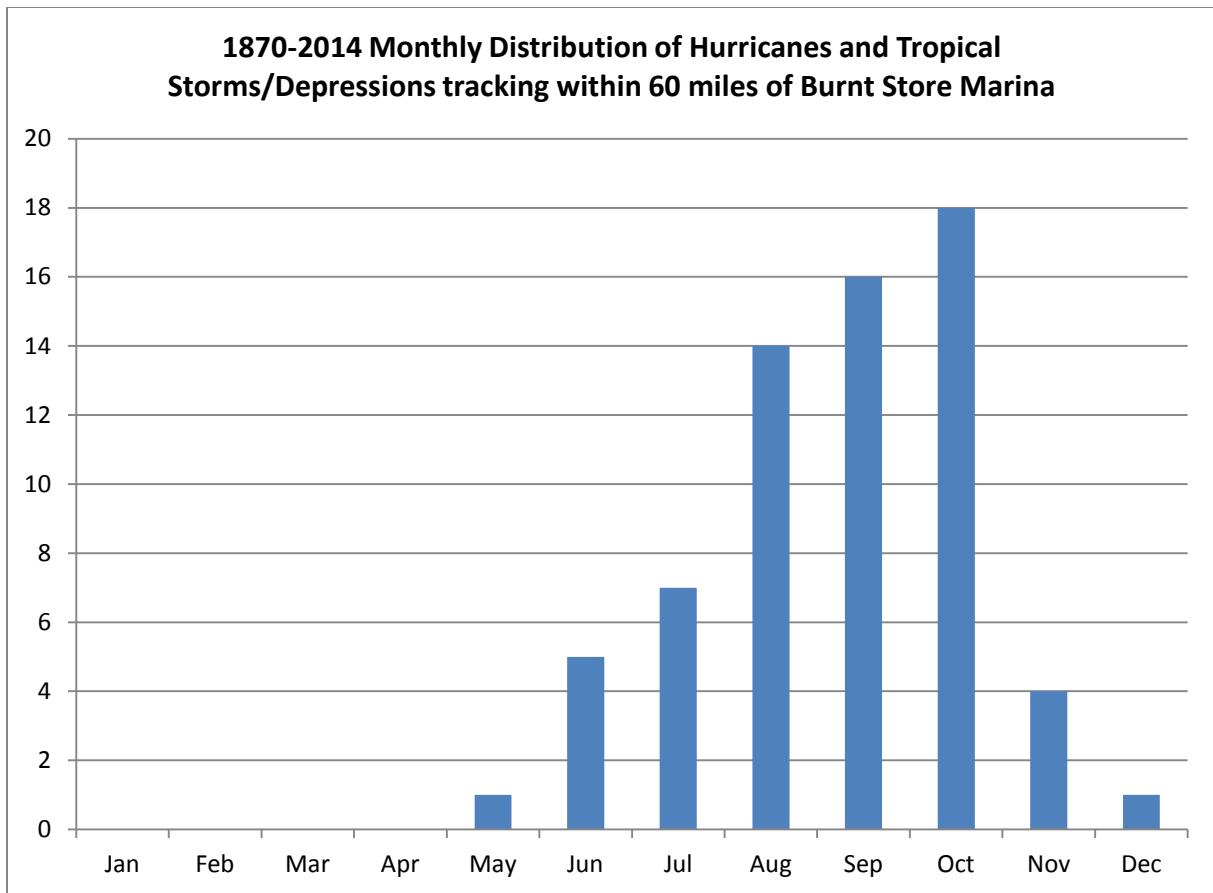
2004 – Hurricane Charley – say no more!

More details of these and many other tropical storms are well documented and illustrated in a very readable book by Jay Barnes titled “Florida’s Hurricane History” which is available at the Lee County Library³.

Further analysis of the NOAA data can also be performed to identify the likelihood of a storm striking in any given month (see chart below⁴).

³ Barnes, Jay. *Florida’s Hurricane History, Second Edition*, The University of North Carolina Press, Chapel Hill, 2007

⁴ Table prepared by first analyzing data on <http://coast.noaa.gov/hurricanes>: Filters – 60 mile radius of Burnt Store Marina; All storms; Period 1870-2014; report run once for each of the 12 calendar months



If, as I believe, risk awareness aids risk mitigation, I hope that I have achieved my goal of focusing attention on the potential for severe weather in our area. Do not be lulled into a false sense of security by the absence of recent storms. Review and understand your insurance coverage (see Appendix), keep your shutters at the ready and have a good hurricane preparedness plan (many examples can be found online) which you should share with family members and perhaps neighbors.

This chapter and its Appendix were published as a three part set of articles in the August 2015 issue of The Beacon, the Burnt Store Marina Community Newspaper.

Appendix – Hurricane and Flood Insurance Coverage Review

Deciphering the intricacies of Florida hurricane and flood insurance can be a daunting task. Below are a few pointers to help with such a review.

Hurricane Deductible – Most Florida hurricane policies include a 2% deductible. Some purchasers assume that the 2% deductible is calculated as a percent of the potential claim (e.g. for a \$25,000 claim @ 2% that would be a \$500 deductible). Unfortunately, this is not how it works. The 2% is applied to the replacement cost of the whole house value and that is the amount which must be deducted from a claim. If the house has a replacement cost of \$300,000 then the claim recoverable for that same \$25,000 claim would be \$25,000 less 2% of the \$300,000 (\$6,000 deductible) leaving a recoverable of only \$19,000.

Building Codes – If your house is relatively new, chances are that you will benefit from much improved building code requirements implemented in the last fifteen years (often referred to as the Miami-Dade Code). The cost of hurricane insurance can be reduced if you have the proper type of roof truss attachments and if you have installed qualifying hurricane shutters. Credit is only given if every opening is protected and the garage door has special vertical wind mitigation support struts. Much of the damage sustained in Punta Gorda during Charley was to buildings constructed before the introduction of the new codes.

Unfortunately, the insurance industry has a genius for thinking up ways to annoy some of their clients. The one which particularly grates with me is the “ordinance & law coverage” which must be purchased separately at additional cost if you wish to be reimbursed for the cost to rebuild to current code as opposed to the building code in effect when the house was originally built. If you wish to rebuild, you have no choice but to build to current code so I would rather this was built into the standard coverage. The arguments for breaking it out separately is that this represents an improvement to the house and some may choose not to rebuild and only need to be reimbursed for what they have lost.

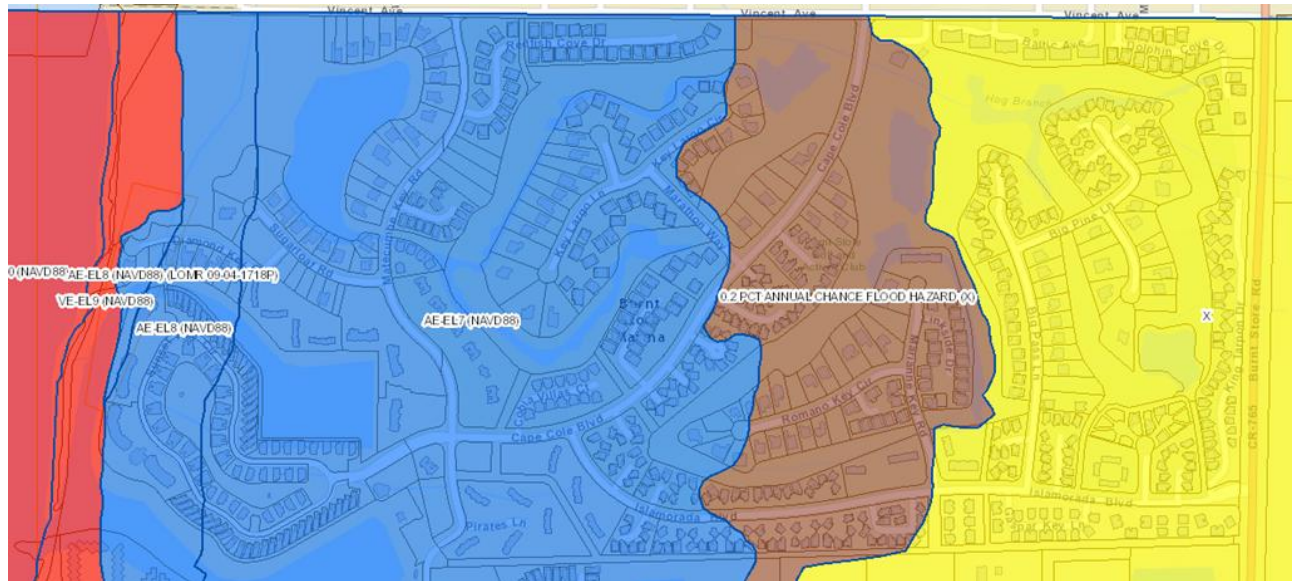
Cage Damage – One of the most exposed and fragile elements of many Florida homes is the pool and lanai screened cage. After Hurricane Charley many cages were destroyed. While replacement cost insurance can be purchased relatively cheaply for the standard property damage element of a homeowners’ policy, the coverage extended for the cage is restricted to an “actual cash value” basis. This translates roughly as “depreciated value”. Given that most cages in Burnt Store Marina are at least 10 years old, the depreciated value could be quite low. Most policies also contain a fairly low limit such as \$10,000 on the “wind/hail screened enclosure & carport coverage”. The endorsement is cheap, but the coverage is limited and probably provides a false sense of comfort. The deductible which should be applied to the cage is either the very high hurricane deductible, if that is the cause of the damage, or the much lower all other perils (“AOP”) deductible if the damage comes from another cause such as a falling tree. In many cases the AOP deductible can be as high as \$2,500.

Flood Insurance – The first thing to understand when considering Flood insurance is that water entering a house from over the ground is not covered by a normal homeowners policy. A separate policy is required, usually underwritten by the National Flood Insurance Program (“NFIP”). The second consideration is which flood zone your house sits in. The Special Flood Hazard Area (“SFHA”, also called the FEMA floodplain) is shown in blue on the map on the next page. The SFHA is rated as having a 1 in 100 year chance of flood while the area in brown is rated as having a 1 in 500 year chance of flood. Big Pass Lane and east, shown in yellow, have an even lower chance of flooding. These, of course, are no more than educated guesses by the engineers who have prepared them and are subject to periodic review and change. FEMA is currently studying coastal hazards for Lee, Charlotte and Hendry Counties. As a result of that study, Flood Insurance Rate Maps for Lee County will likely be updated effective in 2018. Interestingly, these zones are calculated by elevation and proximity to Charlotte Harbor, which suggests that the primary risk they are addressing is storm surge⁵. Another risk not to be ignored is that of flooding from heavy rains in the interior. The area inland

⁵ Per Lee County website - <http://www.leegov.com/dcd/flood/firm/zones>

from Burnt Store Marina is very flat and has a history of sheet flooding as evidenced by the June 23, 2003 flash flooding which closed three miles of Burnt Store Road from the Marina south to Kismet Parkway (culverts and drainage systems have been improved since then). According to the National Climatic Database Center there were 38 flooding events from rain storms in Lee County in the fifteen years between 1994 and 2009.

Burnt Store Marina Flood Zones – April 30, 2015⁶



The third important factor when considering flood insurance is whether your house is financed or not. Most lenders require flood insurance if you are within an SFHA zone (blue above). Recent changes to the federal legislation governing the NFIP enacted on April 1, 2015 will result in large premium increases for many homeowners in high risk areas. It also contains yet another “tax” on non-homesteaders in the form of a \$250 surcharge for non-primary residences (homesteaders pay \$25).

Thank-you to Alexia Martin of Whitco Insurance Agency for reviewing an early draft of this Appendix.

⁶ Lee County <http://leegis.maps.arcgis.com/apps/Solutions/s2.html?appid=0e132205d6be493c919e420a19feb0f>

