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National Weather Service

WEATHER FORECAST OFFICE (WFO) Miami, Florida

Memorial Web Page

for the

1928



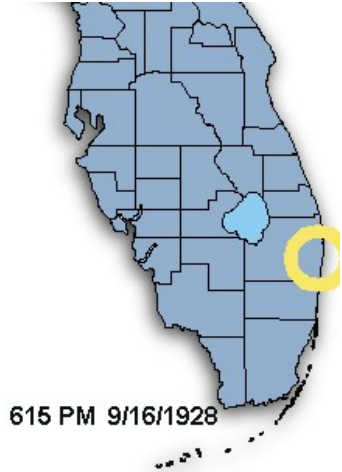
Belle Glade: Wreckage of Ford garage. Boree building (left);
Pioneer building (right).

Okeechobee Hurricane

In September, 1928, only about 50,000 persons lived in South Florida. The land and real estate boom was already beginning to fade, although many subdivisions and new communities were still being built. The devastating Great Miami Hurricane of September, 1926, had already sounded a loud alarm to the new residents about the vulnerability of their new homes to tropical cyclones. However, most of the damage from that storm was in Dade and Broward counties. Even so, a bellwether of what was to come occurred with the Great Miami Hurricane of 1926 as flood waters from Lake Okeechobee were swept by that storm into Moore Haven, the county seat of Glades County, killing over 100 people.

The City of Palm Beach, founded only 34 years earlier by Henry Flagler, was incorporated in 1911 and had become a playground for the rich and famous, while West Palm Beach grew up on the opposite side of Lake Worth as a place where the support staff lived. The Atlantic breezes were balmy and the climate was warm. On the opposite side of the county, a quite different situation was emerging. The rich, black muck soil near Lake Okeechobee was already being utilized for its tremendous agricultural productivity. The newly incorporated town of Belle Glade was growing steadily, fueled by the rapidly expanding agriculture in fields nearby. A rural, agrarian society, dependent on migrant labor, was plowing and harvesting along the shores of the lake behind a hastily built muck levee.

Only two years after the Great Miami Hurricane, what would become the second category 4 ([Saffir-Simpson scale](#)) hurricane to strike South Florida in as many years formed off the coast of Africa in early September. It churned across the Atlantic, and devastated the island of Guadeloupe on September 12, moved through the Virgin Islands, and struck a direct hit on Puerto Rico on the 13th, El Día de San Felipe. More than 300 persons were killed by this storm in Puerto Rico, and it is known as the San Felipe II Hurricane because of the day on which it struck. To some extent, the devastation in Puerto Rico provided some warning to residents of Florida's east coast. It moved through the Bahama Islands on September 14-15, and on Sunday evening around 6:15 PM, September 16, the hurricane made landfall in the United States in Palm Beach County between Jupiter and Boca Raton.



615 PM 9/16/1928

Approximate location of the landfall
Of the Great Okeechobee/San Felipe
Hurricane of September, 1928.

Damage in coastal Palm Beach County was severe especially in the Jupiter area where the eye wall of the hurricane persisted longer than at any other location because of where the storm crossed the coast. A storm surge around 10 feet with waves likely as high as 20 feet crashed into the barrier islands including Palm Beach. Pictures (source is *Palm Beach Hurricane 92 Views*, American Autochrome Company, Chicago, IL, 1928) of the damages along the Palm Beach County coast from Boca Raton to Jupiter are below (click the thumbnails for a larger view):

Boca Raton



Delray Beach



Lake Worth



Palm Beach



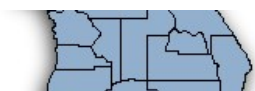
West Palm Beach



Pompano Beach



However, the greatest loss of life was around Lake Okeechobee. As the category 4 hurricane moved inland, the strong winds piled the water up at the south end of the lake, ultimately topping the levee and rushing out onto the fertile land. Thousands of people, mostly non-white migrant farm workers, drowned as water several feet deep spread over an area approximately 6 miles deep and 75 miles long around the south end of the lake.





930 - 10 PM 9/16/1928

Approximate location of the eye of the 1928 hurricane
As it swept water out of Lake Okeechobee and over
the towns of Belle Glade, Chosen, Pahokee, South Bay,
and Bean City. More than 2,500 people drowned.



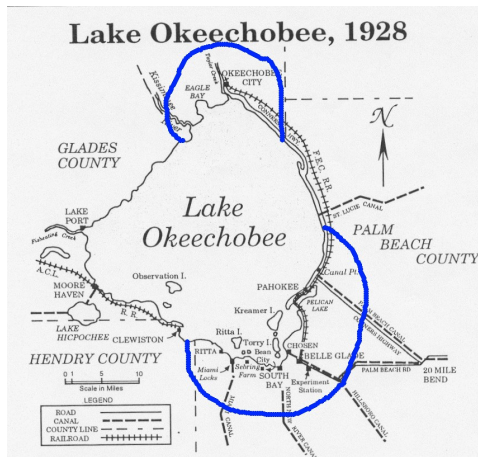
Click the movie logo above to run or ftp a QuickTime movie loop (mov file) of computer simulated Lake Okeechobee water swept by the 1928 Okeechobee Hurricane coming out and over the 4-5 foot levee (at the time). Today's [Hoover Dike](#) is nearly 30 feet high but needs some repair. Loop is courtesy of Brian Jarvinen and the Technical Support Branch SLOSH model unit of the [Tropical Prediction Center](#). Please take note: playing this move loop requires Quick Time Player from Apple Computer Corp or another suitable player. The movie file is VERY large... 33.4 Megabytes in size, and depending on your connection speed and time of day, could require quite a length of time to download.

Lake Okeechobee Region



A book called *Okeechobee Hurricane* by Lawrence E. Will (who experienced the storm first hand) contains some of the best narrative of what living through the hurricane was like near Lake Okeechobee. The following description is from his book:

The period of the lull here had apparently been between 8:30 and 9:30 that night. The exact time of the breaking of the dike is difficult to determine. There were several breaks and they may have occurred at slightly different times. Although it took an appreciable time for the flood to arrive in Belle Glade, those in the hotel said that when it did arrive, it rose on the steps at the rate of an inch a minute. The highest crest, which was during the maximum velocity of the wind during the second phase of the storm, was, according to my recollection, at 10:20 PM. This crest was a rolling swell of short duration, after which the water fell about a foot and remained nearly constant for twenty minutes. This mark in Belle Glade was about seven feet above the ground, nearer the lake it was a great deal higher, for example, in Stein's house at Chosen, 11 feet 3 inches, and on Torry (Island) 11 feet, 8 inches, and similar heights in South Bay. As the flood advanced, it necessarily fanned out, becoming shallower. At the (University of Florida) Experiment Station its maximum depth was three feet, and that, strangely enough, according to foreman Tedder, was after daylight.



Map of Lake Okeechobee (from Gross, 1995)
Showing approximate areas of the flood.

Of course, the effect of the flood was devastating, and the loss of life, both human and animal, was apocalyptic. Damages from this hurricane were estimated around 25 million dollars which, normalized for population, wealth, and inflation, would be around 16 billion dollars today (Landsea, 2002). The horrible flood in the towns of Pahokee, Canal Point, Chosen, Belle Glade, and South Bay resulted in the drownings of many people, probably three quarters or more of whom were non-white field workers. The flood waters lasted for several weeks, and survivors were found wandering as late as September 22.

Memorial services, one white, one non-white, were held at the same time but at different locations on Sunday, September 30, 1928, in West Palm Beach. The *Miami Herald* article (1928) on the memorial services reported nearly 1,000 victims of the hurricane disaster, 674 of whom were non-white. Additional *Miami Daily News* articles stated a death toll of 2,200 (September 24, 1928) and 2,300 (September 25, 1928), along with the observation that only the death toll in the Galveston hurricane of 1900 was higher. In Will's book, which seems to have the best detail on the 1928 hurricane of any source available, the estimated death toll was at first set at 2,300 but later lowered to 1,770. Will quotes the final Red Cross report in 1929 as stating that 1,810 people were killed and 1,849 were injured in the 1928 hurricane. But Will also quoted a news release from the Florida State Board of Health on December 7, 1928, which estimated the deaths in Palm Beach County alone at 1,833. From Will's book:

The exact number of those who perished in the Okeechobee storm can never be ascertained. Probably three-fourths or more of the casualties were Negroes (sic), many of whom had come from the Bahama Islands. Accounting for members of this race was complicated by the migratory habits of their kind and the fact that most of them were known, even to their friends, only by a nickname. Another reason the number cannot be ascertained was that many were carried by the flood far into the sawgrass wastes.

The NWS had long listed the Okeechobee Hurricane of 1928 death toll as 1,836, making it the second worst hurricane death toll since the Galveston Hurricane of 1900. No doubt use of this figure by the NWS dates to Mitchell (1928), who quoted a Red Cross official casualty estimate dated October 28, 1928. Dunn and Miller (1960) also quote the Red Cross figure. Pfost (2003) called for a revision of the death toll to 2,500 with an asterisk, denoting that the exact number of people killed will never be known. Blake et al. in the latest (2005) update to the National Hurricane Center publication "The Deadliest, Costliest, and Most Intense United States Tropical Cyclones" lists the death toll from the Okeechobee Hurricane of 1928 as "at least 2,500", establishing the Okeechobee Hurricane of 1928 the second worst natural disaster as far as number of people killed in U.S. history.

The hurricane continued northwest across the lake and then turned north through Highlands and Polk counties, passing near Gainesville and west of Jacksonville before paralleling the Atlantic coasts of Georgia and the Carolinas. It finally moved inland over Virginia and became extratropical over Pennsylvania and the Great Lakes.

There is still tangible evidence of this historical tragedy. In West Palm Beach's Woodlawn Cemetery, a [stone marker](#) stands today in memory of 69 victims of the storm. Also in West Palm Beach, at the corner of Tamarind Avenue and 25th Street, a new [State of Florida historical marker](#) stands in sentinel over the place where 674 victims of the storm were buried after being transported from the Belle Glade area. At the Port Mayaca cemetery in Martin County, [another stone marker](#) was placed over a mass grave of about 1,600 victims. Near the Belle Glade Public Library in downtown Belle Glade, a [beautiful memorial](#) stands as a remembrance of the deadly storm and its devastation.

While today's Hoover Dike with a grade elevation approaching 30 feet is reassuring, it has not yet been tested with a direct hit by a category 4 or 5 hurricane, and it needs continuing maintenance. The only sure thing is that South Florida will have future encounters with hurricanes, perhaps even a category 4 or 5, in years to come. It is important that South Florida residents know our hurricane history in order to better prepare for tomorrow's hurricane threats.

REFERENCES

Blake, Eric S., E. N. Rappaport, J. D. Jarrell, and C.W. Landsea, 2005: The Deadliest, Costliest, and Most Intense United States Tropical Cyclones from 1851 to 2004 (And Other Frequently Requested Hurricane Facts). [NOAA Technical Memorandum NWS TPC-4](#), Tropical Prediction Center, Miami, FL.

Dunn, Gordon E., and B. I. Miller, 1960: *Atlantic Hurricanes*, Louisiana State University Press, Baton Rouge, LA., 326 pages.

Landsea, Christopher W., 2002: personal communication.

Gross, Eric L., 1995: *Somebody Got Drowned, Lord: Florida and the Great Okeechobee Hurricane Disaster of 1928*, Vols I and II, Dissertation submitted to the Department of History in partial fulfillment of the requirements for a doctoral degree, College of Arts and Sciences, Florida State University, Tallahassee, FL.

Miami Daily News, Monday, September 24, 1928, Miami Public Library.

Miami Daily News, Tuesday, September 25, 1928, Miami Public Library.

Miami Herald, Monday, October 1, 1928, University of Miami, Fla. Otto G. Richter Library.

Mitchell, Charles L., 1928: The West Indian Hurricane of September 10-20, 1928. *Mon. Wea. Rev.*, **56**, pages 347-350.

Mykle, Robert, 2002: *Killer 'Cane*. Cooper Square Press, New York, NY.

Palm Beach Hurricane 92 Views, American Autochrome Company, Chicago, IL, 1928

[Pfost, Russell, 2003: Reassessing the Impact of Two Historical Florida Hurricanes. *Bulletin of the American Meteorological Society*, **84**, Issue 10 \(October 2003\) pp. 1367-1372.](#)

Pielke, Roger A., and C. W. Landsea, 1998: Normalized Hurricane Damages in the United States: 1925-95. *Wea. Forecasting*, **13**, 621-631.

Will, Lawrence E., 1990: *Okeechobee Hurricane and the Hoover Dike*. Glades Historical Society, Belle Glade, FL, third edition, second printing.

Recommended Information Source

Kleinberg, Eliot, 2004: *Black Cloud : The Great Hurricane of 1928*. Carroll and Graf, New York, NY.



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