



NOAA - National Weather Service

Tampa Bay Area

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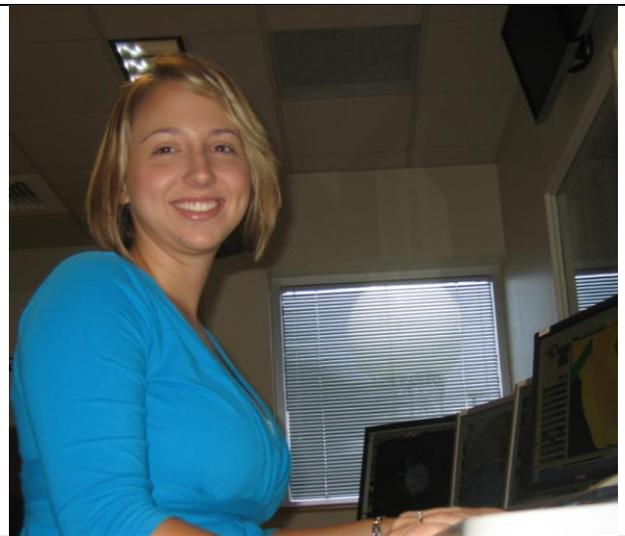
<http://weather.gov/tampa>

USF Students are preserving NOAA's heritage

NOAA student employees Kortnie Pugh and Alicia Williams are working with NWS Science Officer Charlie Paxton, forecasters Jennifer Colson and Tony Reynes, and Dr. Jennifer Collins from USF on a project funded by a NOAA and the Preserve America Initiative grant. (<http://preserveamerica.noaa.gov>) This project will enhance NOAA's mission to inform the nation of natural hazards by documenting major weather events of the past. Some of the weather events that impacted residents of the Florida peninsula date back to the 1800's. In addition, NWS record books dating back to 1890 were preserved and various other weather tools of the past were photographed and will be displayed on future web pages.



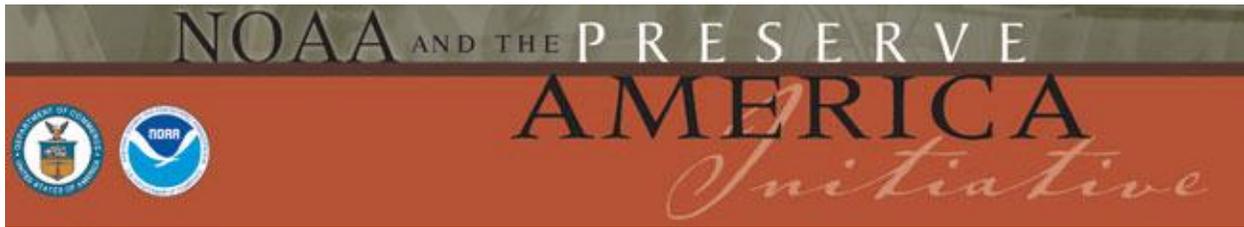
NOAA student employee Kortnie Pugh.



NOAA student employee Alicia Williams.

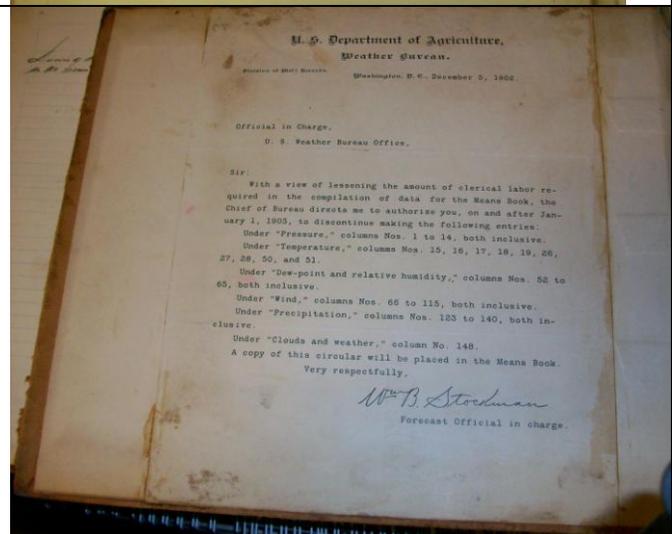
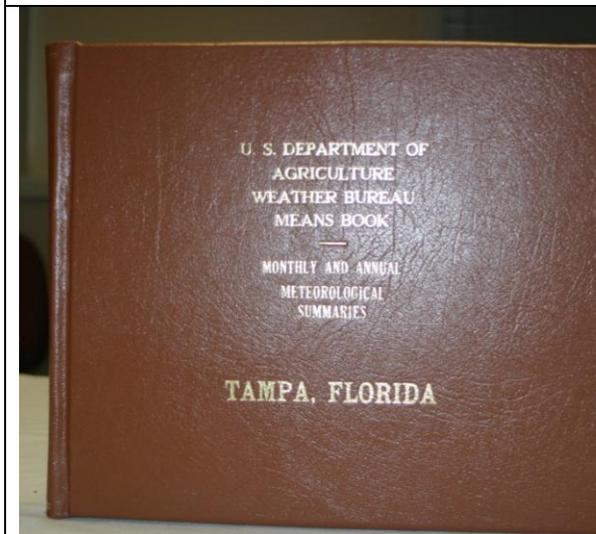
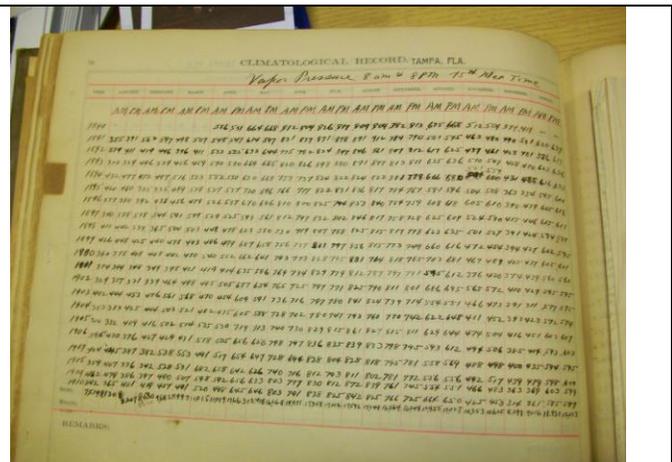
People's perceptions are often misleading; especially related to weather. Many feel they have experienced some of the worst Mother Nature has to offer. Their perception of their hurricane experience may be incorrect and, as a result, they may not respond appropriately to future warnings. Since the decisions people make are often strongly influenced by their most recent experiences, it is important to dispel any misperceptions with facts. The web pages documenting long forgotten historical events will be useful to residents, the media and emergency planners.

Hurricane, flood, tornado, and freeze stories will be integrated into NOAA heritage web pages. The last major hurricane to impact the greater Tampa Bay area occurred in 1921 and few are around who experienced it. Central Florida is one of the most tornado prone parts of the county and cool season thunderstorms and summertime tropical systems produce killer tornadoes on occasion. Floods are most commonly associated with tropical storms and hurricanes but other cool season rain events have occurred creating tremendous impacts. Winter agricultural crops play a major role in Florida's economy and freezes have produced major interruptions in growing cycles costing millions of dollars. It is our hope that a better knowledge of the past will result in improved responses to future weather warnings.



NOAA Record Book Rebinding

The federal weather service has been a part of the Tampa Bay area since 1890. The Tampa Bay Area National Weather Service office has two leather bound U.S. Weather Bureau means books dating back to the weather service's inception. These hand-scribed books were part of the recent Treasures of NOAA's Ark tour in St Petersburg, FL. Unfortunately; time took a toll on these books. The historical weather record books were recently rebound through a NOAA and the Preserve America Initiative grant (<http://preserveamerica.noaa.gov>).





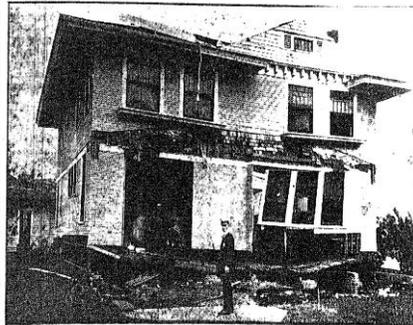
1921 Hurricane Inundates West Florida

Fact Sheet

- October 25, 1921
- Maximum Intensity: Category 4
- Intensity at Landfall: Category 2
- 3 deaths
- \$2 Million in damage
- Minimum Pressure: 27.80 in (941 mb)
- Pressure at landfall: 28.12 in (952 mb)
- Max rainfall: 11.73 in at St. Leo, FL
- Max storm surge: ~10.5 feet
- Maximum winds at landfall: 75 mph



DEVASTATION ALONG BAYSHORE BOULEVARD



Pictures of damage in Tampa Bay.

Summary of event:

The morning of the event a small column on the front page of the Tampa Times was dedicated to warning the public of the impending disaster. The final statement given by Meteorologist W. J. Bennett at 11:30 on October 24, 1921 was that, "we are apparently in the apparent path of the storm, but in the past in practically identical circumstances, similar storms have always veered either to the north or the south of us, and probably this one will do likewise." The last advisory at the time of printing said, "Tropical storm central



near latitude 25 north, longitude 85 west and moving slowly north northeastward, attended by gales over east gulf and winds of hurricane forces near its center.” Approximately 42 hours of rainfall preceded landfall, and the rainfall for the event totaled 8.53 inches at the Tampa weather bureau. The estimated highest tide above mean low water was 10.5 feet.

After the storm had passed, the damage to the Tampa Bay area was apparent. Rumors circulated that Pass-a-Grille was wiped out, and that nearly \$5 million of damage was done. Of those that survived the fury of the storm, several harrowing stories came to light. One elderly man clung to a palm tree throughout the night with his wife in his grasp. Unfortunately he was unable to save her from the pounding waves and she was lost to the storm. Another man climbed a tree and stayed there for the night in order to escape surge waters. A woman rode out the storm in a cockleshell rowboat for 11 hours. She was swept 10 miles across the bay. Another man swam the estimated half mile from his house to dry land with his two-year-old child on his back after the flood waters inundated his house. He enlisted the local firefighters to rescue the rest of his marooned family from the second floor of his house.

It appears the final loss was estimated at less than \$2 million and the state of Florida sustained the loss of three lives. At 10:30 on the morning after the hurricane’s landfall Red Cross supplies were sent to desolate cities. Homes along Bayshore in Tampa were devastated, and there was significant property damage in Pass-a-Grille and surrounding coastal areas.

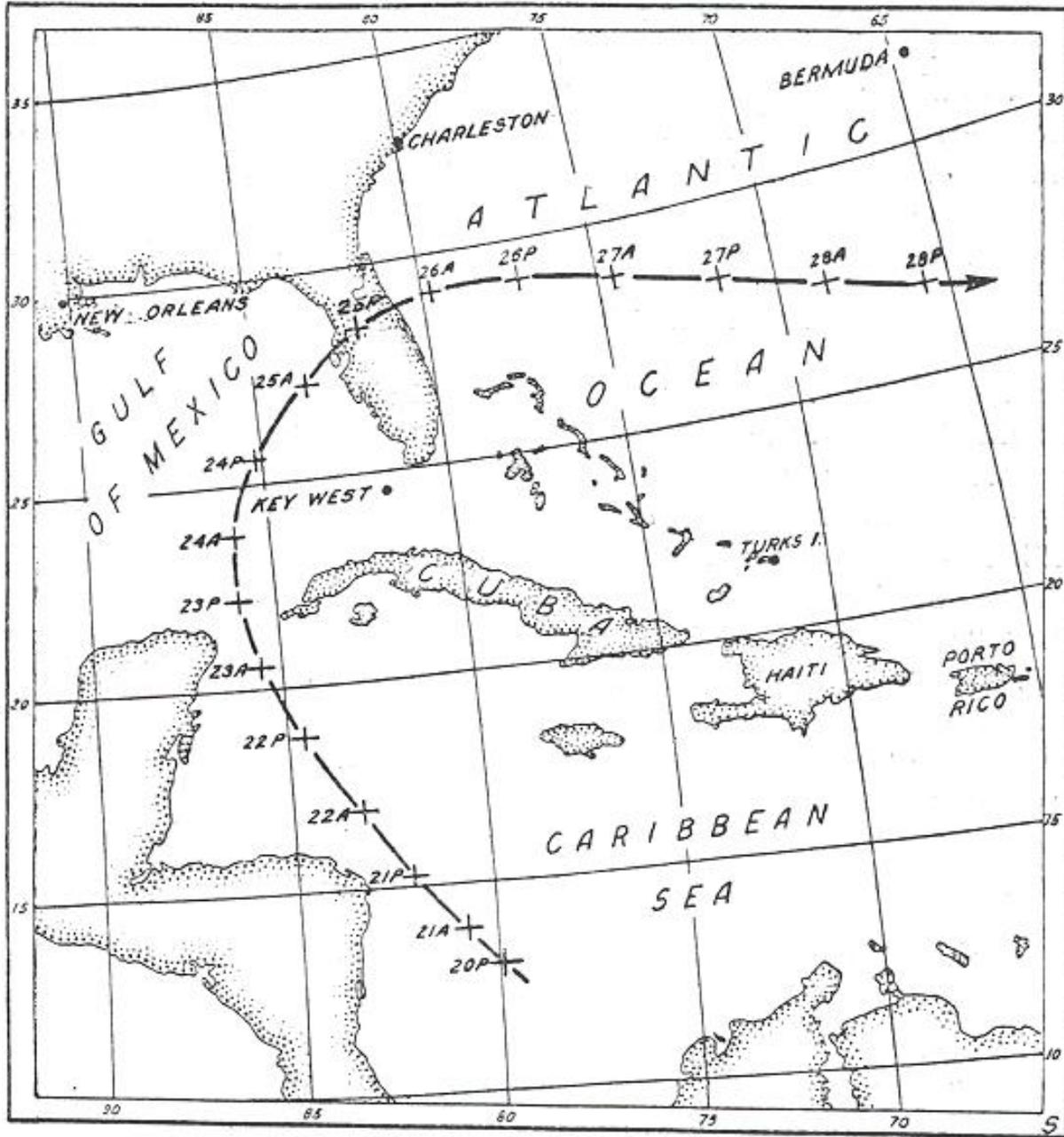


FIG. 1.—Track of tropical hurricane, October 20–28, 1921.

Picture of proposed storm track by the Weather Bureau.

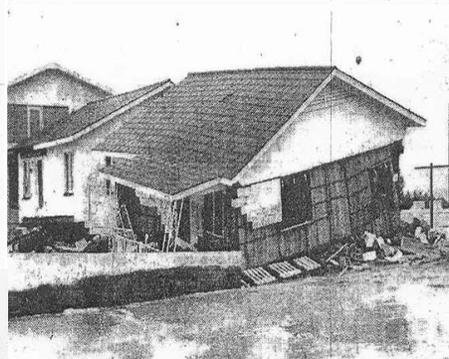


CITY HELD IN DISMAL GRIP OF GALE TWENTY-FOUR HOURS

Deluge of Rain and Wind of 60 Mile Intensity Envelop Tampa and Vicinity, Carrying Death and Huge Property Destruction in Wake

YBOR CITY, PORT TAMPA AND BAY SHORE SUFFER

Great Gaping Sections of Seawall Torn Away; Bayshore to Port Tampa Is One Long Stretch of Desolation.



COURSE OF THE RECENT TROPICAL STORM



Meteorologist W. J. Bennett last night made up the above map showing the whence and the whither of the disastrous storm which swept across the state Tuesday. To show how erratic the path of the storm was, he has drawn the path of a typical West Indian storm, taking as his example the one of 1894. Discussing the storm, Mr. Bennett said to be expected for some time to take the warnings of this one seriously. Tampa has boasted that it is invulnerable. We should prepare for the

DRYS PROTEST LETTING DOWN OF BEER BARS



In Rowboat for 11 Hours At Mercy of the Storm

MRS. C. W. GREENE HAS HARROWING EXPERIENCE —IS BLOWN TEN MILES ACROSS THE BAY IN A COCKLESHELL

STORM SCARES BUILDERS OFF

Only Handful of Permits Issued; One for 'Greasing Station'

100-mile Wind at Punta Rassa When Storm Was at Height; Heavy Damage

BRIDGES TO ISLAND POINTS SWEEP AWAY—LOSS OF LIFE IS SMALL—EAST COAST AND NORTH FLORIDA HAVE GALES

ESTIMATED LOSSES MORE THAN MILLION DOLLARS

Citrus Crop Damage Piles Into Tremendous Total, But Correct Estimate Must Await Detailed Inquiry by Experts.

TWO DEAD AT ST. PETERSBURG; TWELVE ARE TRAPPED ON ISLAND

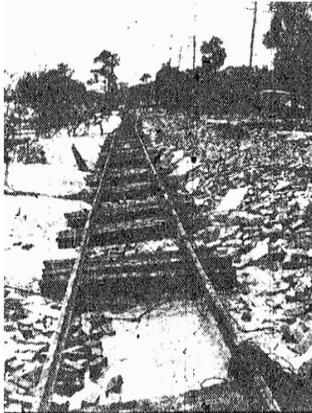
Hurricane Centers Its Attack on Pass-a-Grille, Clearwater, St. Petersburg and Other West Coast Towns; Death Rides on Winds.

Newspaper headlines and damage pictures.



TAMPA

Aged Man Clinging to Tree, Sees Wife Lost



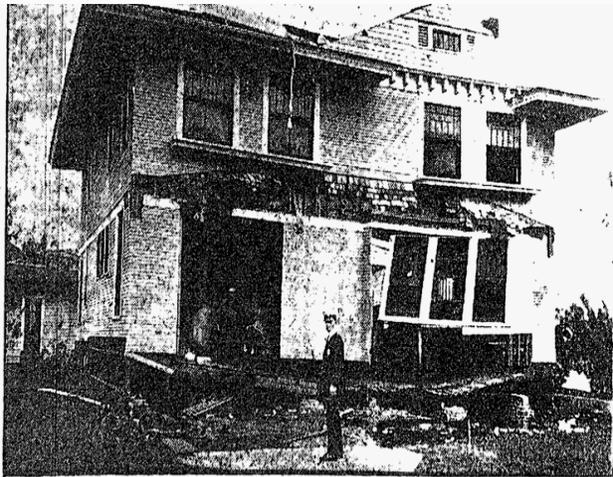
RECORDS PROPERTY LOSS ARE SMASHED

WORST FORMERLY IN OCTOBER, 1910

After clinging all night long to a palmtree on the exposed promontory at Rocky Point, J. D. Wilder, aged seventy years, early yesterday saw his wife, aged eighty-five years, swept from his grasp, to her death in the waves, which were sweeping to the northeastward. The two had clung to the tree through the long night hours. Mr. Wilder for the last several hours holding his wife. At last the strain was more than the aged man could bear and in a moment of inadvertant relaxation of his grasp, the end following.

DEVASTATION ALONG BAYSHORE BOULEVARD

DR. J. B. WALLACE'S HOME, BAYSHORE BOULEVARD



Newspaper clippings and damage pictures.



STORM *St. Petersburg Times* EXTRA

St. Petersburg, Fla., Wednesday Morning, Oct. 26, 1921

TROPICAL STORM SWEEPS CITY

Property Damage May Reach \$5,000,000; Two Men Die

RUMOR PASS-A-GRILLE WIPED OUT

With property loss estimated at \$5,000,000, and two known dead, the water front a sea of debris and sunken ships, St. Petersburg Tuesday was swept by the worst tropical storm in the history of the West coast, striking about 3 o'clock in the morning and lasting until late in the afternoon, unroofing hundreds of hotels, apartment houses and homes, tearing down power lines and isolating the city completely from the outside world.

Communication was completely cut off from Pass-a-Grille, where reports estimated the loss of life from 15 to 150, with the resort under five feet of water.

TWO MEN DIE

Newspaper clippings.



CLEARWATER SWEEP BY FURY OF STORM

OCT OBER 27, 1921.

CITY RECOVERING FROM GALE'S GRIP

CITY RECOVERS FROM GRIP OF TROPICAL HURRICANE

County Suffers Property Damage, Estimated at Less Than \$2,000,000, With Known Loss of Two Lives

Thousands Flock to Water Front Where Stumps of Piers and Sunken Ships Show City's Most Serious Loss; Wireless Brings First News of Outside World

With property loss conservatively estimated at less than \$2,000,000 St. Petersburg and Pinellas county Wednesday was rapidly recovering from the hurricane which swept this section Tuesday, bombarded cities and towns, wrecked harbors and shipping and paralyzed traffic and transportation.

The death list stood at two known dead with one man reported in a serious condition and an aged man missing from Coney Island. Loren Davis, son of J. S. Davis, of Lakeview avenue, has not been heard from since the storm. He is a wireless operator on board the oil ship Edgar F. Coney and was somewhere on the gulf when the storm stroke. His father believes that he is safe.

TENTED CITIES REMAIN INTACT

Canvas Domiciles Withstand Ravages of Storms

CITY COMES UP SMILING AFTER STORM PASSES

Clean-up Work Begun As Citizens Give Forth Thanks

WHINERS TO GET LITTLE HEARING

Rebuilding and Repair Seen on All Sides, Reports Show

St. Petersburg came up smiling.

TAMPA IS HARD HIT BY STORM; THREE DIE DURING HEAVY GALE

Worst Hurricane in City's History — Buildings Damaged, Docks Submerged and People Driven From Homes By Water

Two Schooners at Sea Believed to Have Been Lost

Newspaper clippings.

Links for more information:

<http://www.aoml.noaa.gov/general/lib/lib1/nhclib/mwreviews/1921.pdf>

Acknowledgments: NOAA Monthly Weather Review 1921, The Tampa Morning Tribune, The St. Petersburg Times, The Tampa Daily Times, The Plant City Courier, and The Burgert Brothers Collection.

2 students chronicling Bay area's weather history

Part of the project pairs basic forecast instruments with today's replacements.

By JENNIFER HILL
jhills@wfla.com

A weather map, crispy with age.

A trailer that housed a National Weather Service reporting site.

A picture that captures a ropy funnel cloud.

These are just some of the things being archived by college students Kourtne Pugh and Alicia Williams at the National Weather Service in Ruskin.

The two are cataloging the way things used to be when it came to severe weather in the Tampa Bay region. They have been combing through pictures, digital storage devices, weather maps and newspapers. The information comes from a region ranging from Lee County to Highlands County and up through Sumter County.

PIECES OF THE PAST

The National Weather Service Office in Ruskin is asking for your help with the historical collections project.

If you have pictures, old weather devices or stories of severe weather that happened in the region before 1950, e-mail Charlie.paxton@noaa.gov.

The National Weather Service is full of the most modern technology, but things weren't always that easy.

"Back then, they didn't have detailed reports like they do today, so it's amazing to see the stories they had back then, when news wasn't readily available every single day," Pugh said.

Newspaper reports would come a day after the weather event, and would be based on eyewitness accounts with very little scientific data.

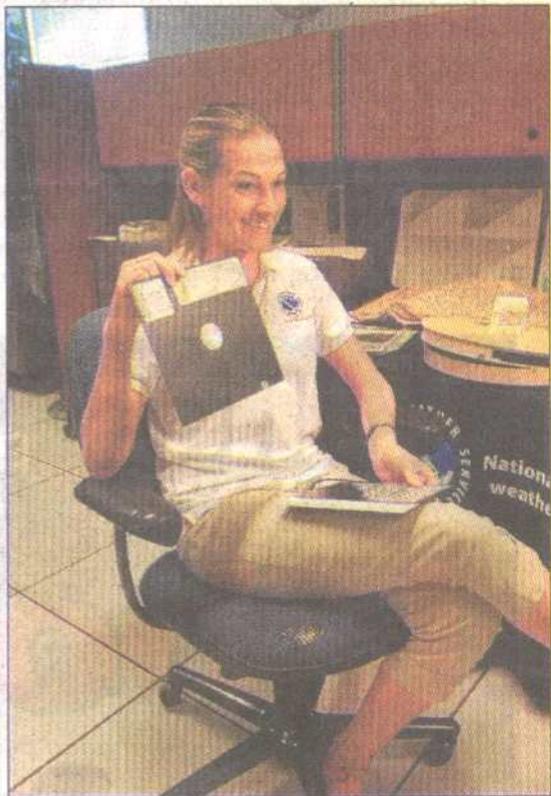
Pugh's work left her with an appreciation of 21st-century digital storage, because weather forecasting and climate data requires an enormous amount of data. One part of the project archives instruments used in the past and highlights what replaced it.

Pugh found an 8-inch floppy disk that doesn't have enough storage to hold a digital picture.

Williams' study of historical hurricanes showed how limited observations were.

"Back then," she said, "we missed a lot."

It was a world without satellites. Reports on a hurricane's center or eye didn't come in by the minute. Forecasters relied on reports from ships and other places affected by the storm, so the information could be 12 hours old. Storms believed to have started in the Caribbean may have started by the Azores. There was just no way to know.



Staff photos by MAURICE CAPOBIANCO

Kourtne Pugh discovered an 8-inch floppy disk incapable of holding one digital photograph.



Alicia Williams marvels at the improvements in weather forecasting technology.

Basic weather instruments did not give early forecasters much to go on and, unlike today, there was not a lot of time to prepare.

Instead of getting a steady stream of news about upcoming storms, forecasters used basic observations.

"They tracked it according to wave height," said Williams. "They knew something was coming, and, if the barometer was dropping, they knew it was going to be a storm."

Reporter Jennifer Hill can be reached at (813)314-5375.



1926 Hurricane Destroys Southwest Florida

Fact Sheet

Event date: September 11 – 22, 1926
Minimum pressure: 934.98 mb
Highest storm surge:
14 feet in Miami
6 feet in Ft. Myers

Landfall pressure: 934.98 mb
Death toll: ~373
Peak winds:
150 mph in Miami
100 mph in Punta Rassa



Figure 1. Damage to Knight's Chapel in Nokomis, FL

Summary of event:

Tropical storm force winds began in Lee County late in the evening on September 17, 1926. Storm warnings were placed along the southeast coast of Florida at noon on the 17th. At 11:00 pm those storm warnings became hurricane warnings. A mere 7 hours later the eye of the storm enveloped Miami, FL. The storm made landfall at 6:10 am in Miami, FL as a Category 4. The storm then exited the southwest coast of Florida near Bonita Springs, where the eye passed over Punta Rassa, FL at 3:15 pm on September 18, 1926 with a minimum pressure of 28.05 inches.

Fort Myers, FL experienced a storm surge of 4 to 6 feet above normal. The storm flooded the entire island of Sanibel with salt water, and forced almost half of the island's residents to relocate. The *Naples Star* reported that automobiles parked in the streets were, "filled with muddy saltwater and sea creatures. Those animals later died when the water subsided leaving a stench that lingered for weeks." An excerpt from Mr Reardon's personal journal stated that as he exited his shelter he saw, "whole sides of apartment blocks had been torn away... Everyone was looking for a drink of water – and there was none to be had... [There was] a boy covered in blood running blindly across the street." Similar accounts of destruction abound throughout the path of this Major Hurricane.

According to a report by Christopher Landsea for the National Hurricane Center, the Great Miami Hurricane of 1926 ranks as number one for damage costs as normalized to 1995 dollars by inflation.



Figure 2. Proposed storm tack according to the National Hurricane Center.



Fort Lauderdale, FL



Nokomis, FL



Fort Myers, FL



Fort Myers, FL

Figure 3. Damage photographs and flooded streets.



Boca Grande, FL



Boca Grande, FL



Boca Grande, FL



Boca Grande, FL

Figure 4. Flood waters and damage photographs.



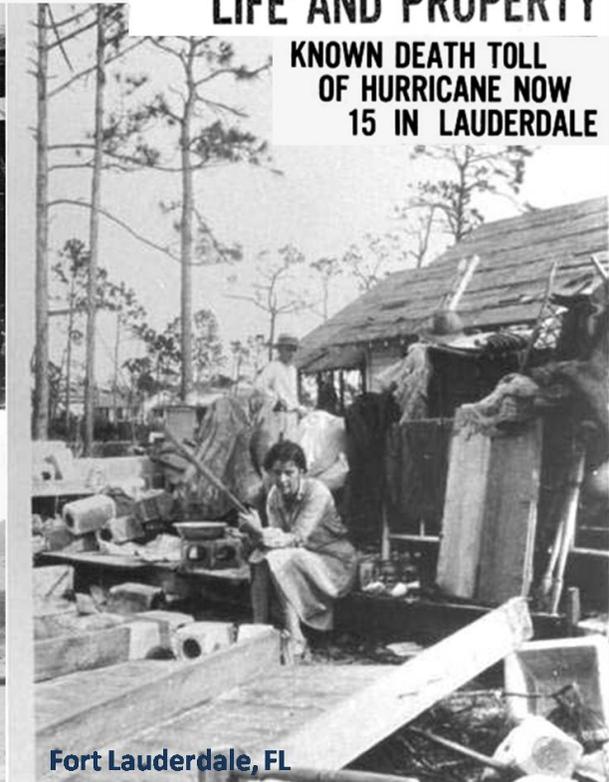
Seven Identified, One Unknown Dead In Lauderdale
After Hurricane Strikes Lower East Coast With
Hollywood And Miami Worst Sufferers

HURRICANE CLAIMS
HEAVY TOLL OF
LIFE AND PROPERTY

KNOWN DEATH TOLL
OF HURRICANE NOW
15 IN LAUDERDALE



Fort Myers, FL



Fort Lauderdale, FL



Arcadia, FL

Figure 5. Newspaper headlines and damage photographs.

Links for more information:

http://www.miamibeach411.com/History/photo_1926_hurricane_1.html,

<http://www.aoml.noaa.gov/hrd/Landsea/USdmg/#table7>,

<http://www.worldpolicy.org/projects/globalrights/environment/report/index.html>,

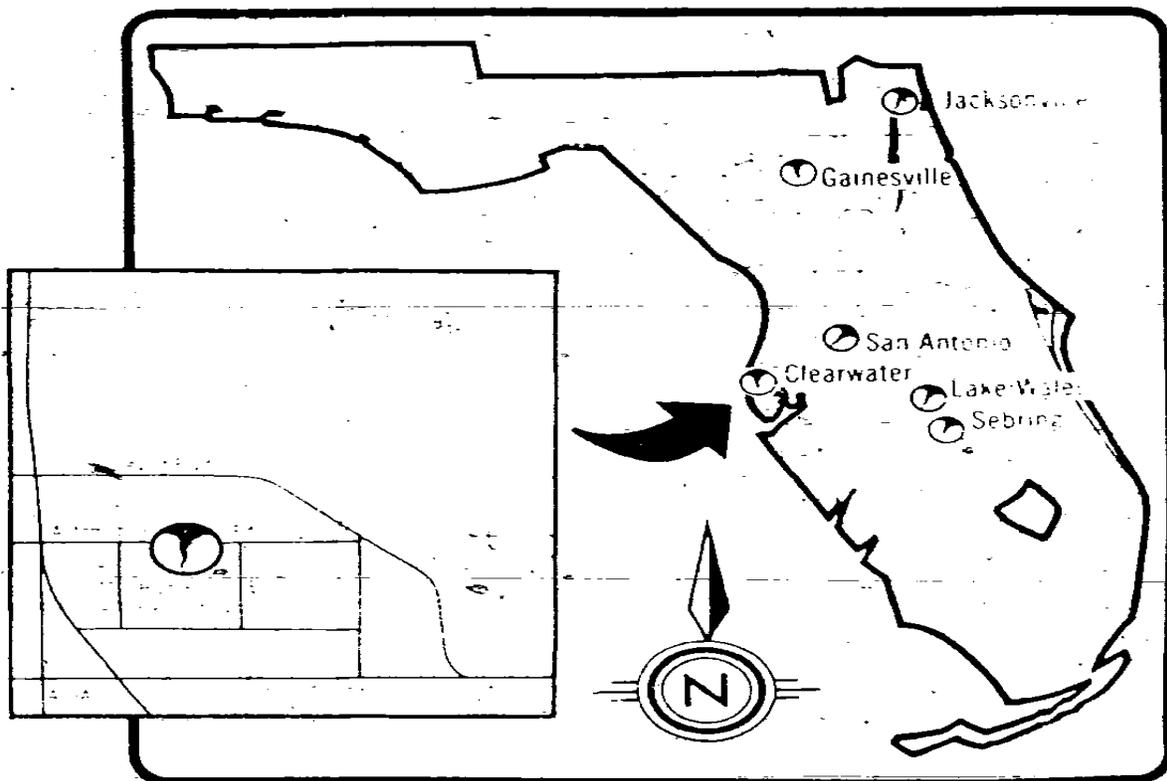
Acknowledgments: Fort Myers News Press, NOAA, State Library and Archives of Florida, and The South Florida Sun Sentinel.



Tornado Kills Children at Elementary School in 1978

Fact Sheet

- Date: May 4, 1978
- Time: 1147 am
- Estimated Tornado Intensity: F3
- Estimated Maximum Wind: 158-206 mph
- Tornado Width (Yards): 200
- Path Length (Miles): 2
- Deaths: 4
- Injuries: 94
- Damage Amount: 43M with a 3.1M loss to the school
- Number of Homes Damages: Many homes and trailers & 1 school
- County: Pinellas



Shown above is where several tornadoes hit in Florida; the big arrow pointing to the tornado that hit Pinellas County.

Tampa Tribune

NOAA AND THE PRESERVE

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'People Were Screaming'

Tampa Tribune

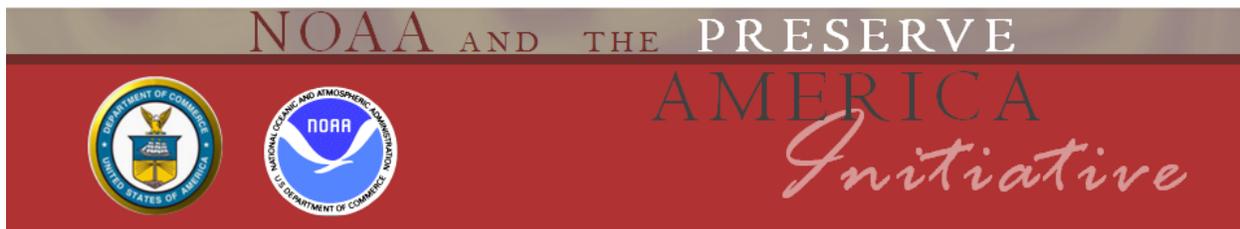
Two Killed, 93 Injured As Twister Rips Open Pinellas County School

Tampa Tribune



Just a splintered shell of what was High Point Elementary School remains in the wake of Thursday's tornado.

Tampa Tribune



Summary of event:

Just before noon on May 5, 1978 it was just another day for the people in Pinellas County. Parents and guardians already dropped their children off at school and were already at work when the sky went from sunny to grey and dark quickly.

The storm approaching was fierce and it did not care what was in its path. As the tornado hit the school unexpectedly no one was prepared for what had happened. Things quickly turned to horror. Many stories of the incident were told from many different perspectives from students, teachers, and witnesses.

Detailed experiences:

Cheryl Guthrie, a fifth-grader, was in a portable classroom when the tornado struck. **“The portable started rocking up and down like a boat. The lights went out and the teacher fell to the floor. I got so hysterical. I ran out the door. I went to the cafeteria but the whole school has just caved in,”** she said. **“Everyone was running around, crying and getting soaking wet. In the classroom, everyone was just screaming”** (Tampa Tribune, May 5th, front page). Another student was another lucky victim to the tornadoes devastation. **Billy White, 11, said he was sitting by a window in his classroom when the lights went out and the window panes shattered. The wind picked him up and tossed him through one of the windows, he said. He was not hurt though.** (St Petersburg Times, May 5th, A-3)

One teacher explained what happened in her classroom when the storm struck. **“We were sitting there having our little rest period after lunch. I heard the ripping of the roof. I stood up. I realized what was happening. The roof was leaving us. I screamed, ‘Get down. Get down and cover your heads.’”** **“There was just this tremendous sound,”** Canas said. **“Very few children even heard me. When the glass started flying, I fell over the children closest to me.”** Her blouse was spotted with the blood of an injured child (Tampa Tribune, May 5th, front page). Another teacher explained what she and some fellow teachers did to protect themselves from the tornado. **Teacher Carolyn White said her students had gone to the cafeteria and she was having lunch with two other teachers in one of the school’s portable classrooms when the storm hit. “Two of us jumped under the table and started to pray,”** she said. **“One teacher went into a supply room but the wind pressure was so great that the door started to suck in on her. We tried to get out of the building, but we couldn’t open the door.”** (St Petersburg Times, May 5th, A-3)

There was a lot of disorder after the tornado passed and all the damage was done. News finally went out about the tornado. **After learning that a tornado had torn into the building near Largo during the lunch hour Thursday, parents shared the initial horror of not knowing who was hurt and who was safe...who was trapped under debris and who was lost in the storm and confusion. Frantic mothers and fathers dug in driving rain through the**



rubble that used to be Pinellas County’s High Point Elementary School, looking for missing boys and girls. Children cried for their parents (Tampa Tribune, May 5th, front page). Sharon Wilson who is a mother of two of the children at the elementary was in shock “Men were carrying bleeding children out. Nobody knew where any body was. Children were screaming and running. Such confusion.” (Tampa Tribune, May 5th, front page)

There were a few witnesses that were at the scene when the disaster occurred. Bill Carlisle was sitting in his car 200 yards from the school. He said he saw the tornado coming. “It was just like a vacuum,” he said. “Everything went up in the air and the debris was just-flying around in a circular motion” (Tampa Tribune, May 5th, front page). Some other witness said the school looked like it had been bombed. Debris was hanging from electric wires. Pieces of plaster board and insulation were in the tops of trees. A tree about three feet thick had its top ripped off almost clean, as if by a giant saw. Brick veneer and concrete blocks were scattered (Tampa Tribune, May 5th, front page). Incredibly there were only four deaths that occurred due to the storm. One was a little boy who was getting ready to celebrate his birthday. “It was Timmy’s (Duval) birthday,” said the grieving teacher as she recounted the terror at High Point as the twister hit at about 11:47 a.m. “His mother was going to come to school at half-past-one and have a party with us. Everything happened so fast. We were just on the floor. I was trying to cover a couple of kids. We were all bending over and everything was hitting me. It was so fast. The ones that could walk ran outside with the other kids. I couldn’t find everybody” (St Petersburg Times, May 5th, Section 3-A).

Timmy was 5 years old. He and another classmate “Gary Staly” died from a roof collapsing in their classroom. They both suffered from severe head injuries. (St Petersburg Times, May 5th, 3-A). The death toll was very low and for one main reason. It was lunch time. A large part of the children were in the cafeteria eating; from their portable classrooms and parts of the school where the tornado hit harder.



A woman looks through the debris after a tornado ripped through High Point Elementary School.

<http://www2.sptimes.com/weather/SW.4.1.html>

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St Petersburg Times — TONY LOPEZ

Jodie Long, 10, a High Point Elementary School pupil, is treated by Dr. James Eutzler at Sun Coast Osteopathic Hospital.

NOAA AND THE PRESERVE

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St Petersburg Times



Tampa Tribune

Agony Of Uncertainty

Frenzied Parents Dug Not Knowing Who Was Safe, Who Wasn't

Tampa Tribune



Frenzied Parents Baffled

• From Page 1A

"She was stiff, lying on the floor and her back was full of blood and she didn't want anyone to touch her," he said.

At Clearwater's Morton Plant Hospital, where most of the injured children were taken, happy reunions of parents and children greatly outnumbered more unhappy scenes of parents still unsure if their children were living or dead.

Kathy Hoveck, without shoes and in shorts, stood soaking wet at Hubert Rutland Hospital waiting for news of her 6-year-old son Chad.

She had just come from the school, where she had looked for him, but couldn't find him.

"All I could picture was him underneath that rubble," she said.

She and her husband, Norman, finally located Chad at the hospital and watched as emergency room workers carried their son past them in the waiting room. She sobbed and clutched her husband.

He was being taken to the operating room and was believed to have suffered head injuries.

"I can't find my kid," other parents were saying, both at the school and in hospital waiting rooms.

Often the reply was, "I've just seen your boy. He's all right."

After the uninjured children were sheltered from the storm and separated from the injured, they quickly calmed down.

Waiting for their parents in Morton Plant Hospital, many of the children sang and ate snacks.

**Tribune Photos
by Fred Fox,
Mack Goethe and
Dan Fager**

Kathy Phillips was relieved when she was reunited with her son, Robbie, but she waited word on a second child.

Tampa Tribune