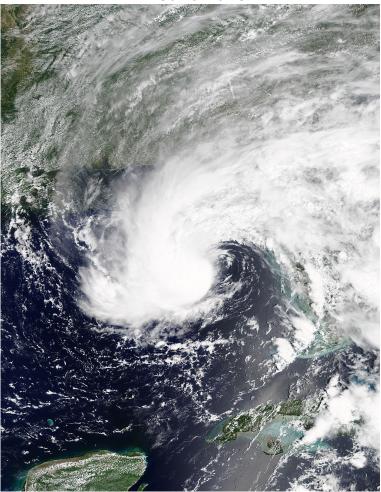


# Sub-Tropical Storm Alberto: Florida's First May Tropical-Cyclone Landfall Since 2012

Prepared by Daniel J. Brouillette (dbrouillette@coaps.fsu.edu) Florida Climate Center, Center for Ocean-Atmospheric Prediction Studies The Florida State University 21 June 2018



GOES-16 visible-satellite imagery of Alberto approaching the Florida panhandle on 27 May. Courtesy: NASA.

## **General Overview**

Sub-Tropical Storm Alberto was the first named tropical cyclone of the 2018 Atlantic hurricane season, forming before that season officially started on 1 June. It was also Florida's first (sub-)tropical-cyclone landfall of 2018. It had a rather protracted history in the Gulf of Mexico and then over land (Figure 1).



Figure 1: Mapping shows the track of Alberto.

Early on 21 May, forecasters at the National Hurricane Center (NHC) began monitoring a broad area of low pressure that had formed over the western Caribbean Sea from an interaction between an upper-level low and surface trough of low pressure. In the next few days after this formation, this broad low-pressure area began to organize gradually off the coast of the Yucatan Peninsula, but organization was impeded by strong wind shear and dry air. Despite those impediments, the entity became organized enough that, at 1500 UTC on 25 May, NHC forecasters christened it Sub-Tropical Storm Alberto. Note that the NHC Glossary defines *sub-tropical cyclone* as follows:

A non-frontal low-pressure system that has characteristics of both tropical and extratropical cyclones. Like tropical cyclones, they are non-frontal, synoptic-scale cyclones that originate over tropical or subtropical waters, and have a closed surface wind circulation about a well-defined

center. In addition, they have organized moderate to deep convection, but lack a central dense overcast. Unlike tropical cyclones, subtropical cyclones derive a significant proportion of their energy from baroclinic sources, and are generally clod-core in the upper troposphere, often being associated with an upper-level low or trough. In comparison to tropical cyclones, these systems generally have a radius of maximum winds occurring relatively far from the center (usually greater than 60 n mi), and generally have a less symmetric wind field and distribution of convection.

Indeed, at this time, Alberto had multiple low-level circulations that were interacting with the aforementioned upper-level trough.

By 26 May, Alberto's center of circulation had reformed under the primary area of convection in the Gulf of Mexico, northeast from the previous weak circulation in the Caribbean Sea, thus becoming better organized. By this time, Alberto was paralleling the Florida western coast, accompanied by a band of thunderstorms that stretched along the Florida western coast southward to Cuba. Early on 28 May, instrumentation deployed from Hurricane Hunter reconnaissance aircraft indicated maximum sustained winds of 65 miles per hour, which represented Alberto's peak intensity. Dry air continued to intrude into Alberto so that it never transitioned to a fully tropical storm and that, rather, it weakened before making landfall at 2100 UTC on 28 May near Laguna Beach, Bay County (just west of Panama City Beach), with maximum sustained winds of 45 miles per hour.

After landfall, Alberto remained an entity for quite some time. At 0900 UTC on 29 May, it was downgraded to a sub-tropical depression as it tracked inland over Alabama. Owing to a very moist boundary layer and soils, effectively a "brown ocean", the storm was reclassified as a tropical depression at 0300 UTC on 30 May while it was centered over west Tennessee. Thereafter, it generally tracked northward across Kentucky, Indiana, and lower Michigan, picking up forward speed with time. Early on 31 May, it was downgraded to a post-tropical cyclone while centered over northeastern lower Michigan, about to enter Lake Huron.

Following is a list of superlative facts about Alberto:

- It was the first tropical/sub-tropical cyclone to enter the Gulf of Mexico in the month of May since 1976. (The sub-tropical cyclone that did in 1976 was named "One".)
- It was the most intense tropical cyclone in the Atlantic basin, in terms of pressure, in the month of May since Hurricane Able in 1951. Alberto's minimum pressure was 990 mb (29.23 inHg).
- Forming at 19.3°N latitude, it was the second-most southern-forming sub-tropical cyclone on record in the Atlantic basin after Sub-Tropical Storm Olga in 2007.
- It was only the 11<sup>th</sup> storm in the observational record to reach Lake Huron as a tropical depression. Out of those 11 storms, it was the earliest in the year to do so.

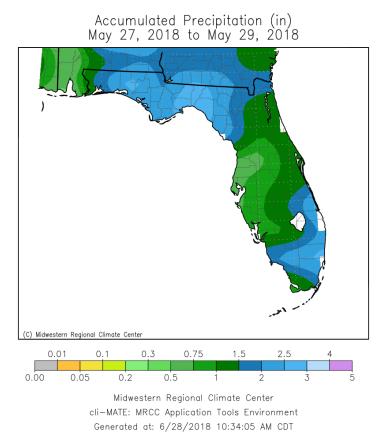
# Impacts on Florida

The impacts of Sub-Tropical Storm Alberto on Florida mostly were minor and generally restricted to the western coast and portions of the Panhandle. They included moderate rainfall amounts with some minor urban flooding, minor wind damage, and minor storm surge. No tornadoes were reported.

The main significance of Alberto's rainfall is that it contributed to a record-wet May (since 1895) for Florida. Indeed, the statewide mean total for May 2018 was 9.23", eclipsing the 8.91" recorded in May 2009. Because of the prevailing rainy season, which brings rainfall driven by sea-breeze boundaries nearly every day to some or many portions of state, and the presence of a upper-level trough of low pressure of the region that had been enhancing rainfall, it was difficult to pinpoint the period of time in which rainfall can be attributed to Alberto only. Based on an analysis of Doppler radar archives and rainfall records, it was decided to consider the period from approximately 7:00 AM EDT on 27 May to approximately 7:00 AM EDT on 29 May. In the following table are rainfall totals from stations in various networks; only those totals that exceed 2.50" are included.

| LOCATION              | COUNTY    | RAINFALL TOTAL (inches) | OBSERVATION<br>NETWORK |
|-----------------------|-----------|-------------------------|------------------------|
| Niceville 3.4 ESE     | Okaloosa  | 5.63                    | CoCoRaHS               |
| DeFuniak Springs 3.6  |           |                         |                        |
| NW                    | Walton    | 5.38                    | CoCoRaHS               |
| Niceville 2.3 SE      | Okaloosa  | 4.91                    | CoCoRaHS               |
| Stuart                | Martin    | 4.68                    | AWOS                   |
| Crestview             | Okaloosa  | 4.14                    | ASOS                   |
| Niceville 2.1 SE      | Okaloosa  | 4.14                    | CoCoRaHS               |
| De Funiak Springs 5.3 |           |                         |                        |
| NW                    | Walton    | 4.13                    | CoCoRaHS               |
| Perry 2.0 S           | Taylor    | 4.09                    | CoCoRaHS               |
| Jensen Beach 1.5 N    | Martin    | 4.07                    | CoCoRaHS               |
| Lamont 7.7 SW         | Jefferson | 4.04                    | CoCoRaHS               |
| Jensen Beach 1.4 N    | Martin    | 3.94                    | CoCoRaHS               |
| Niceville 4.5 SE      | Okaloosa  | 3.92                    | CoCoRaHS               |
| Monticello 2.9 WSW    | Jefferson | 3.85                    | CoCoRaHS               |
| Nettles Island        | St. Lucie | 3.77                    | NWS COOP               |
| Monticello 4.3 ENE    | Jefferson | 3.66                    | CoCoRaHS               |
| Orange Park 0.7 NNE   | Clay      | 3.61                    | CoCoRaHS               |
| Palm City 1.4 NW      | Martin    | 3.58                    | CoCoRaHS               |
| Niceville 3.6 SE      | Okaloosa  | 3.58                    | CoCoRaHS               |
| Tallahassee 6.2 E     | Leon      | 3.57                    | CoCoRaHS               |
| Port Salerno 5 W      | Martin    | 3.55                    | NWS COOP               |
| Tallahassee 10.4 SSE  | Leon      | 3.54                    | CoCoRaHS               |
| Stuart 1.0 ESE        | Martin    | 3.54                    | CoCoRaHS               |
| Eglin Afb 5.6 NE      | Okaloosa  | 3.54                    | CoCoRaHS               |
| Panama City Beach     |           |                         |                        |
| 0.3 SW                | Bay       | 3.4                     | CoCoRaHS               |
| Inlet Beach 0.7 E     | Walton    | 3.31                    | CoCoRaHS               |
| Perry                 | Taylor    | 3.28                    | AWOS                   |
| Monticello 9.8 SW     | Jefferson | 3.2                     | CoCoRaHS               |
| Monticello 10 SW      | Jefferson | 3.2                     | NWS COOP               |

| Miramar Beach 9.5      |            |      |          |
|------------------------|------------|------|----------|
| ESE                    | Walton     | 3.2  | CoCoRaHS |
| Stuart 6.9 SSW         |            |      |          |
|                        | Martin     | 3.15 | CoCoRaHS |
| Palm City 4.0 SW       | Martin     | 3.11 | CoCoRaHS |
| Union Park 3.8 ENE     | Orange     | 3.1  | CoCoRaHS |
| Vernon 10.6 WSW        | Washington |      | CoCoRaHS |
| Wacissa 1.1 SW         | Jefferson  | 3.03 | CoCoRaHS |
| Crestview 1.9 SE       | Okaloosa   | 3.02 | CoCoRaHS |
| Stuart 8.4 S           | Martin     | 3.01 | CoCoRaHS |
| Sunny Hills 3.3 N      | Washington |      | CoCoRaHS |
| Jacksonville 5.9 SW    | Duval      | 2.91 | CoCoRaHS |
| Midway 6.9 SW          | Leon       | 2.87 | CoCoRaHS |
| Panama City Beach      |            |      |          |
| 1.2 ESE                | Bay        | 2.8  | CoCoRaHS |
| Ocala Weather          |            |      |          |
| Service                | Martin     | 2.78 | CoCoRaHS |
| Jensen Beach 2.2 NW    | Martin     | 2.78 | CoCoRaHS |
| Jacksonville 7.3 SW    | Duval      | 2.77 | CoCoRaHS |
| Lynn Haven 1.6 SSE     | Bay        | 2.75 | CoCoRaHS |
| Live Oak 5.1 SSE       | Suwannee   | 2.75 | CoCoRaHS |
| Tallahassee 14.2 NE    | Leon       | 2.74 | CoCoRaHS |
| Mary Esther 0.6 E      | Okaloosa   | 2.72 | CoCoRaHS |
| Crawfordville 1.0 S    | Wakulla    | 2.72 | CoCoRaHS |
| Brooker 6.6 SSE        | Alachua    | 2.69 | CoCoRaHS |
| Tallahassee 3.1 NW     | Leon       | 2.69 | CoCoRaHS |
| Port St. Lucie 2.4 SSW | St. Lucie  | 2.63 | CoCoRaHS |
| Hedges 0.3 ESE         | Nassau     | 2.6  | CoCoRaHS |
| Jacksonville Int'l     |            |      |          |
| Airport                | Duval      | 2.57 | ASOS     |
| Cross City 1 E         | Dixie      | 2.54 | NWS COOP |
| Shalimar 1.0 N         | Okaloosa   | 2.52 | CoCoRaHS |
| Orange Park 2.5 WSW    | Clay       | 2.51 | CoCoRaHS |
| Tallahassee 4.8 ESE    | Leon       | 2.51 | CoCoRaHS |
| Orange Park 4.1 WSW    | Clay       | 2.5  | CoCoRaHS |
| Wewahitchka            | Gulf       | 2.5  | NWS COOP |
| wewaniichka            | Guii       | 2.0  |          |



# The following plot shows total rainfall from 27 to 29 May (Figure 2).

Figure 2: Plot of rainfall total, approximating the storm total for Alberto (see text), from 27 to 29 May.

Wind gusts were as high as 59 miles per hour near St. George Island and at the Tyndall Air Force Base. Damage from wind gusts mostly was minor and included some fallen trees and tree limbs from the Big Bend westward to the eastern portion of the Emerald Coast (i.e., generally east of the landfall location) and the loss of power to 9000 customers of the City of Tallahassee's municipal utility. Following is a table of maximum wind gusts exceeding 35 miles per hour.

| LOCATION                 | COUNTY   | MAX. WIND<br>GUST<br>(miles per<br>hour) | OBSERVATION<br>NETWORK |
|--------------------------|----------|--|------------------------|
| St. George Island Bridge | Franklin | 59                                       | WeatherSTEM            |
| Tyndall AFB              | Bay      | 59                                       | ASOS                   |
| Apalachicola Airport     | Franklin | 49                                       | ASOS                   |
| Shell Point              | Wakulla  | 48                                       | WeatherSTEM            |

| Panama City Int'l Airport   | Bay      | 47 | ASOS        |
|-----------------------------|----------|----|-------------|
| Port St. Joe - Gulf County  |          |    |             |
| EOC                         | Gulf     | 45 | WeatherSTEM |
| St. Teresa - FSU Coastal    |          |    |             |
| and Marine Lab              | Franklin | 45 | WeatherSTEM |
| Panama City - FSU branch    |          |    |             |
| campus                      | Bay      | 43 | WeatherSTEM |
| Destin/Fort Walton Beach    |          |    |             |
| Airport                     | Walton   | 41 | METAR       |
| Holmes County Airport       | Holmes   | 41 | AWOS        |
| Cross City                  | Dixie    | 39 | AWOS        |
| St. Petersburg/Clearwater   |          |    |             |
| Airport                     | Pinellas | 39 | ASOS        |
| Tallahassee                 | Leon     | 38 | ASOS        |
| Port St. Joe - Port St. Joe |          |    |             |
| Elementary School           | Gulf     | 38 | WeatherSTEM |
| Vicksburg - Deane Bozeman   |          |    |             |
| School                      | Bay      | 38 | WeatherSTEM |
| Crawfordville - Wakulla     |          |    |             |
| County High School          | Wakulla  | 38 | WeatherSTEM |
| St. Petersburg - Albert     |          |    |             |
| Whitted Field               | Pinellas | 36 | ASOS        |

A storm surge was observed along much of the Big Bend and Forgotten Coast but was generally small, measuring generally less than one foot. No tornadoes were observed.

# Supplemental Links

Doppler radar loop of Alberto covering the Southeastern United States, courtesy of Brian McNoldy, Rosenstiel School of Marine and Atmospheric Science, University of Miami: <u>http://andrew.rsmas.miami.edu/bmcnoldy/tropics/alberto18/Alberto\_28-29May18\_southeast.gif</u>

A more detailed discussion of Alberto's classification as 'sub-tropical' from Dr. Marshall Shepherd, Professor of Atmospheric Science at the University of Georgia: <u>https://www.forbes.com/sites/marshallshepherd/2018/05/27/5-facts-or-clarifications-about-subtropical-storm-alberto-the-day-before-landfall/#41fc8f4371a3</u>

## Appendix A – Post-Tropical Cyclone Report – NWS Tallahassee

445 ACUS72 KTAE 011632 PSHTAE

KECP-PANAMA CITY NW, FL

POST TROPICAL CYCLONE REPORT...SUBTROPICAL STORM ALBERTO NATIONAL WEATHER SERVICE - TALLAHASSEE FL 1231 PM EDT FRI JUN 1 2018

NOTE: THE DATA SHOWN HERE ARE PRELIMINARY....AND SUBJECT TO UPDATES AND CORRECTIONS AS APPROPRIATE.

THIS REPORT INCLUDES EVENTS OCCURRING WHEN WATCHES AND/OR WARNINGS WERE IN EFFECT...OR WHEN SIGNIFICANT FLOODING ASSOCIATED WITH ALBERTO OR ITS REMNANTS WAS AFFECTING THE AREA.

COUNTIES INCLUDED...BAY...CALHOUN, FL...COFFEE...DALE...DIXIE... FRANKLIN...GENEVA...GULF...HOLMES...HOUSTON...JACKSON...JEFFERSON... LAFAYETTE...LIBERTY...TAYLOR...WAKULLA...WALTON...WASHINGTON... LEON

| A. LOWEST SEA  | LEVEL PRE | SSURE/MA | XIMUM SUS | PAINED WIN | DS AND PH | EAK GUSTS |
|--|-----------|----------|-----------|------------|-----------|-----------|
| METAR OBSERVATIONS<br>NOTE: ANEMOMETER HEIGHT IS 10 METERS AND WIND AVERAGING IS 2 MINUTES |           |          |           |            |           |           |
| LOCATION ID  | MIN       | DATE/    | MAX       | DATE/      | PEAK      | DATE/     |
| LAT LON  | PRES      | TIME     | SUST      | TIME       | GUST      | TIME      |
| DEG DECIMAL  | (MB)      | (UTC)    | (KT)      | (UTC)      | (KT)      | (UTC)     |
|  |           |          |           |            |           |           |
| KCTY-CROSS CIT   | Y, FL     |          |           |            |           |           |
| 29.62 -83.10   | 9999.0 /  | 1        | 170/020   | 28/1935    | 180/034   | 28/1635   |
|  |           |          |           |            |           |           |
| KAAF-APALACHIC   | OLA MUNI, | FL       |           |            |           |           |
| 29.72 -85.03   | 1000.5 2  | 8/1553   | 170/032   | 28/1812    | 170/043   | 28/1711   |
|  |           |          |           |            |           |           |
| K40J-PERRY-FOL   | EY, FL    |          |           |            |           |           |
| 30.07 -83.57   | 9999.0 /  | ,        | 170/020   | 28/2015    | 190/028   | 28/2055   |
|  |           |          |           |            |           |           |

A. LOWEST SEA LEVEL PRESSURE/MAXIMUM SUSTAINED WINDS AND PEAK GUSTS

30.35 -85.80 995.4 28/2053 100/025 28/2001 100/041 28/2004 KTLH-TALLAHASSEE RGNL, FL 30.40 -84.35 1000.0 29/0453 150/020 28/2153 130/033 28/1742 KPAM-TYNDALL AFB, FL 30.07 -85.59 996.2 28/1811 150/031 28/1836 150/051 28/1932 KDTS-DESTIN/FT WALTON BEACH ARPT, FL 30.40 -86.47 997.0 28/2053 350/022 28/1902 350/036 28/2005 KMAI-MARIANA, FL 30.80 -85.21 1000.3 28/2153 050/021 28/2045 130/027 28/2153 KOZR-FT RUCKER/CAIRNS, AL 31.29 -85.72 999.3 28/2325 060/020 28/2106 040/028 28/2034 KDHN-DOTHAN, AL 31.32 -85.45 1001.5 28/2353 080/021 28/1630 090/031 28/1637 K1JO-HOLMES COUNTY, FL 30.85 -85.60 994.3 28/2258 040/019 28/1903 040/036 28/1903 REMARKS: NON-METAR OBSERVATIONS... NOTE: ANEMOMETER HEIGHT IN METERS AND WIND AVERAGING PERIOD IN MINUTES INDICATED UNDER MAXIMUM SUSTAINED WIND IF KNOWN \_\_\_\_\_ LOCATION ID MIN DATE/ MAX DATE/ PEAK DATE/ LAT LON PRES TIME SUST TIME GUST TIME DEG DECIMAL (MB) (UTC) (KT) (UTC) (KT) (UTC) \_\_\_\_\_ FRANKLIN COUNTY SCHOOL WEATHERSTEM 29.76 -84.82 1000.4 28/1200 234/021 28/1500 255/029 28/1600 FSU COASTAL AND MARINE LAB WEATHERSTEM 29.91 -84.51 1002.4 28/1900 140/036 28/1800 157/039 28/1900 ST GEORGE ISLAND BRIDGE WEATHERSTEM 29.69 -84.89 1003.7 28/1500 144/044 28/1500 159/051 28/1600 GULF COUNTY EOC WEATHERSTEM 29.81 -85.29 997.8 28/1800 221/035 28/1900 166/039 28/1600

PORT ST JOE ELEMENTARY SCHOOL WEATHERSTEM

29.79 -85.29 997.2 28/1800 198/030 28/1800 198/033 28/1800

FSU PANAMA CITY WEATHERSTEM

30.19 -85.72 993.3 28/2100 345/037 28/1900 345/037 28/1900

DEAN BOZEMAN SCHOOL WEATHERSTEM

30.39 -85.69 993.7 28/2100 255/029 28/2300 255/033 28/2300

EMERALD COAST MIDDLE SCHOOL WEATHERSTEM

30.36 -86.11 991.5 28/2200 360/019 28/2000 360/023 28/2000

WALTON COUNTY EOC WEATHERSTEM

30.70 -86.00 994.5 28/2300 355/021 28/2100 355/024 28/2100

SHELL POINT BEACH WEATHERSTEM 30.05 -84.29 1002.5 28/2100 136/040 28/1500 160/042 28/2000

WAKULLA HIGH SCHOOL WEATHERSTEM 30.10 -84.38 1005.4 28/2100 294/029 28/2000 294/033 28/2000

REMARKS:

### B. MARINE OBSERVATIONS...

NOTE: ANEMOMETER HEIGHT IN METERS AND WIND AVERAGING PERIOD IN MINUTES INDICATED UNDER MAXIMUM SUSTAINED WIND IF KNOWN

\_\_\_\_\_

| LOCATION<br>LAT LON |         |         | DATE/<br>TIME |         |         |         |         |
|---------------------|---------|---------|---------------|---------|---------|---------|---------|
| DEG DECIN           | 1AL     | (MB)    | (UTC)         | (KT)    | (UTC)   | (KT)    | (UTC)   |
| 42039-3D2           | 20 /D P | ENSACOL | A             |         |         |         |         |
| 28.78 -8            | 36.04   | 991.2   | 28/1450       | 060/039 | 28/0450 | 060/051 | 28/0450 |
|                     |         |         |               | 05/99   |         |         |         |
| SGOF1-TY            | NDALL A | FB TOWE | R C, FL       |         |         |         |         |
| 29.41 -8            | 34.86   | 1000.7  | 28/1500       | 150/041 | 28/1400 | 150/047 | 28/1400 |
|                     |         |         |               | 35/99   |         |         |         |
|                     |         |         | / 24          |         |         |         |         |
| KTNF1-KEA           |         | •       |               |         |         |         |         |
| 29.82 -8            | 33.59   | 1006.3  | 28/1000       | 160/027 | 28/2000 | 160/032 | 28/2100 |
|                     |         |         |               | 10/99   |         |         |         |
|                     |         |         |               |         |         |         |         |

SHPF1-SHELL POINT, FL 30.06 -84.29 1003.6 28/2142 150/033 28/1830 160/041 28/1942

## 06/99

APXF1-APALACHICOLA NERR, FL 29.79 -84.88 9999.0 999/999 160/026 28/1745 999/999 99/9999 05/99 APCF1-APALACHICOLA, FL NOS 29.73 -84.98 1000.9 28/1518 180/032 28/1754 190/038 28/1842 07/99 PACF1 30.15 -85.67 995.5 28/2018 170/034 28/2030 150/046 28/1948 08/99 PCBF1-PANAMA CITY BEACH, FL NOS 30.21 -85.88 994.0 28/2018 240/034 28/2154 240/040 28/2154

REMARKS:

C. STORM TOTAL RAINFALL FROM 1200 UTC MAY 27 UNTIL 0000 UTC MAY 30

| CITY/TOWN                | COUNTY         | ID    | RAINFALL |
|--------------------------|----------------|-------|----------|
| LAT LON                  |                |       | (IN)     |
| DEG DECIMAL              |                |       |          |
|                          |                |       |          |
| 2 NE ALPINE HEIGHTS      | WALTON         |       | 4.22     |
| 30.74 -86.22             |                |       |          |
|                          |                |       |          |
| DEFUNIAK SPRINGS         | WALTON         | 54J   | 4.21     |
| 30.73 -86.15             |                |       |          |
|                          |                |       |          |
| 1 SSE PORTLAND           | COASTAL WALTON |       | 4.19     |
| 30.49 -86.19             |                |       |          |
|                          |                |       |          |
| 3 SW ALTHA               | CALHOUN        |       | 4.19     |
| 30.53 -85.16             |                |       |          |
|                          |                |       |          |
| TALLAHASSEE REGIONAL AIR | LEON           | TALF1 | 3.98     |
| 30.39 -84.36             |                |       |          |
|                          |                |       |          |
| 3 ESE DILLS              | JEFFERSON      | ASHF1 | 3.88     |
| 30.60 -83.73             |                |       |          |
|                          |                |       |          |
| LOWRY MILL               | COFFEE         | LOWA1 | 3.84     |
|                          |                |       |          |

## 30.42 -84.78

| WACISSA SPRINGS<br>30.35 -83.99          | JEFFERSON |       | 3.81 |
|--|-----------|-------|------|
| 3 SW DAWESVILLE<br>30.87 -84.05          | THOMAS    | TLMG1 | 3.66 |
| 2 SE BLOXHAM<br>30.36 -84.61             | LEON      |       | 3.63 |
| 1 NE HILLSDALE<br>31.48 -83.58           | TIFT      | TWCG1 | 3.56 |
| WEWAHITCHKA<br>30.10 -85.20              | GULF      | WEWF1 | 3.55 |
| 1 S ADEL<br>31.12 -83.43                 | соок      | AELG1 | 3.44 |
| 1 SSW REED BINGHAM STATE<br>31.15 -83.54 | COLQUITT  | ADLG1 | 3.39 |
| 3 E BARNEY<br>31.00 -83.46               | BROOKS    | HRAG1 | 3.37 |
| INLET BEACH<br>30.27 -86.00              | WALTON    |       | 3.37 |
| PERRY<br>30.10 -83.58                    | TAYLOR    | PERF1 | 3.32 |
| 2 NE TIFTON<br>31.48 -83.48              | TIFT      |       | 3.32 |
| 1 WNW TALLAHASSEE<br>30.44 -84.30        | LEON      |       | 3.29 |
| 1 S GREENWOOD<br>31.18 -84.34            | JACKSON   |       | 3.28 |
| 1 E SHIVER<br>30.82 -83.53               | BROOKS    | OKAG1 | 3.24 |
| BLUE SPRINGS<br>30.78 -83.46             | BROOKS    | QUTG1 | 3.21 |

| 2 NNE TALLAHASSEE        | LEON      |       | 3.18 |
|--------------------------|-----------|-------|------|
| 30.46 -84.27             |           |       |      |
| 2 SSW CHASTAIN           | THOMAS    | CLDG1 | 3.13 |
| 31.00 -83.94             |           |       |      |
| VALDOSTA                 | LOWNDES   | VLDST | 3.12 |
| 30.84 -83.28             |           |       |      |
| 1 E SELLERSVILLE         | GENEVA    | SLLA1 | 3.04 |
| 31.12 -85.98             |           |       |      |
| 2 E CAIRNS ARMY AIR FIEL | DALE      | DCRA1 | 3.03 |
| 31.27 -85.68             |           |       |      |
| 1 N THOMAS CITY          | JEFFERSON | WACF1 | 3.00 |
| 30.36 -83.97             |           |       | 2.00 |

REMARKS:

D. INLAND FLOODING...

\_\_\_\_\_

WALTON...WATER FLOWED AT A HIGH RATE OF SPEED ACROSS CR 395 AT EAST POINT WASHINGTON ROAD IN SANTA ROSA BEACH. THE INTERSECTION OF FLOUNDERS AND PORPOISE STREETS IN SANTA ROSA BEACH WAS FLOODED. INLET BEACH PARK BEACH ACCESS AREA FLOODED ON LAKESHORE DRIVE.

WAKULLA...A FEW LOW LYING ROADS FLOODED.

\_\_\_\_\_

E. MAXIMUM STORM SURGE AND STORM TIDE... OFFICIAL TIDE GAUGES NOTED WITH LEADING G

| COUNTY   | CITY/TOWN<br>OR LOCATION | SURGE TIDE<br>(FT) (FT) | DATE/ BEACH<br>TIME EROSION |
|----------|--------------------------|-------------------------|-----------------------------|
| ВАҮ      | G PANAMA CITY BEA        | 9999.00 2.6             | 2 28/1312 UNKNOWN           |
| ВАҮ      | G PANAMA CITY MAR        | 9999.00 2.3             | 3 28/1342 UNKNOWN           |
| FRANKLIN | G APALACHICOLA TI        | 9999.00 2.9             | 9 28/1800 UNKNOWN           |

| WAKULLA   | G SPRING CREEK | 9999.00 | 4.86 | 28/1815 | UNKNOWN |
|-----------|----------------|---------|------|---------|---------|
| WAKULLA   | G SHELL POINT  | 9999.00 | 4.83 | 28/1836 | MINOR   |
| WAKULLA   | G SAINT MARKS  | 9999.00 | 4.72 | 28/1920 | UNKNOWN |
| JEFFERSON | G NUTTALL RISE | 9999.00 | 4.17 | 28/1848 | UNKNOWN |
| TAYLOR    | G STEINHATCHEE | 9999.00 | 3.15 | 28/1800 | UNKNOWN |
| DIXIE     | G SUWANNEE     | 9999.00 | 3.60 | 28/1900 | UNKNOWN |

REMARKS: GAUGE REPORTS IN MEAN HIGHER HIGH WATER

PANAMA CITY BEACH TIDE STATION (BAY COUNTY) 1.65 FT MHHW PANAMA CITY MARINA (BAY COUNTY) 1.54 FT MHHW APALACHICOLA TIDE STATION (FRANKLIN COUNTY) 2.99 FT MHHW SPRING CREEK (WAKULLA COUNTY) 3.22 FT MHHW SHELL POINT (WAKULLA COUNTY) 3.20 FT MHHW SAINT MARKS (WAKULLA COUNTY) 2.89 FT MHHW NUTALL RISE (TAYLOR COUNTY) 2.27 FT MHHW STEINHATCHEE (TAYLOR COUNTY) 1.51 FT MHHW SUWANNEE RIVER (DIXIE COUNTY) 2.16 FT MHHW

F. TORNADOES...

| (DIST)CITY/TO  | NN            | COUNTY   | DATE/     | EF SCALE    |
|----------------|---------------|----------|-----------|-------------|
| LAT LON (DEG I | DECIMAL       |          | TIME(UTC) | (IF KNOWN)  |
| DESCRIPTION    |               |          |           |             |
|                |               |          |           |             |
|                |               |          |           |             |
|                |               |          |           |             |
| G. STORM IMPAG | CTS BY COUNTY |          |           |             |
|                |               |          |           |             |
| COUNTY         | DEATHS        | INJURIES |           | EVACUATIONS |
| DESCRIPTION    |               |          |           |             |
|                |               |          |           |             |
| WALTON         | 0             | 0        |           | 0           |

CONSTRUCTION BARRELS BLOWN ONTO HIGHWAY 98 IN MIRAMAR BEACH. A TREE FELL KNOCKING LINES ACROSS THE ROAD AT 186 FINE HILL DRIVE IN

DEFUNIAK SPRINGS. TREES DOWNED AT SPENCE DRIVE AND SR 81 IN PONCE DE LEON, AT OAK GRIVE ROAD AND CR 181E IN WESTVILLE, AND AT SOUTH JACKSON STREET IN FREEPORT. FLOODING REPORTED IN SANTA ROSA BEACH NEAR THE INTERSECTION OF COUNTY HIGHWAY 395 AND EAST POINT WASHINGTON ROAD AND ALONG FLOUNDER STREET AND DOLPHIN WAY. INLET BEACH PARK BEACH ACCESS AREA FLOODED ON LAKESHORE DRIVE.

## DIXIE

STORM SURGE IMPACTS...NONE. WATER DID NOT BREACH SEA WALL IN HORSESHOE BEACH AND SUWANNEE.

#### TAYLOR

COASTAL FLOOD IMPACTS...STEINHATCHEE BOAT RAMP FLOODED WITH SOME MINOR OVERWASH INTO THE ADJACENT PARKING LOT. ON THE AUCILLA RIVER, THE BOAT RAMP AT MANDALAY BAY WAS WASHED OFF PILINGS ONTO DRY LAND.

#### WAKULLA

APPROXIMATELY 40 LINES/TREES DOWN, A FEW LOW LYING ROADS FLOODED. ONE REPORT OF DAMAGE TO A STRUCTURE FROM A TREE FALLING. COASTAL FLOOD IMPACTS - ST MARKS RIVER AT US-98: 1.5 FEET INUNDATION AT NEWPORT BOAT RAMP. TOWN OF SAINT MARKS...RIVERSIDE DRIVE WAS FLOODED UP TO 1 FT DEPTH AND INUNDATION EXTENDED FROM RIVERFRONT UP TO 1000 FT INLAND NORTHWARD ALONG PORT LEON DRIVE. WATER ENTERED RESTAURANT. OLD FORT ROAD AND AREAS NEAR THE FORT FLOODED WITH PEAK INUNDATION OF 2.5 FEET. SHELL POINT BEACH...MINOR BEACH EROSION. 5 HOMES HAD WATER WASH UNDERNEATH THEM ALONG BEATTY TAFF DRIVE. MASHES SANDS BEACH. FROM THE BEACH FRONT WESTWARD TO BLUE CRAB ROAD WAS FLOODED. PEAK INUNDATION WAS NEAR BEACHFRONT AROUND 2.5 FT. WATER INUNDATION COVERED UP TO 3000 FT ALONG THE ROAD. TWO HOMES AT GROUND LEVEL HAD WATER REACH AN EXTERIOR WALL, BUT NO WATER ENTERED THE STRUCTURES.

#### FRANKLIN

COASTAL FLOOD IMPACTS...ALLIGATOR POINT ROAD WAS OVERWASHED DURING PEAK STORM SURGE. IN EASTPOINT, FLOODING AFFECTED THE EAST END OF THE CAUSEWAY TO APALACHICOLA, BUCK STREET, THE BEACHES NEAR REED COURT AND WAS UP TO THE ROCKS AT 10TH STREET AND HIGHWAY 98. IN APALACHICOLA, THE MARINA AND WATER ST. FLOODED. AT THE EAST END OF THE ST. GEORGE ISLAND PLANTATION, THE BEACHES WERE UNDERWATER.

COFFEE 0 0 0

TREES DOWN ON COUNTY ROAD (CR) 321, CR 342 NEAR ELBA, AL 87 NEAR

FULLER BROTHERS IN ELBA, AL 87 AT MM 34, AL 189 NEAR PERRY STORE/AL 134, CR 153 NEAR TABERNACLE AND CR 248 AT WEEKS BRIDGE IN NEW BROCKTON. POWER LINES DOWN ON LEE ST. IN NEW BROCKTON, ELBA NEAR WEEKS TIRE AND IN THE DOWNTOWN AREAS OF ELBA AND ENTERPRISE.

HOUSTON 0 0 0

A FEW DOWNED TREES AND A SHORT POWER OUTAGE IN A SMALL AREA. ONE TREE PARTIALLY BLOCKED BRANNON STAND ROAD ON THE WEST SIDE OF DOTHAN.

BAY 0 0 UNKWN

A FEW DOWNED TREES AND A SHORT POWER OUTAGE IN A SMALL AREA. ONE TREE PARTIALLY BLOCKED BRANNON STAND ROAD ON THE WEST SIDE OF DOTHAN.

HOLMES 0 0 0

THERE WERE A COUPLE OF REPORTS OF TREES DOWN BLOCKING ROADWAYS (CARTER MACK AND OLD MILL). AN OAK TREE FELL ON A MOBILE HOME.

JACKSON 0 0 0

THREE SMALL POWER OUTAGES, A FEW MINOR ACCIDENTS AND ABOUT EIGHT TREES THAT CAME DOWN ON ROADS AND POWER LINES.

LIBERTY 0 0 0

SMALL AND SPORADIC POWER OUTAGES.

LEON 0 0 0

9000 HOMES LOST POWER IN THE CITY OF TALLAHASSEE DUE TO DOWNED TREES AND LIMBS. A CAR CRASHED INTO A TRAFFIC SIGN SUPPORT POLE IN I-10. A DRIVER HIT A UTILITY POLE ON WEST ORANGE AVENUE IN TALLAHASSEE.

JEFFERSON 0 2 0

A TREE FELL ON A CAR ON I-10 CAUSING 2 SERIOUS INJURIES.

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Legend: I-Incomplete Data E-Estimated WOOL

Appendix B – Post-Tropical Cyclone Report from NWS Tampa Bay Area

902 ACUS72 KTBW 301613 PSHTBW

POST TROPICAL CYCLONE REPORT...SUBTROPICAL STORM ALBERTO NATIONAL WEATHER SERVICE TAMPA BAY AREA - RUSKIN FL 1213 PM EDT WED MAY 30 2018

NOTE: THE DATA SHOWN HERE ARE PRELIMINARY....AND SUBJECT TO UPDATES AND CORRECTIONS AS APPROPRIATE.

THIS **REPORT** INCLUDES EVENTS OCCURRING WHEN WATCHES AND/OR WARNINGS WERE IN EFFECT...OR WHEN SIGNIFICANT FLOODING ASSOCIATED WITH ALBERTO OR ITS REMNANTS WAS AFFECTING THE AREA.

COUNTIES INCLUDED...INLAND LEVY...INLAND CITRUS...SUMTER... INLAND HERNANDO...INLAND PASCO...INLAND HILLSBOROUGH...PINELLAS... POLK...INLAND MANATEE...HARDEE...HIGHLANDS...INLAND SARASOTA... DE SOTO...INLAND CHARLOTTE...INLAND LEE...COASTAL LEVY... COASTAL CITRUS...COASTAL HERNANDO...COASTAL PASCO... COASTAL HILLSBOROUGH...COASTAL MANATEE...COASTAL SARASOTA... COASTAL CHARLOTTE...COASTAL LEE

A. LOWEST SEA LEVEL PRESSURE/MAXIMUM SUSTAINED WINDS AND PEAK GUSTS \_\_\_\_\_ METAR OBSERVATIONS... NOTE: ANEMOMETER HEIGHT IS 10 METERS AND WIND AVERAGING IS 2 MINUTES \_\_\_\_\_ LOCATION ID MIN DATE/ MAX DATE/ PEAK DATE/ KBKV-BROOKSVILLE FL 28.47 -82.45 1006.0 27/2153 100/014 27/1753 110/022 27/1508 KTPA-TAMPA INTERNATIONAL AIRPORT FL 27.97 -82.53 1005.9 27/1953 200/014 27/2053 200/022 27/1953 KPIE-SAINT PETERSBURG FL 27.91 -82.69 1005.3 27/1753 120/020 27/1453 120/034 27/1622 KSPG-ALBERT WHITTED FL 27.77 -82.63 1004.7 27/1753 140/026 27/1500 160/031 27/1628 KSRO-SARASOTA FL 27.40 -82.55 1004.6 27/1253 180/021 27/1753 180/030 27/1731 KMCF-MACDILL AIRFORCE BASE FL 27.86 -82.52 1007.7 28/0656 170/015 28/1216 170/018 28/0956 KGIF-WINTER HAVEN FL 28.05 -81.75 1007.1 27/2153 120/015 27/1349 150/024 27/1843 KPGD-PUNTA GORDA FL 26.92 -81.99 1006.1 27/0953 220/019 27/1818 190/026 27/1658 KFMY-FORT MYERS PAGE FIELD FL 26.58 -81.97 1005.4 27/0853 190/017 27/1753 210/026 27/1755 KRSW-REGIONAL SOUTHWEST FL 26.54 -81.76 1005.4 27/0853 210/019 27/2153 230/027 27/1835

REMARKS:

NON-METAR OBSERVATIONS... NOTE: ANEMOMETER HEIGHT IN METERS AND WIND AVERAGING PERIOD IN MINUTES INDICATED UNDER MAXIMUM SUSTAINED WIND IF KNOWN

| LOCATION ID<br>LAT LON<br>DEG DECIMAL | MIN<br>PRES<br>( <u>MB</u> ) | DATE/<br>TIME<br>( <u>UTC</u> ) | MAX<br>SUST<br>( <u>DIR/KT</u> ) | DATE/<br>TIME<br>( <mark>UTC</mark> ) | PEAK<br>GUST<br>(DIR/KT) | DATE/<br>TIME<br>( <u>UTC</u> ) | _ |
|---------------------------------------|------------------------------|---------------------------------|----------------------------------|---------------------------------------|--------------------------|---------------------------------|---|
| ABS01<br>27.18 -81.35                 |                              |                                 |                                  |                                       | 999/036                  | 27/1515                         |   |
| CKYF1<br>29.14 -83.03                 |                              |                                 |                                  |                                       | 154/033                  | 28/1405                         |   |
| XSKY<br>27.60 -82.65                  |                              |                                 |                                  |                                       | 170/033                  | 28/1515                         |   |
|                                       |                              |                                 |                                  |                                       |                          |                                 |   |

REMARKS:

B. MARINE OBSERVATIONS... NOTE: ANEMOMETER HEIGHT IN METERS AND WIND AVERAGING PERIOD IN MINUTES INDICATED UNDER MAXIMUM SUSTAINED WIND IF KNOWN \_\_\_\_\_  $\begin{array}{c|ccc} \text{LOCATION ID} & \text{MIN} & \text{DATE}/ & \text{MAX} & \text{DATE}/ & \text{PEAK} & \text{DATE}/\\ \hline \textbf{LAT} & \text{LON} & & \hline \textbf{PRES} & \text{TIME} & \text{SUST} & \text{TIME} & \hline \textbf{GUST} & \text{TIME} \\ \hline \text{DEG} & \text{DECIMAL} & & \hline \textbf{(\underline{MB})} & (\underline{\textbf{UTC}}) & (\underline{\textbf{DIR}/\textbf{KT}}) & (\underline{\textbf{UTC}}) & (\underline{\textbf{DIR}/\textbf{KT}}) & (\underline{\textbf{UTC}}) \end{array}$ \_\_\_\_\_ CKYF1-CEDAR KEY-CMAN 29.14 -83.03 1004.6 27/2018 175/026 28/1530 190/033 28/1157 C10-COMPS BUOY 27.17 -82.93 9999.9 99/9999 I 999/999 99/9999 I 110/056 27/1200 FMRF1-FORT MYERS 26.65 -82.87 1004.9 27/0900 166/016 28/1836 167/024 28/1548 CWBF1-CLEARWATER BEACH 27.98 -82.83 1005.2 27/1754 168/029 28/1942 167/037 28/1718 OPTF1-OLD PORT TAMPA 27.86 -82.55 1005.6 27/1754 186/025 28/1530 182/030 28/1836 SAPF1-ST PETERSBURG 27.76 -82.63 1005.1 27/1800 176/023 28/1436 186/029 28/1912 REMARKS: C. STORM TOTAL RAINFALL FROM 1100 UTC MAY 26 UNTIL 1100 UTC MAY 28 \_\_\_\_\_

| CITY/TOWN<br>LAT LON<br>DEG DECIMAL | COUNTY       | ID | RAINFALL<br>(IN) |
|-------------------------------------|--------------|----|------------------|
| 1 NNW DOVER<br>28.00 -82.23         | HILLSBOROUGH |    | 6.60             |
| 1 N RIVERVIEW<br>27.88 -82.32       | HILLSBOROUGH |    | 4.92             |

| 4 SSE BOYETTE<br>27.76 -82.22      | HILLSBOROUGH | 3.73 |
|------------------------------------|--------------|------|
| 1 SSE VALRICO<br>27.93 -82.25      | HILLSBOROUGH | 3.12 |
| 2 WNW CAPE CORAL<br>26.58 -82.02   | LEE          | 3.08 |
| 4 ENE WILDWOOD<br>28.87 -81.98     | SUMTER       | 3.04 |
| 2 N LAKE JOSEPHINE<br>27.42 -81.44 | HIGHLANDS    | 2.80 |

REMARKS:

**D**. INLAND FLOODING...

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## E. MAXIMUM **STORM SURGE** AND **STORM TIDE...** OFFICIAL **TIDE** GAUGES NOTED WITH LEADING G

| COUNTY       | CITY/TOWN<br>OR LOCATION |          | IDE DATE/<br>FT) TIME | BEACH<br>EROSION |
|--------------|--------------------------|----------|-----------------------|------------------|
| LEVY         | G CEDAR KEY              | 2.73 1   | .80 28/1730           | UNKNOWN          |
| PINELLAS     | G CLEARWATER BE          | 1.09 1   | .90 28/1530           | MINOR            |
| HILLSBOROUGH | G MCKAY BAY              | 2.11 1   | .49 28/1800           | UNKNOWN          |
| HILLSBOROUGH | G OLD PORT TAMPA         | 1.90 1   | .38 28/1818           | UNKNOWN          |
| PINELLAS     | G SAINT PETERSBU         | R 1.87 1 | .22 28/1742           | UNKNOWN          |
| MANATEE      | G PORT MANATEE           | 1.81 1   | .08 27/1754           | UNKNOWN          |
| LEE          | G FORT MYERS             | 1.71 1   | .74 27/2000           | MINOR            |

REMARKS: STORM TIDE DATUM USED IS MHHW.

F. TORNADOES...

| (DIST)CITY/TOWN                     | COUNTY | DATE/                     | EF SCALE   |
|-------------------------------------|--------|---------------------------|------------|
| LAT LON (DEG DECIMAL<br>DESCRIPTION |        | TIME ( <mark>UTC</mark> ) | (IF KNOWN) |
|                                     |        |                           |            |

| G. STORM IMPACTS      | BY COUNTY |          |             |
|-----------------------|-----------|----------|-------------|
|                       |           |          |             |
| COUNTY<br>DESCRIPTION | DEATHS    | INJURIES | EVACUATIONS |

| DESCRIPTION |  |
|-------------|--|
|             |  |
| \$\$        |  |

Legend: I-Incomplete Data E-Estimated

NOAH