

South Carolina State Climatology Office

www.dnr.sc/climate/sco



Serves as the State's focal point for weather and climate information

- Archive, process, and disseminate South Carolina weather and climate data, to educate on current and emerging weather and climate issues
- Assist in forecast interpretation before, during, and after periods of severe weather
- Maintain an active research program
- Address drought related issues and response



Hope Mizzell



Mark Malsick

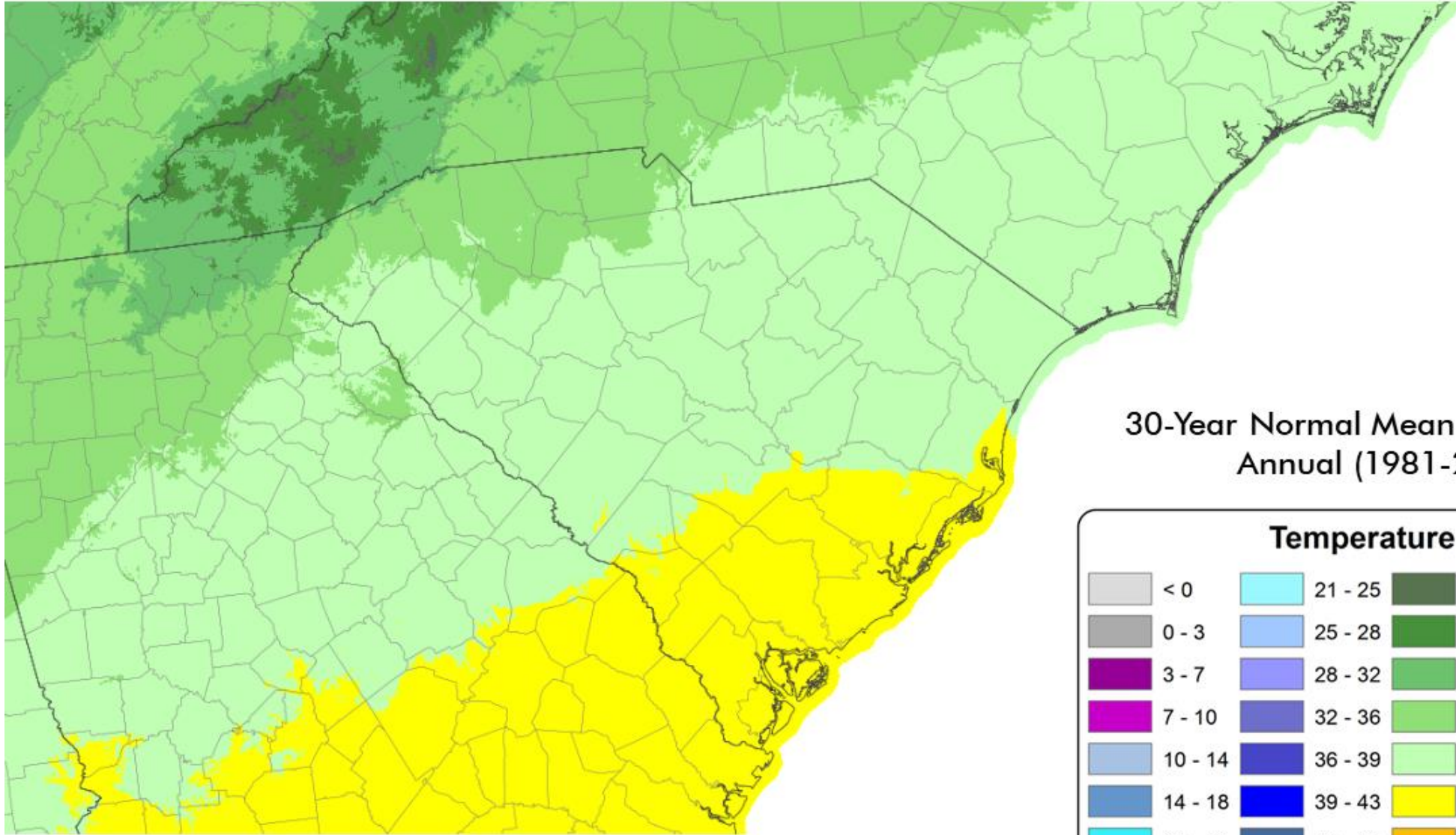


Melissa Griffin

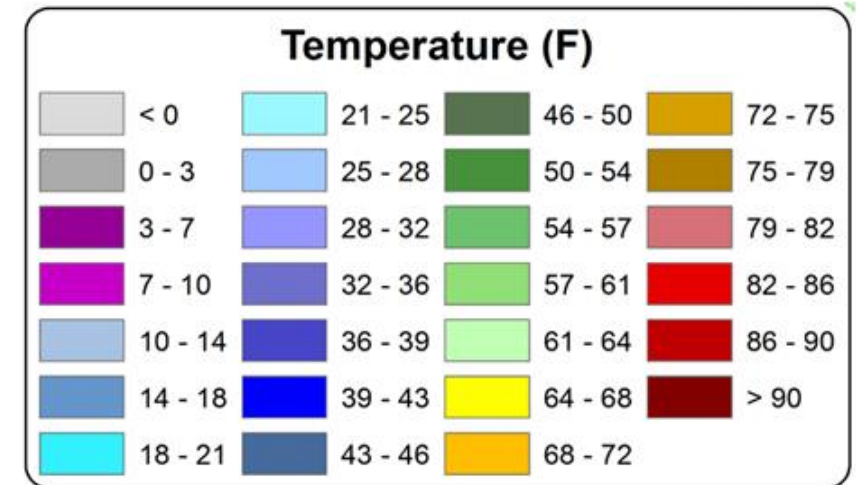


Elliot Wickham

SC 30-Year Normal Mean Annual Temperature 1981-2010

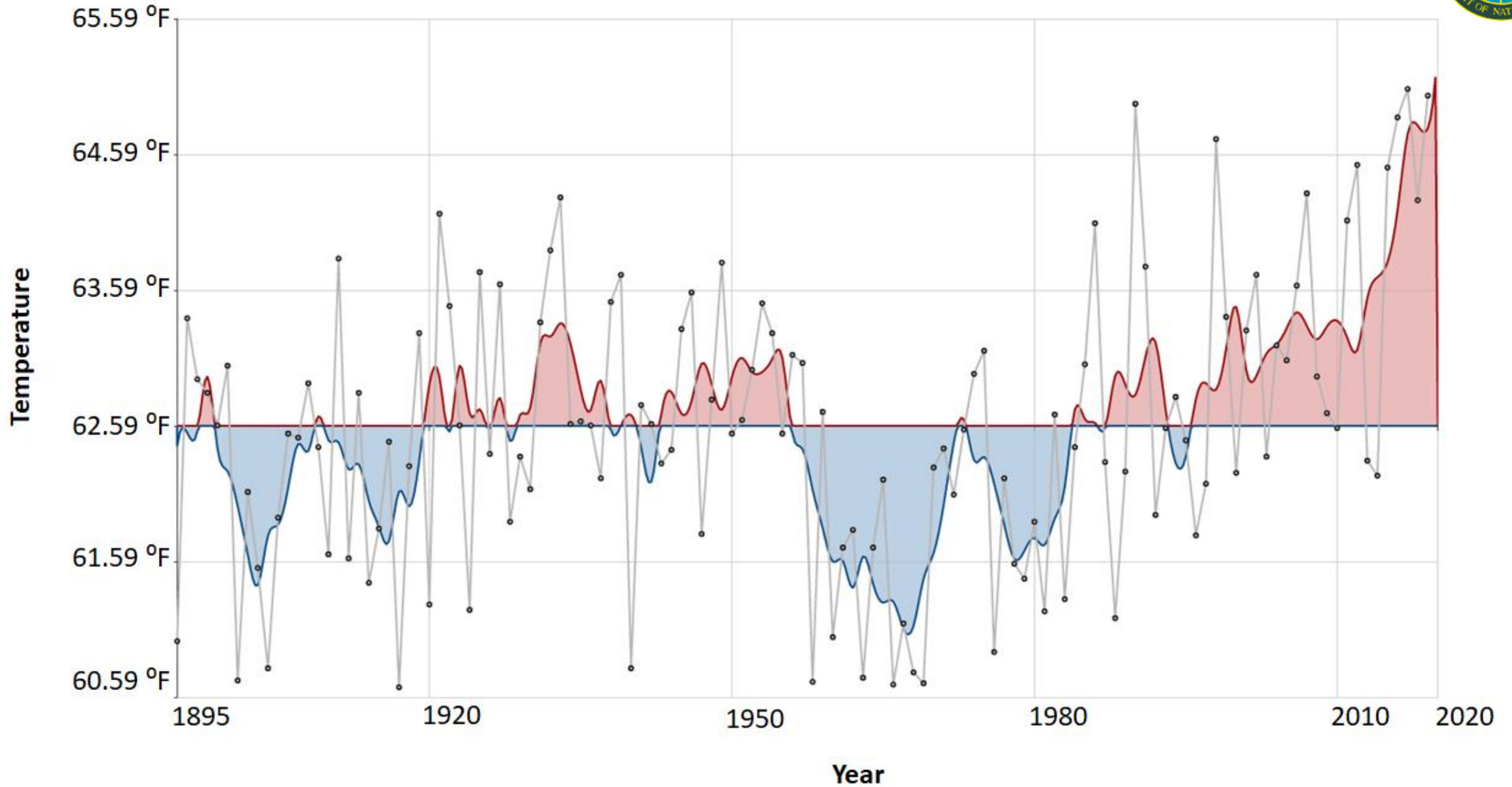


30-Year Normal Mean Temperature Annual (1981-2010)



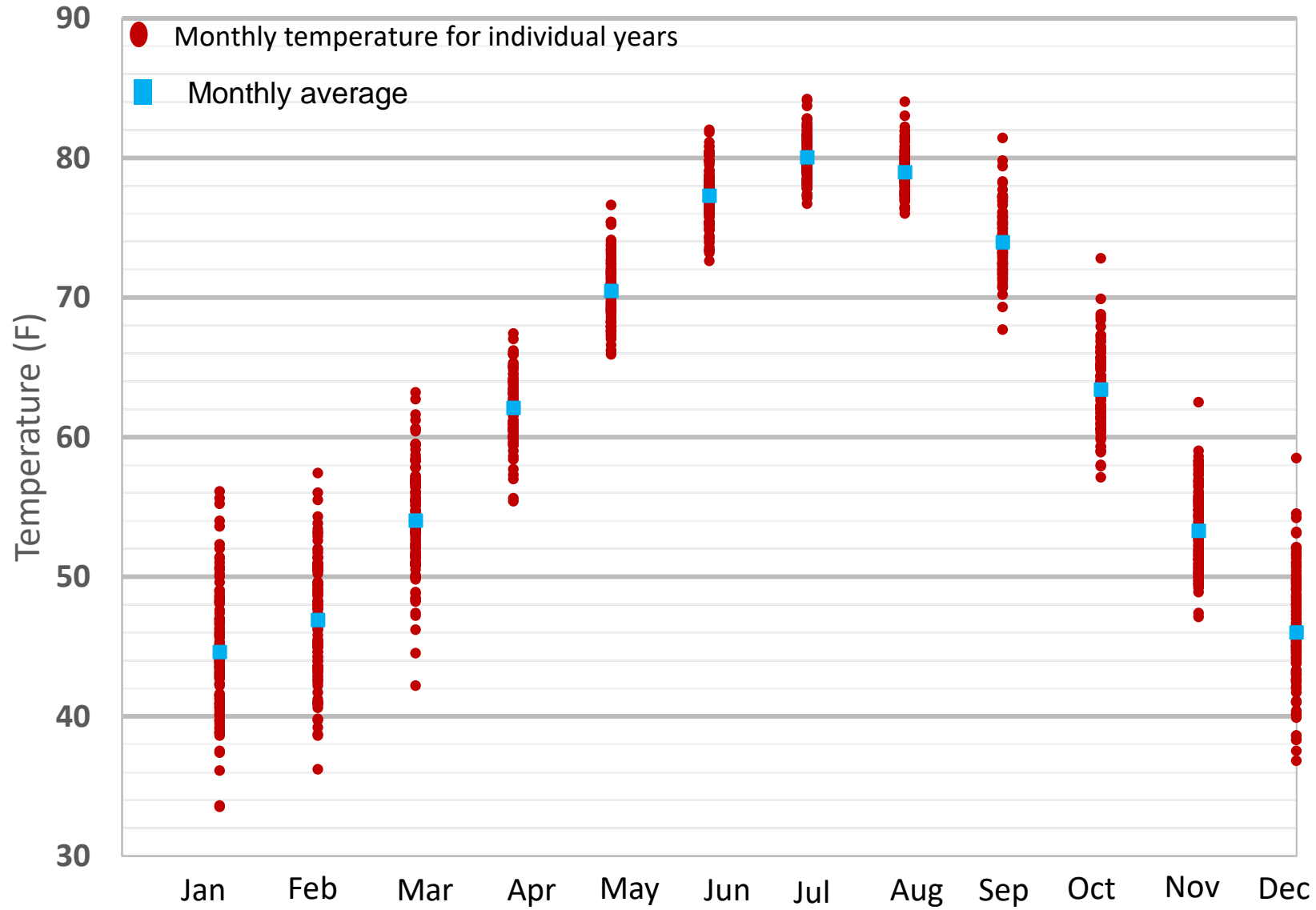
Map from PRISM Climate Group, Oregon State University

SC Statewide Average Annual Temperature 1895-2019





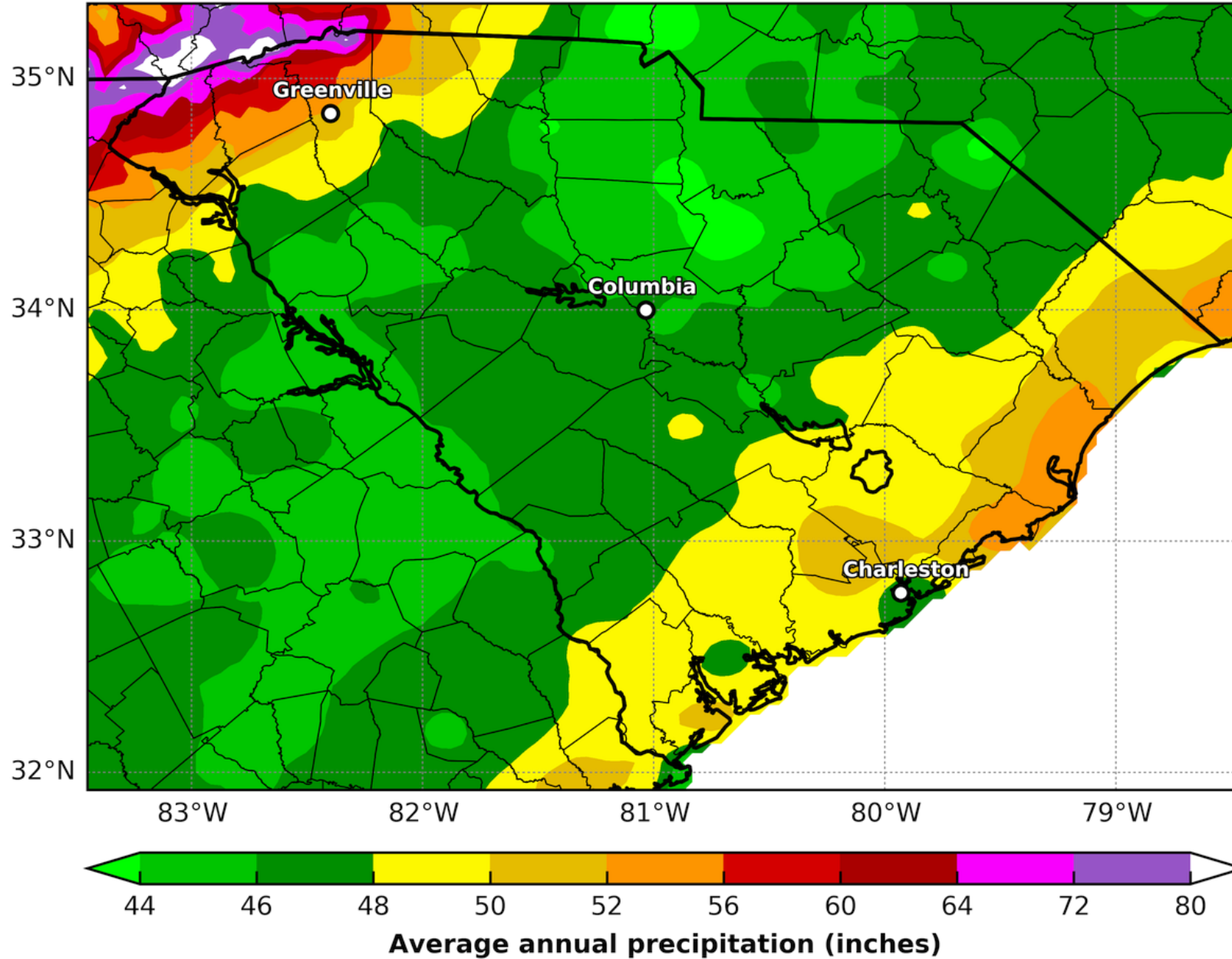
South Carolina Monthly Temperature 1895-2019



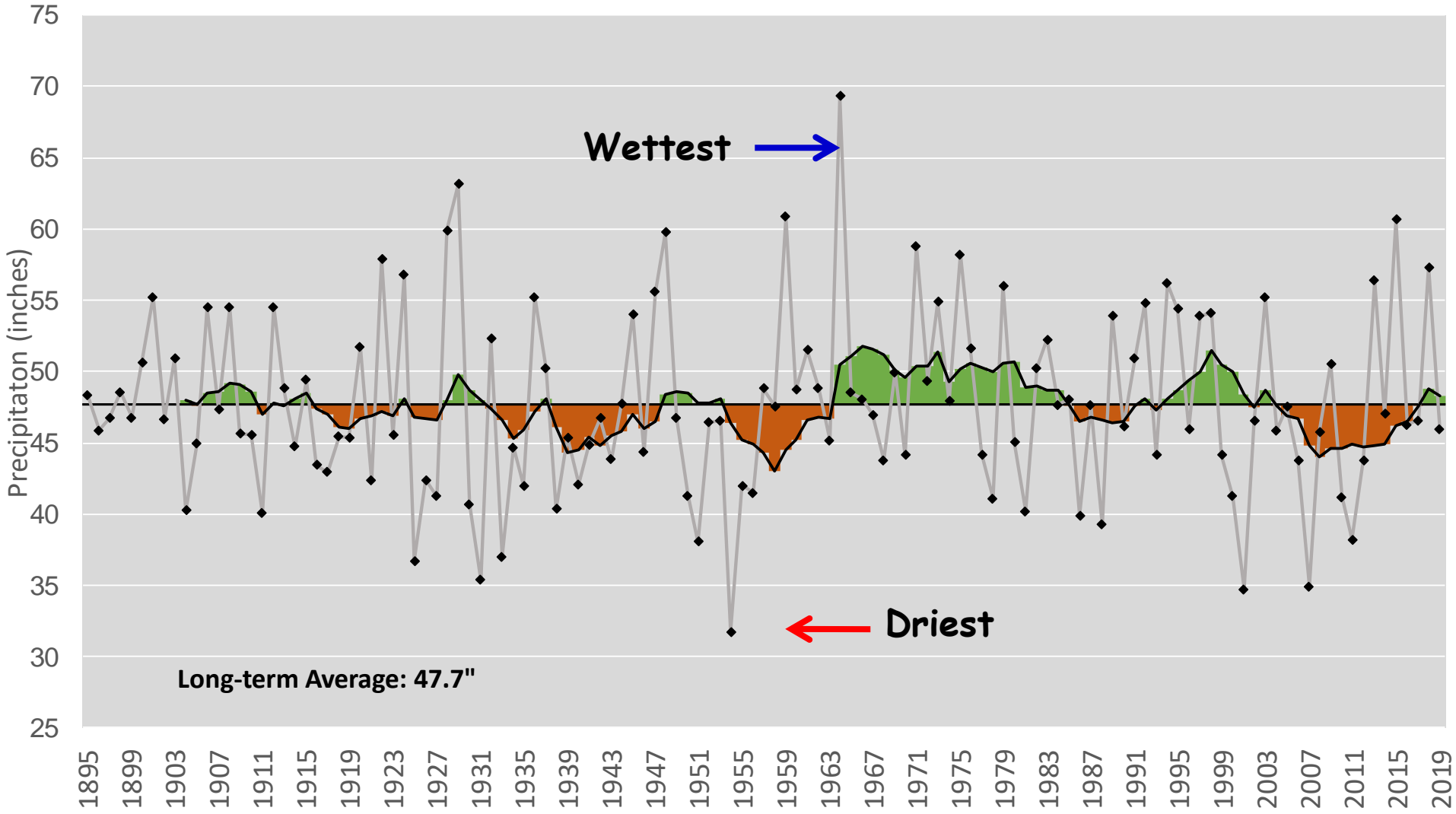
South Carolina Maximum and Minimum Temperature Extremes: 1887-2019

Date	Max Temp (°F)	Station(s)	Date	Min Temp (°F)	Station(s)
Jan 30, 2002	88	Manning	Jan 21, 1985	-19	Caesars Head
Feb 28, 1989	89	Ridgeland	Feb 14, 1899	-11	Santuck, Shaws Fork
Mar 22, 1907/ Mar 23, 1907	99	Sumter/ Darlington	Mar 3, 1980	-3	Chesnee 7 WSW
Apr 24, 1925 / Apr 26, 1925 Apr 27, 1986 / Apr 28, 1986	99	Blackville/ Society Hill Yemassee/ Aiken	Apr 3, 1992 Apr 8, 2007	17	Chesnee Caesars Head
May 30, 1896/May 20, 1902 May 26, 1911	106	Gillisonville/Aiken Santuck	May 17, 1997	26	Ninety Nine Islands
Jun 29, 2012	113	USC-Columbia	Jun 1, 1984	37	Spartanburg
Jul 1, 2012	111	Johnston 4 SW	Jul 2, 2008	45	Jocassee 8 WNW
Aug 11, 2007	110	Johnston 4 SW	Aug 9, 2002	41	Cedar Creek
Sep 4, 1925 / Sep 8, 1925	111	Blackville 3 W / Calhoun Falls	Sep 30, 1967	28	Caesars Head
Oct 4, 2019	105	Pelion 0.8 NW	Oct 30, 1965	16	Chester 1 SE
Nov 1, 1961	93	Bamberg	Nov 25, 1950	-1	Caesars Head
Dec 11, 1972	88	McClellanville	Dec 30, 1917	-6	Landrum

South Carolina Average Annual Precipitation



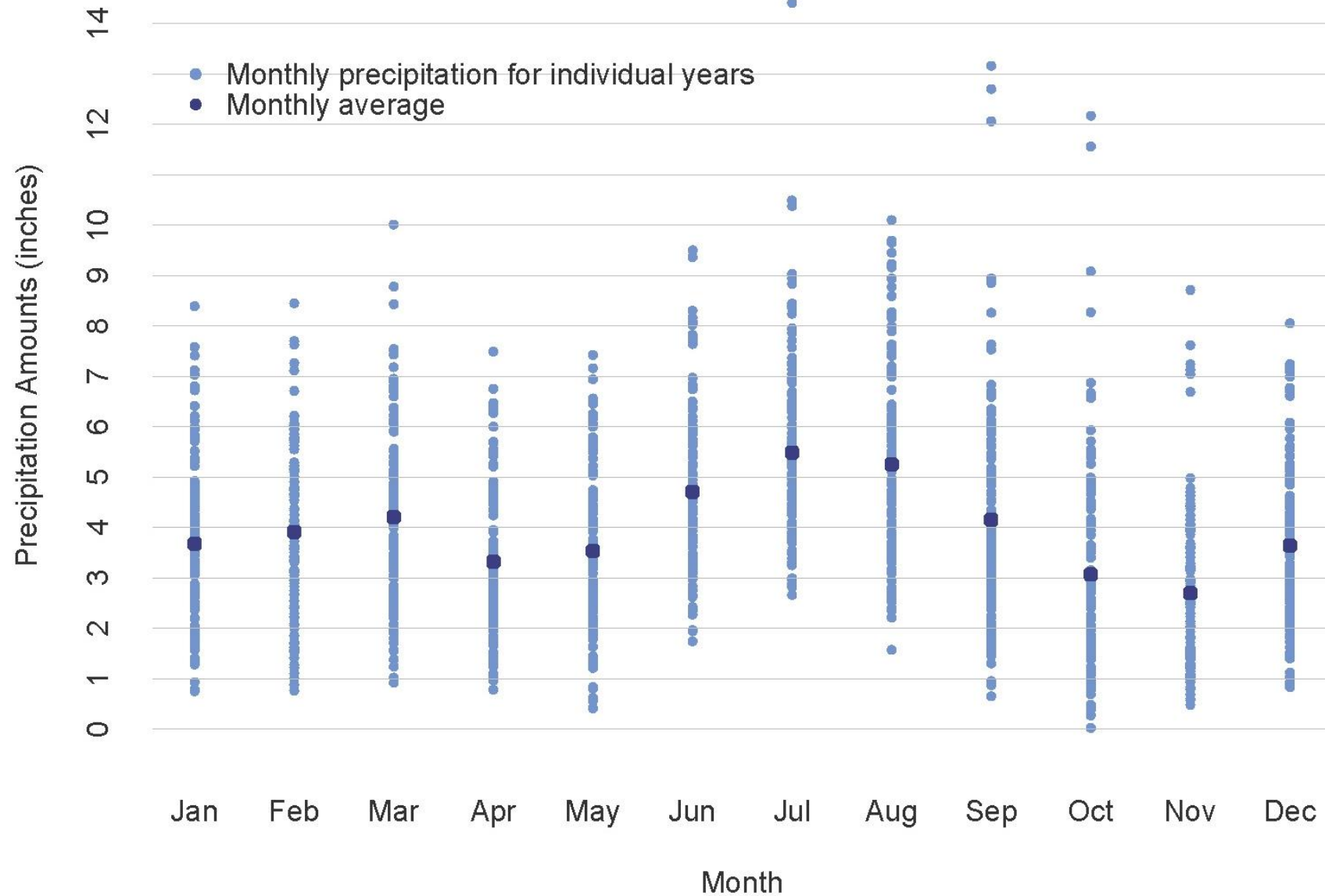
SC Annual Precipitation Trend 1895-2019



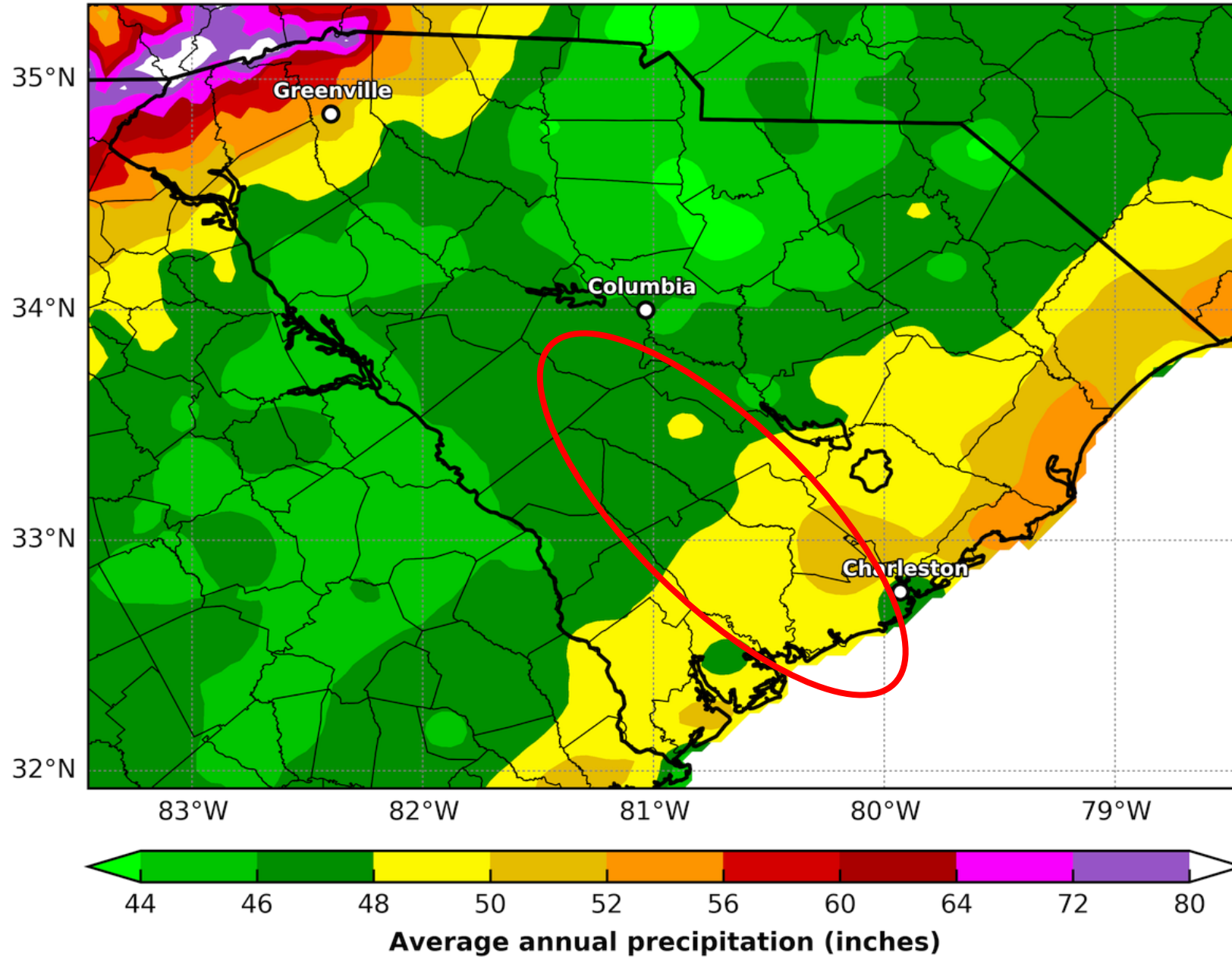
SC Statewide Annual Precipitation History with 10-Yr Moving Avg.
1895-2019



South Carolina Monthly Precipitation 1895-2019

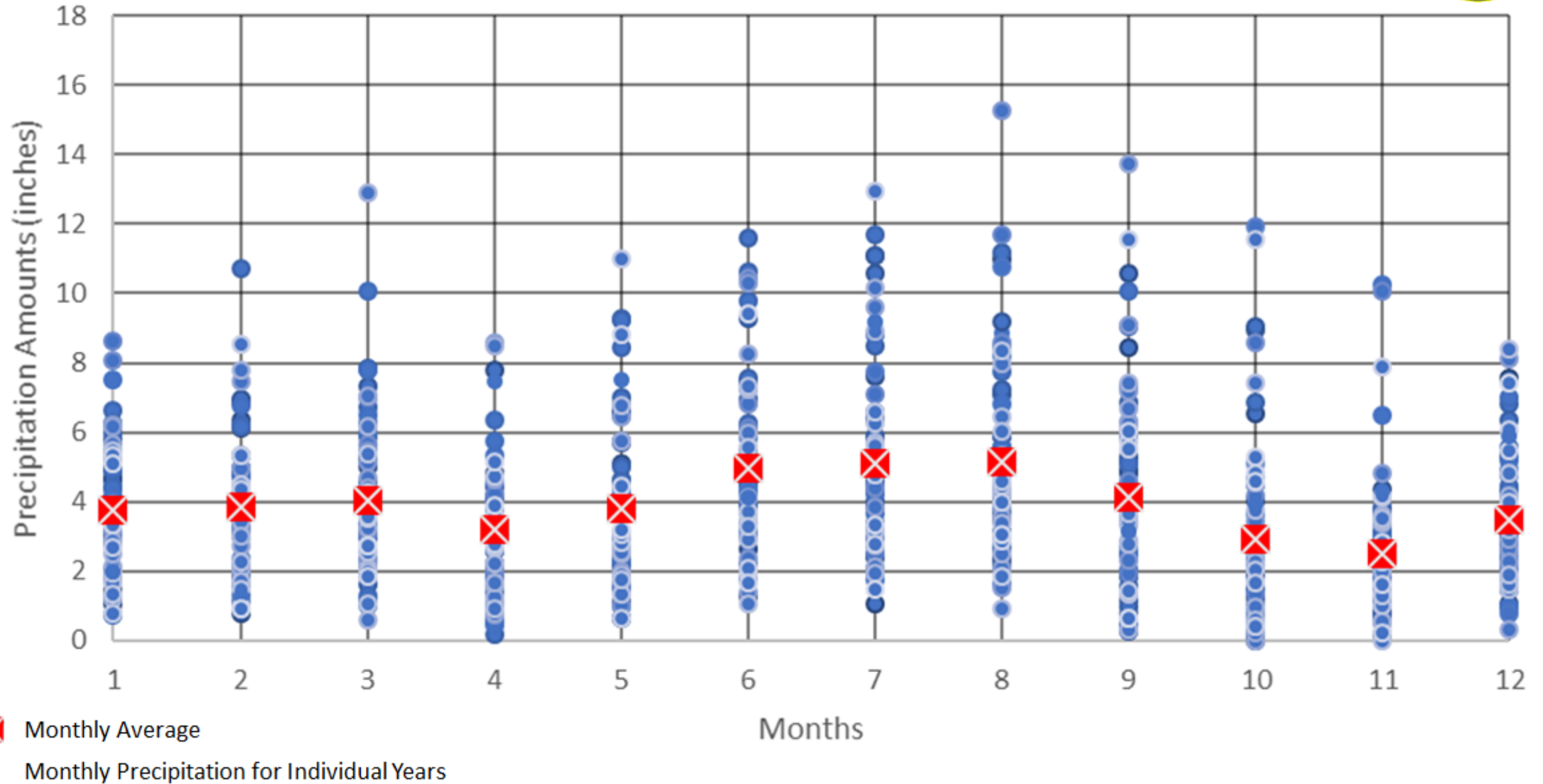


South Carolina Average Annual Precipitation





Bamberg Monthly Precipitation (1952-2020)



Extreme Rainfall

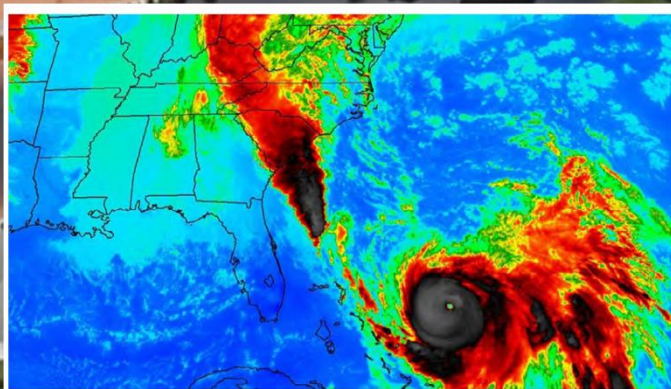
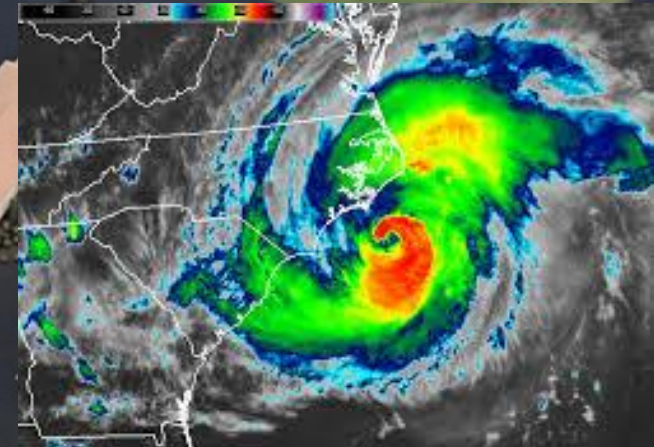
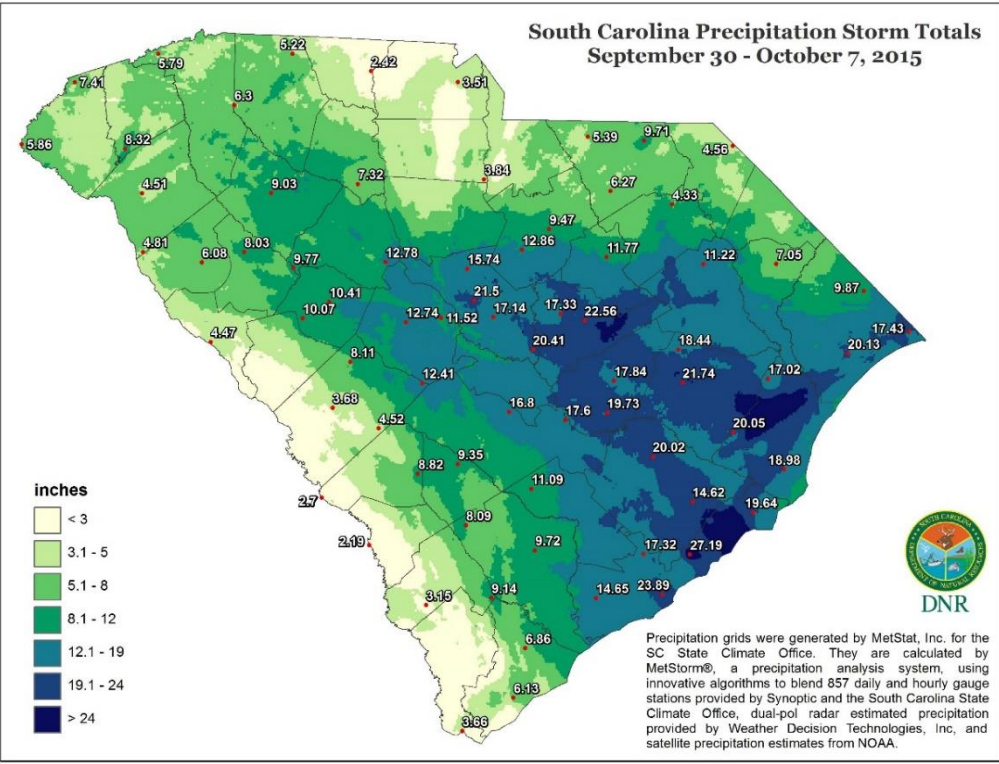


Figure 1. Infrared satellite image of the intense rainfall being funneled into South Carolina during the morning of October 3, 2015. (NASA)



**South Carolina Precipitation Storm Totals
September 30 - October 7, 2015**



October 2015

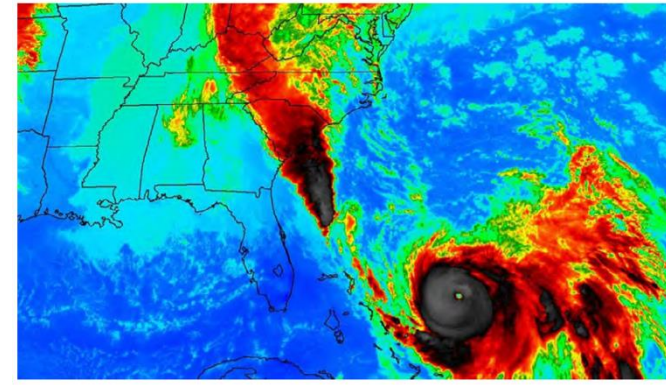
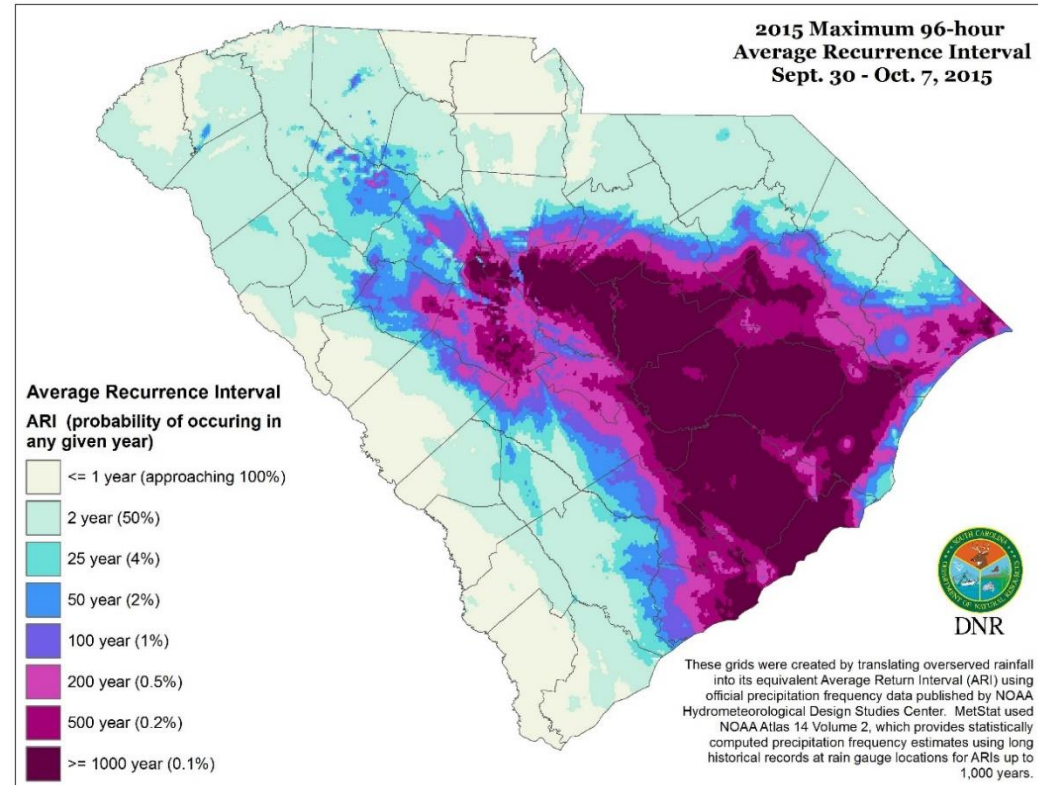


Figure 1. Infrared satellite image of the intense rainfall being funneled into South Carolina during the morning of October 3, 2015. (NASA)



**2015 Maximum 96-hour
Average Recurrence Interval
Sept. 30 - Oct. 7, 2015**



NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: SC

POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 2, Version 3

PF tabular

PF graphical

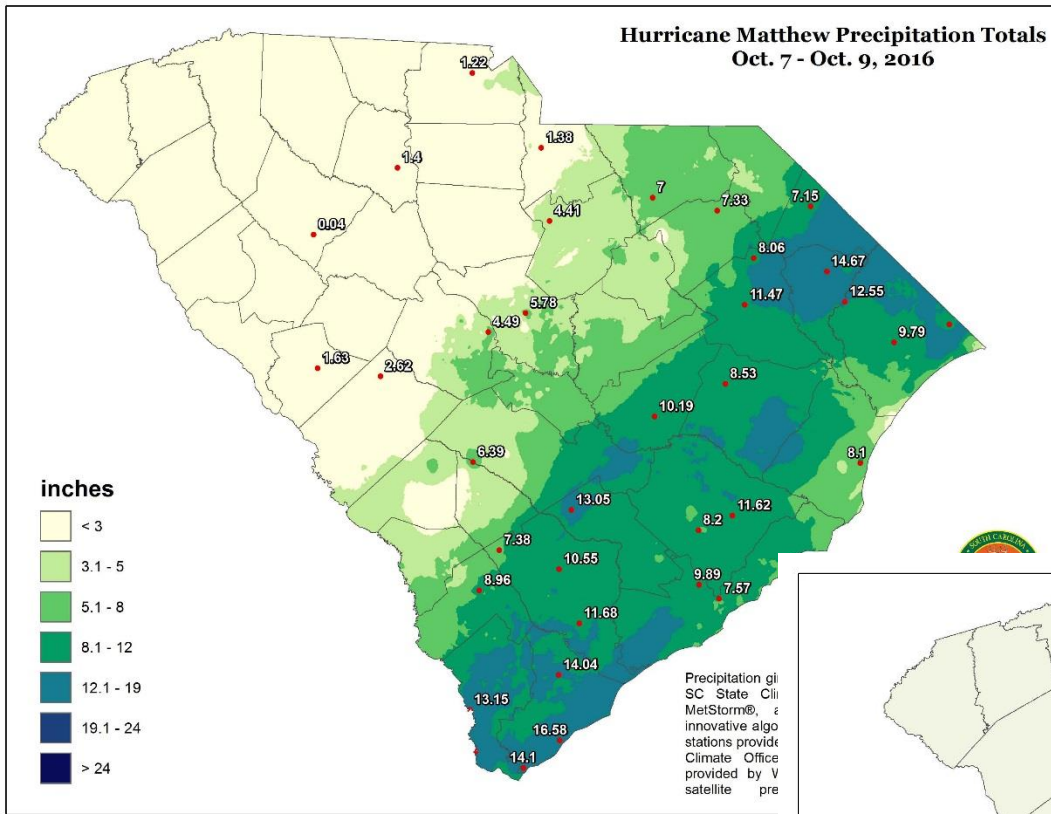
Supplementary information

 [Print page](#)

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.500 (0.464-0.539)	0.583 (0.542-0.631)	0.671 (0.622-0.726)	0.760 (0.701-0.819)	0.857 (0.788-0.923)	0.938 (0.860-1.01)	1.02 (0.927-1.10)	1.09 (0.990-1.18)	1.19 (1.07-1.29)	1.28 (1.13-1.38)
10-min	0.798 (0.741-0.862)	0.933 (0.867-1.01)	1.08 (0.996-1.16)	1.22 (1.12-1.31)	1.37 (1.26-1.47)	1.50 (1.37-1.61)	1.62 (1.47-1.74)	1.73 (1.57-1.87)	1.88 (1.69-2.04)	2.01 (1.79-2.18)
15-min	0.997 (0.926-1.08)	1.17 (1.09-1.27)	1.36 (1.26-1.47)	1.54 (1.42-1.66)	1.73 (1.59-1.87)	1.89 (1.73-2.04)	2.04 (1.86-2.20)	2.19 (1.98-2.36)	2.37 (2.12-2.56)	2.52 (2.24-2.74)
30-min	1.37 (1.27-1.48)	1.62 (1.51-1.75)	1.93 (1.79-2.09)	2.23 (2.06-2.40)	2.56 (2.36-2.76)	2.85 (2.61-3.07)	3.13 (2.85-3.37)	3.40 (3.08-3.67)	3.77 (3.38-4.08)	4.09 (3.63-4.43)
60-min	1.71 (1.58-1.84)	2.03 (1.89-2.20)	2.48 (2.30-2.68)	2.90 (2.68-3.13)	3.41 (3.14-3.68)	3.86 (3.54-4.16)	4.31 (3.93-4.65)	4.77 (4.32-5.15)	5.41 (4.84-5.85)	5.96 (5.30-6.47)
2-hr	2.03 (1.88-2.18)	2.44 (2.26-2.62)	3.03 (2.81-3.26)	3.60 (3.32-3.87)	4.29 (3.94-4.61)	4.89 (4.48-5.24)	5.47 (4.97-5.88)	6.07 (5.47-6.52)	6.86 (6.12-7.38)	7.53 (6.66-8.13)
3-hr	2.17 (2.02-2.35)	2.61 (2.42-2.83)	3.26 (3.01-3.53)	3.90 (3.59-4.22)	4.70 (4.30-5.07)	5.41 (4.92-5.84)	6.12 (5.53-6.61)	6.88 (6.16-7.42)	7.90 (6.98-8.54)	8.81 (7.69-9.54)
6-hr	2.57 (2.37-2.79)	3.08 (2.84-3.35)	3.86 (3.55-4.20)	4.61 (4.23-5.01)	5.59 (5.10-6.07)	6.46 (5.84-7.00)	7.33 (6.58-7.95)	8.27 (7.35-8.96)	9.55 (8.38-10.4)	10.7 (9.26-11.6)
12-hr	2.99 (2.74-3.28)	3.59 (3.29-3.94)	4.51 (4.14-4.95)	5.43 (4.95-5.94)	6.62 (5.99-7.22)	7.69 (6.90-8.37)	8.79 (7.81-9.56)	9.98 (8.77-10.8)	11.6 (10.1-12.6)	13.1 (11.2-14.3)
24-hr	3.43 (3.13-3.75)	4.17 (3.81-4.57)	5.40 (4.92-5.90)	6.39 (5.80-6.98)	7.78 (7.04-8.51)	8.92 (8.04-9.74)	10.1 (9.08-11.1)	11.4 (10.2-12.5)	13.2 (11.7-14.4)	14.6 (12.9-16.0)
2-day	4.01 (3.67-4.41)	4.87 (4.45-5.34)	6.23 (5.69-6.83)	7.34 (6.68-8.03)	8.89 (8.06-9.73)	10.2 (9.17-11.1)	11.5 (10.3-12.6)	12.9 (11.5-14.1)	14.9 (13.2-16.3)	16.5 (14.5-18.0)
3-day	4.29 (3.93-4.69)	5.19 (4.76-5.68)	6.60 (6.04-7.22)	7.74 (7.05-8.45)	9.32 (8.47-10.2)	10.6 (9.59-11.6)	12.0 (10.8-13.1)	13.4 (12.0-14.6)	15.4 (13.7-16.8)	16.9 (15.0-18.6)
4-day	4.56 (4.18-4.98)	5.51 (5.06-6.02)	6.97 (6.38-7.60)	8.14 (7.43-8.86)	9.76 (8.88-10.6)	11.1 (10.0-12.0)	12.4 (11.2-13.5)	13.9 (12.4-15.1)	15.8 (14.1-17.3)	17.4 (15.4-19.1)
7-day	5.33 (4.91-5.79)	6.42 (5.92-6.98)	8.02 (7.39-8.71)	9.29 (8.53-10.1)	11.0 (10.1-12.0)	12.4 (11.3-13.5)	13.9 (12.6-15.1)	15.4 (13.9-16.7)	17.4 (15.7-19.0)	19.0 (17.0-20.8)
10-day	6.07 (5.61-6.58)	7.29 (6.73-7.88)	8.95 (8.26-9.67)	10.2 (9.42-11.0)	12.0 (11.0-12.9)	13.3 (12.2-14.4)	14.7 (13.4-15.9)	16.1 (14.6-17.5)	18.0 (16.3-19.6)	19.5 (17.6-21.2)
20-day	8.14 (7.56-8.76)	9.71 (9.02-10.5)	11.7 (10.9-12.6)	13.3 (12.3-14.3)	15.4 (14.3-16.6)	17.1 (15.8-18.4)	18.8 (17.3-20.2)	20.5 (18.8-22.0)	22.8 (20.8-24.6)	24.6 (22.4-26.6)
30-day	10.0 (9.42-10.7)	11.9 (11.2-12.7)	14.1 (13.3-15.1)	15.8 (14.8-16.8)	18.0 (16.9-19.2)	19.7 (18.4-21.0)	21.4 (20.0-22.8)	23.1 (21.5-24.6)	25.4 (23.5-27.1)	27.1 (25.0-29.0)
45-day	12.6 (11.9-13.4)	14.9 (14.1-15.8)	17.4 (16.4-18.5)	19.3 (18.2-20.5)	21.8 (20.5-23.1)	23.7 (22.2-25.1)	25.5 (23.9-27.1)	27.3 (25.5-29.0)	29.7 (27.6-31.7)	31.5 (29.2-33.7)
60-day	15.0 (14.1-15.9)	17.7 (16.7-18.7)	20.5 (19.3-21.7)	22.6 (21.3-23.9)	25.3 (23.8-26.8)	27.3 (25.6-28.9)	29.3 (27.4-31.0)	31.2 (29.2-33.1)	33.7 (31.4-35.9)	35.6 (33.1-38.0)



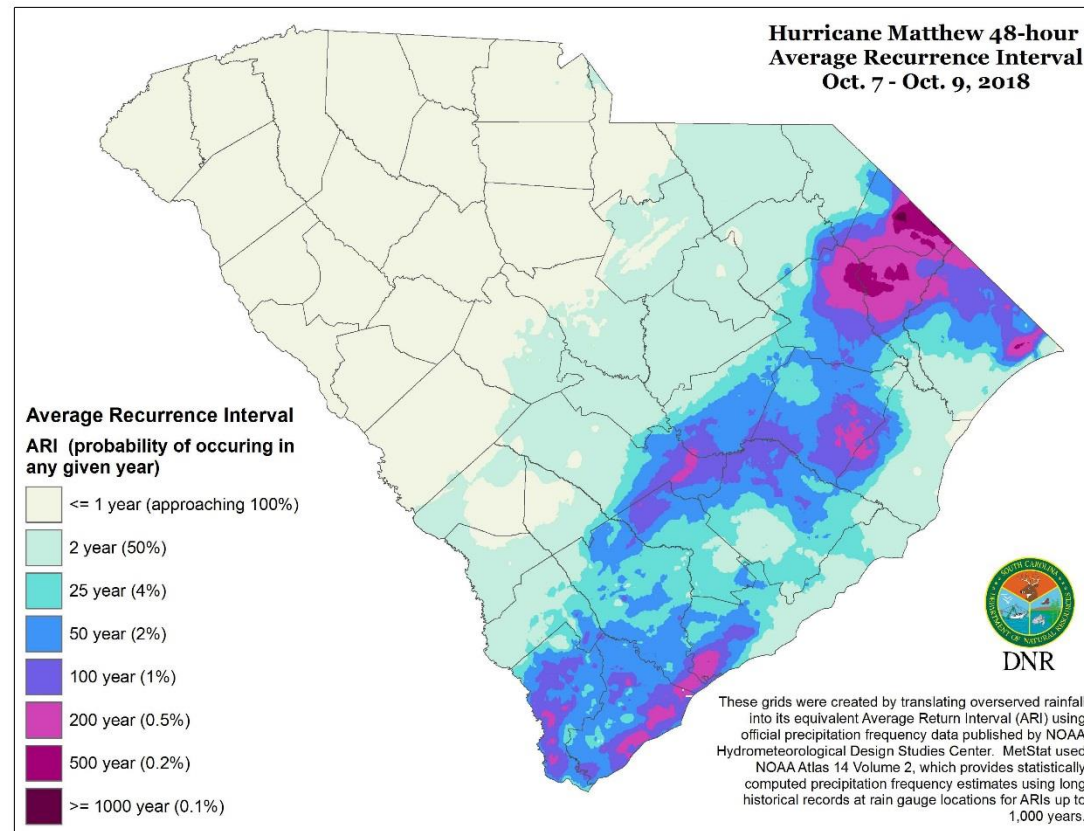
Hurricane Matthew Precipitation Totals Oct. 7 - Oct. 9, 2016

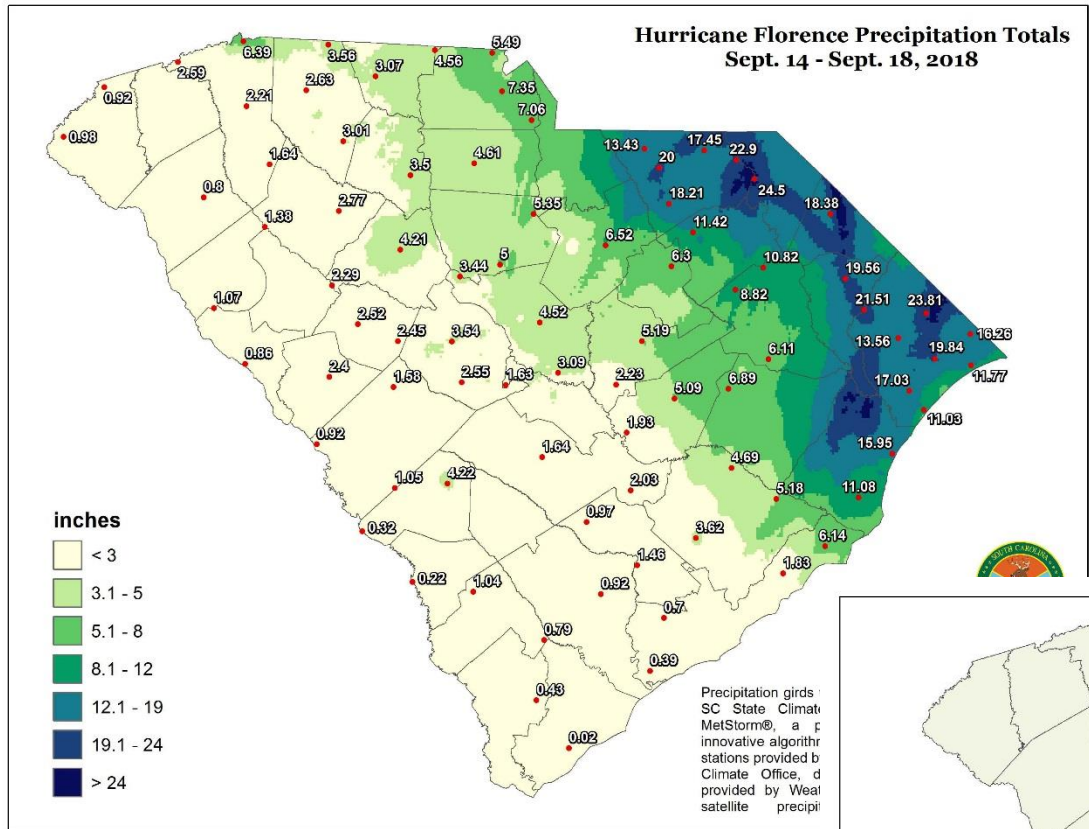


October 2016

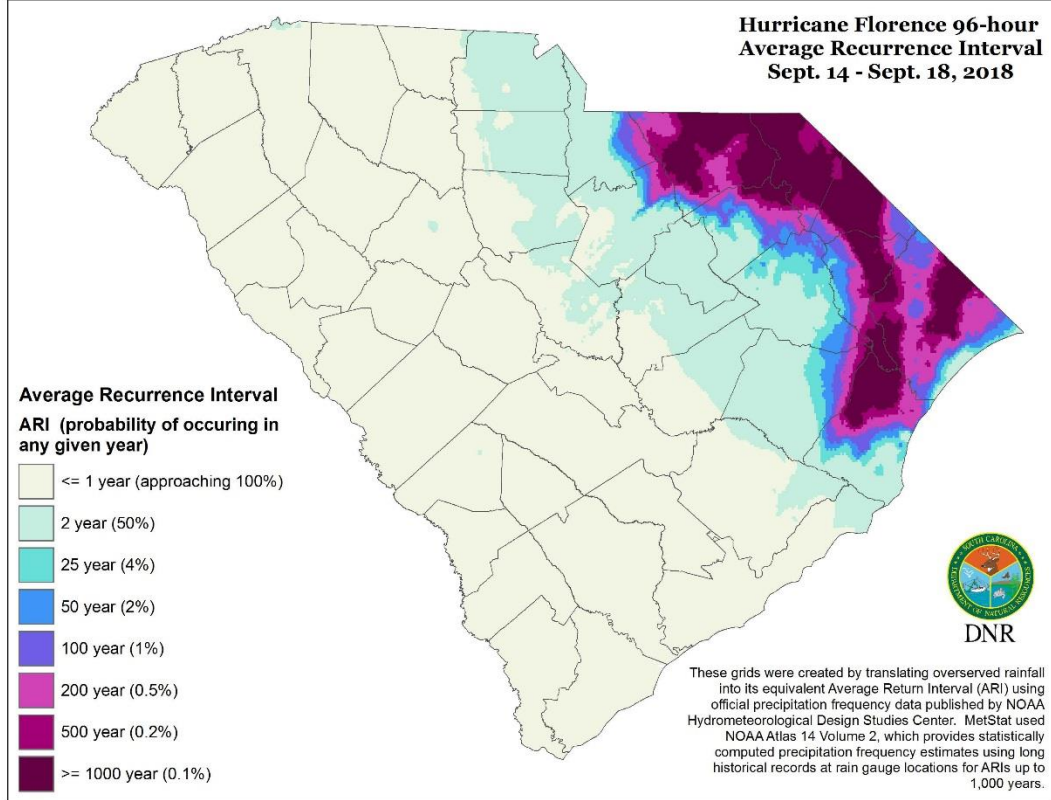
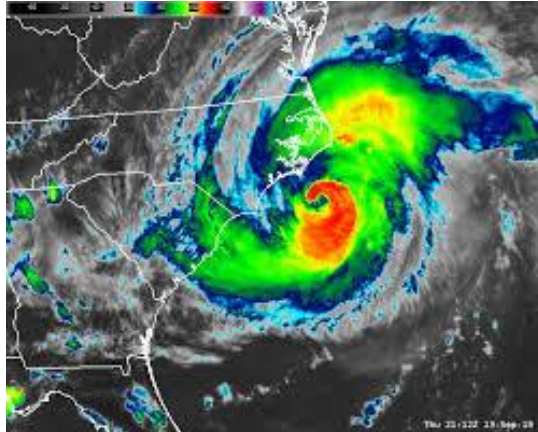


Hurricane Matthew 48-hour Average Recurrence Interval Oct. 7 - Oct. 9, 2018

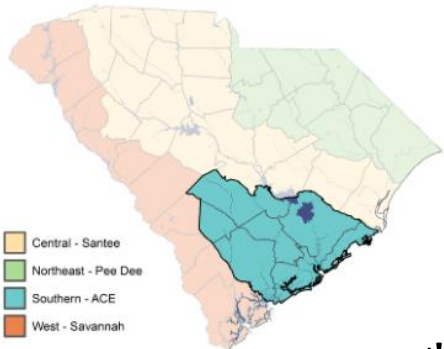




September 2018

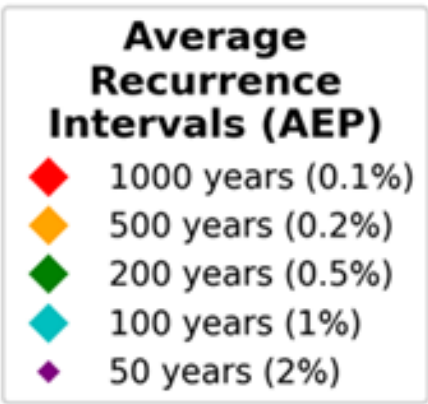
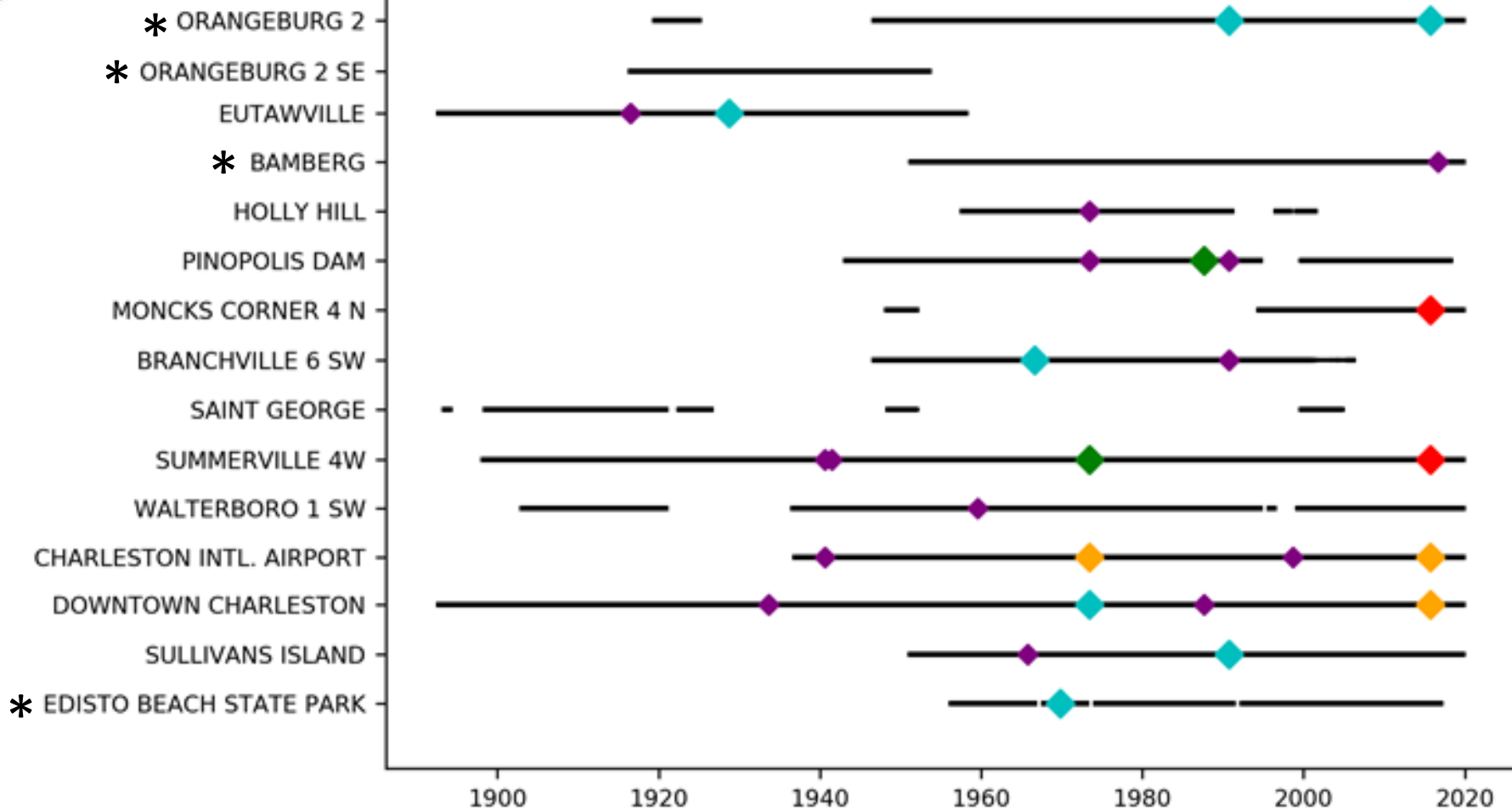


4-Day 100-Yr (or Higher) Rainfall Events



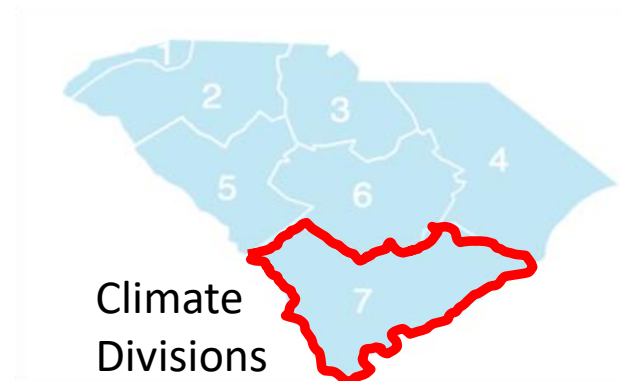
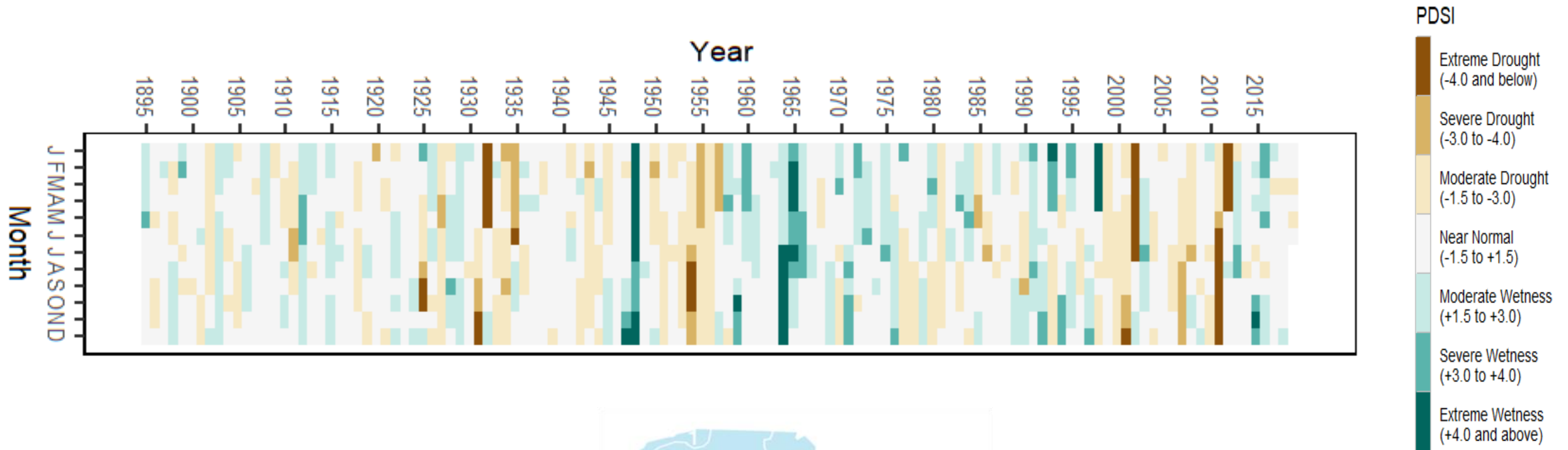
- Central - Santee
- Northeast - Pee Dee
- Southern - ACE
- West - Savannah

TIMELINE OF 4-DAY RAINFALL EVENTS: SOUTHERN DMA - ACE



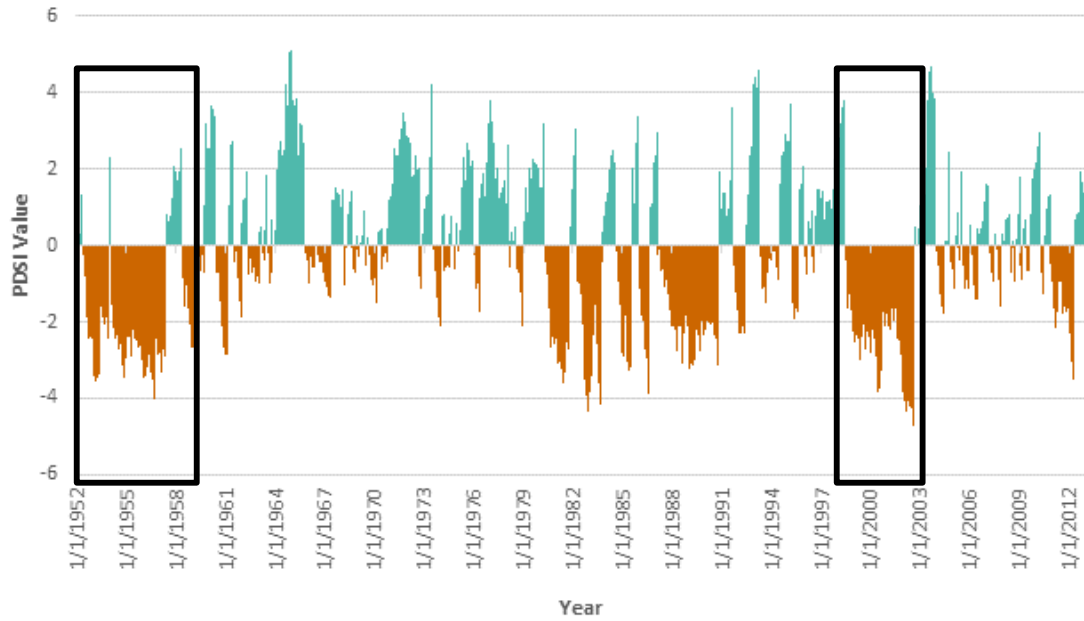


Palmer Drought Severity Index 1895-2018

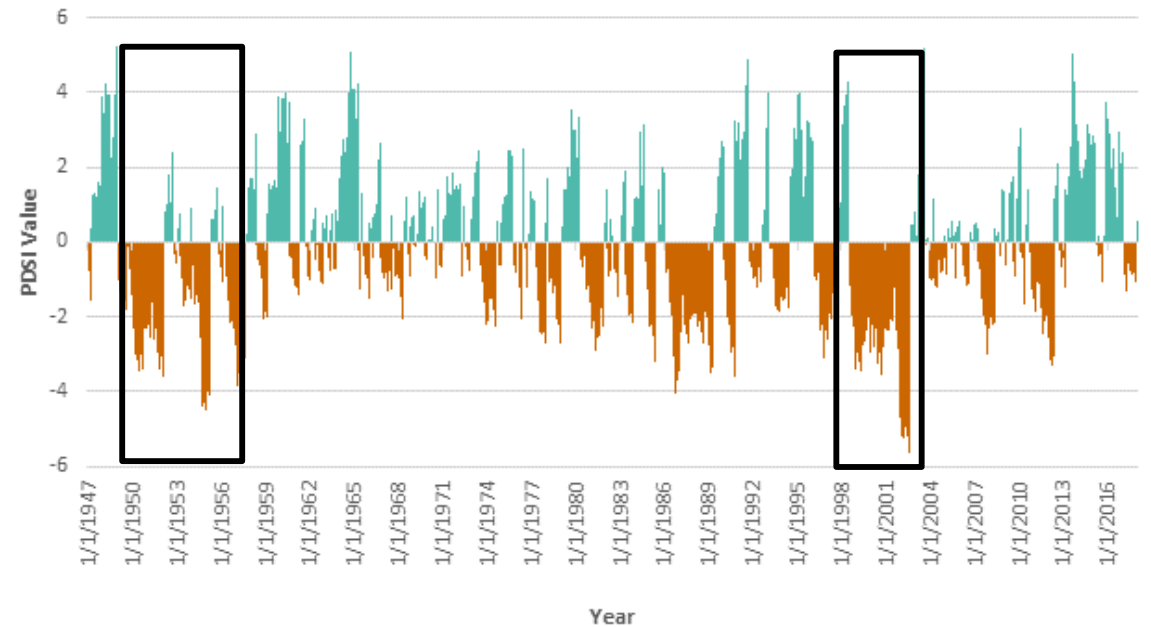


Localized Palmer Drought Severity Index Data

Edgefield 3 NNE: Monthly PDSI (1952-2017)

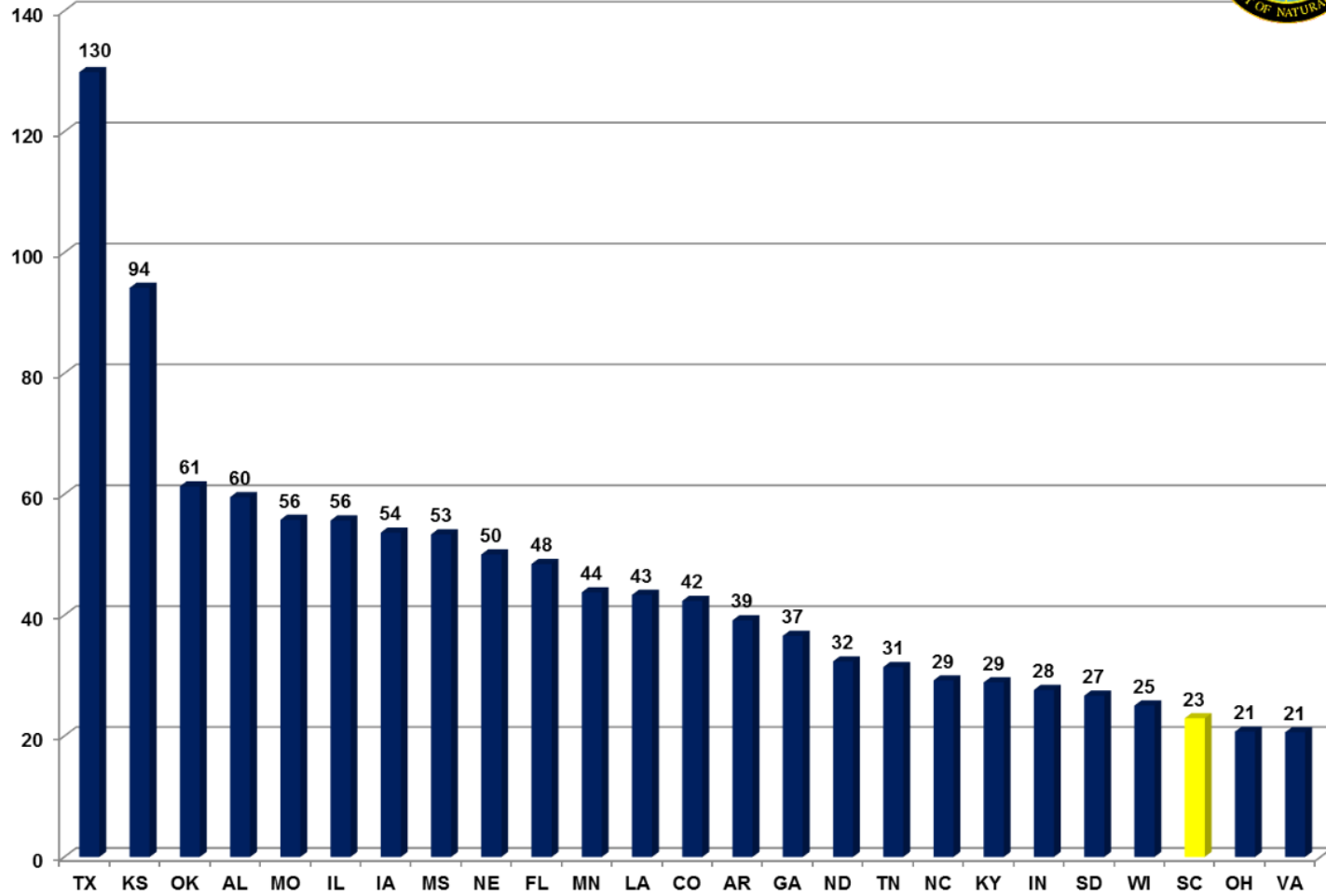


Orangeburg 2: Monthly PDSI (1947-2017)

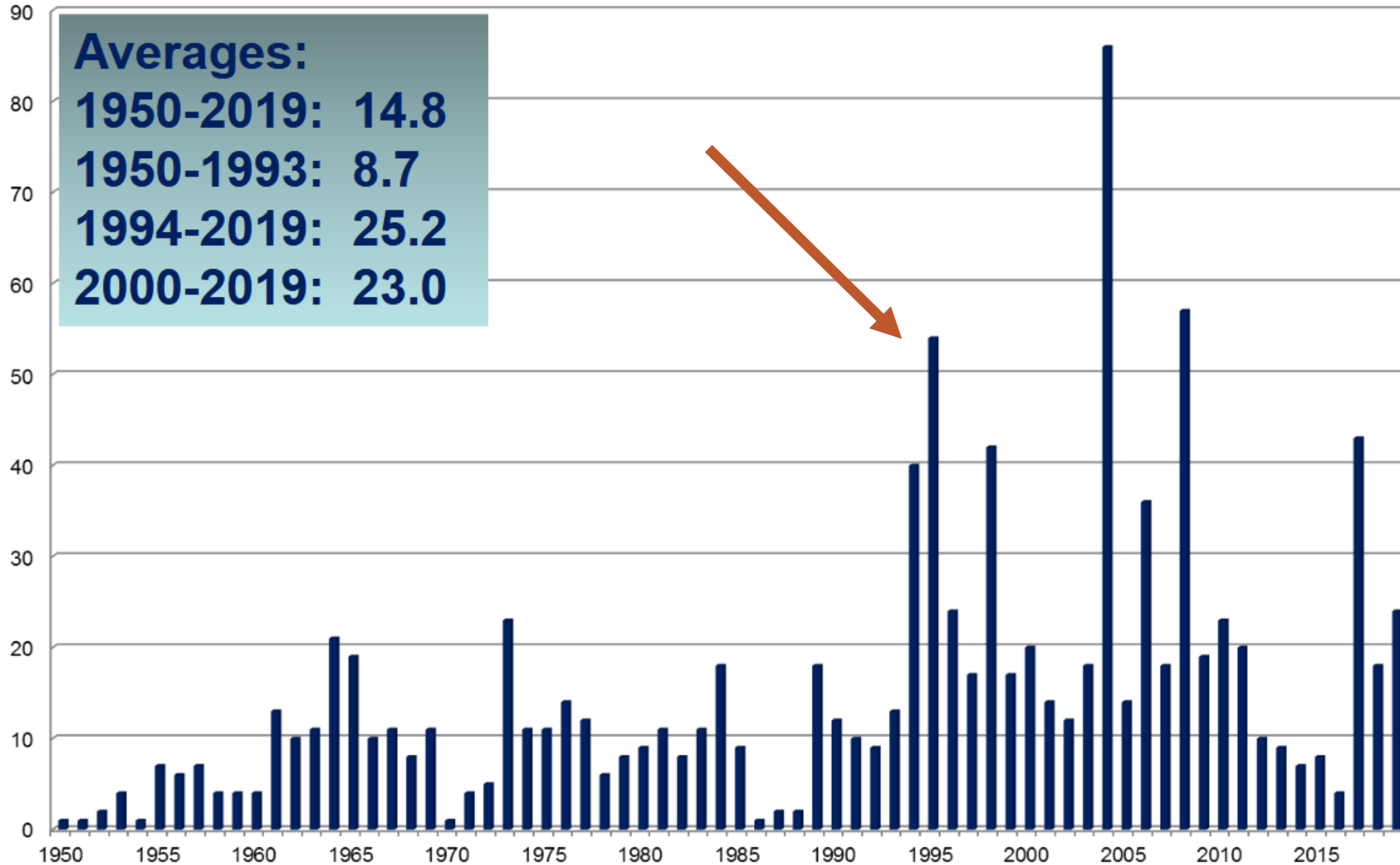


TOP 25 TORNADO STATES 2000-2019

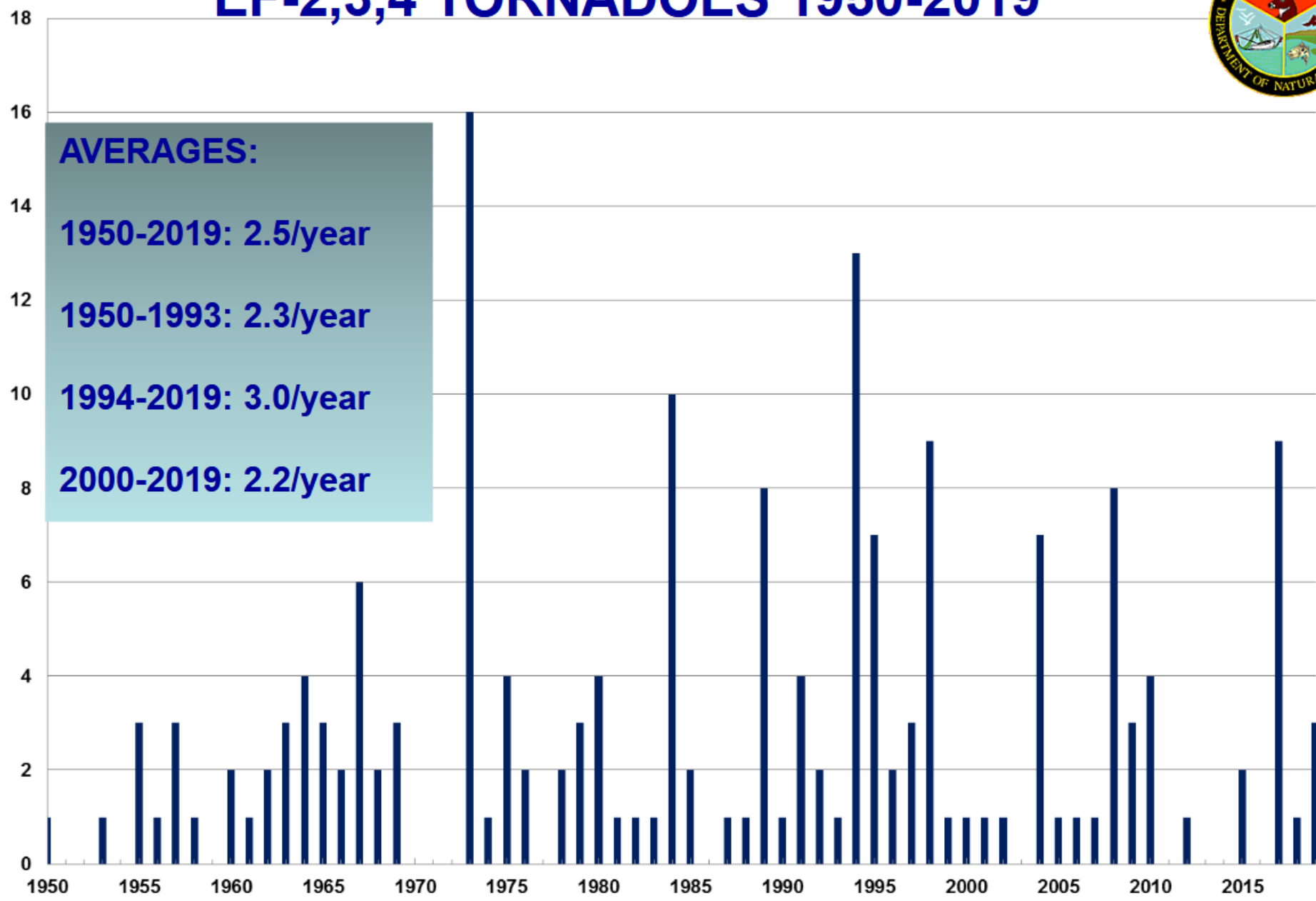
AVERAGE TORNADOES PER YEAR



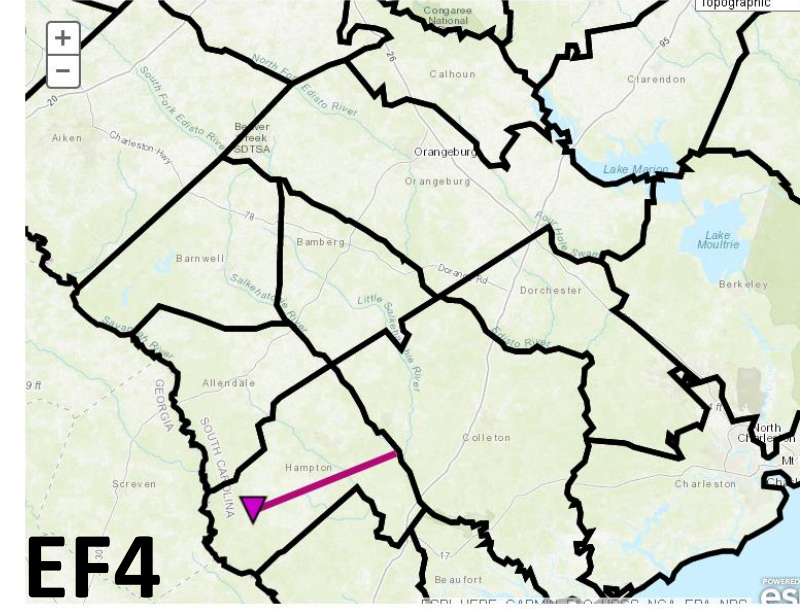
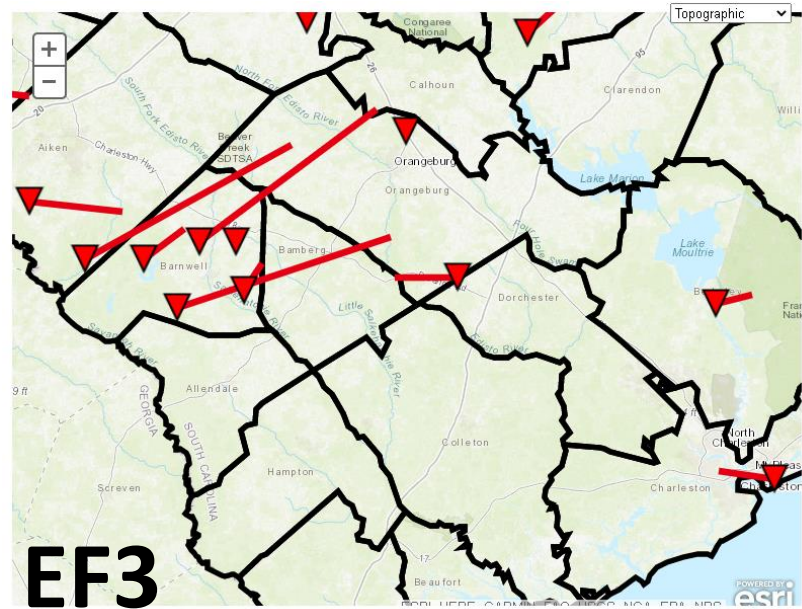
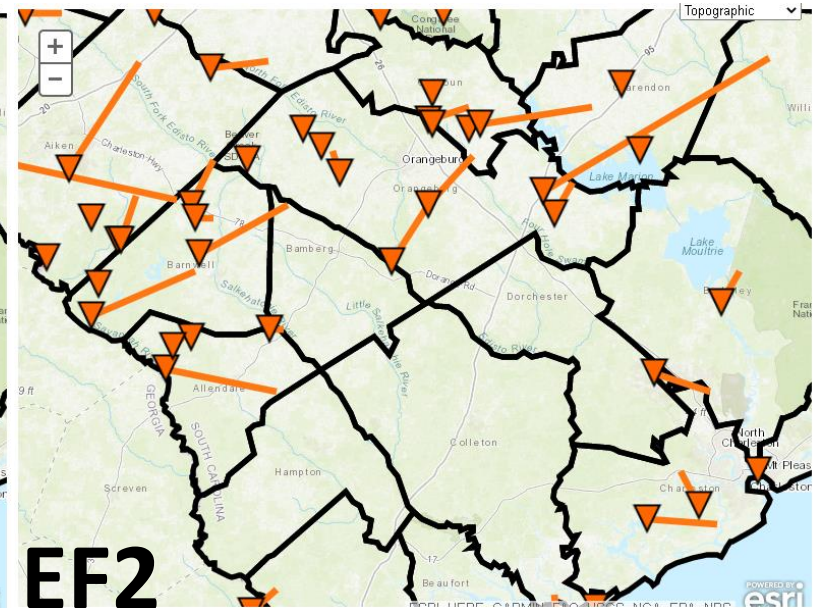
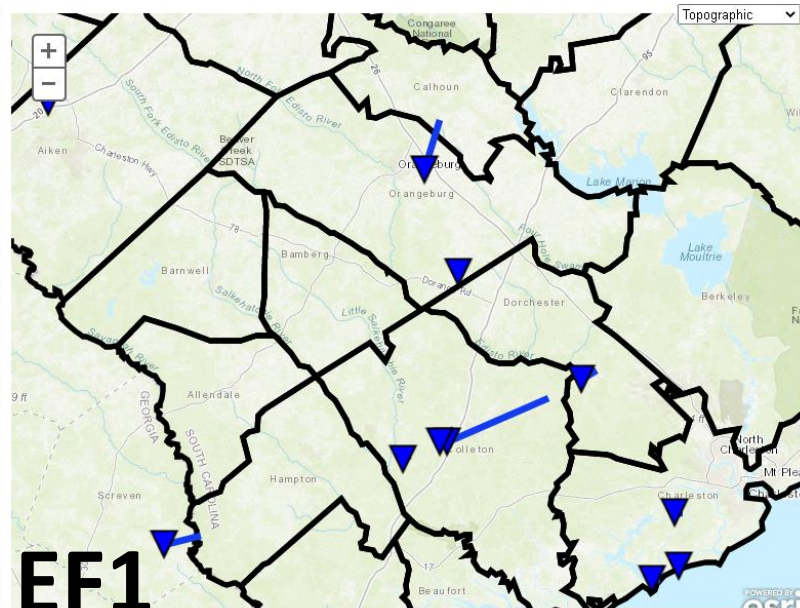
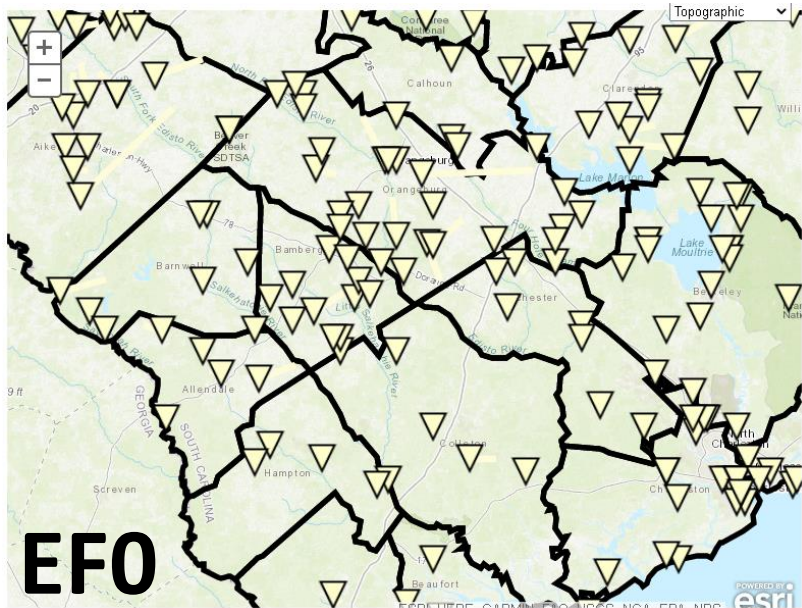
SOUTH CAROLINA TORNADOES 1950-2019



EF-2,3,4 TORNADOES 1950-2019



AVERAGES:
1950-2019: 2.5/year
1950-1993: 2.3/year
1994-2019: 3.0/year
2000-2019: 2.2/year



ORANGEBURG-SC

E/F0: 26

E/F1: 27

E/F2: 8

E/F3: 5

E/F4: 0

AFTERNOON: 25

EVENING: 14

OVERNIGHT: 6

MORNING: 21

STRONGEST: EF3 (2020-04-13*)

LONGEST PATH: 41.2 MI (1978-05-04*)

WIDEST PATH: 1320 YDS (2008-03-15*)

MOST ACTIVE YEAR: 1978,2019 (4)

LAST EVENT: 2020-04-13 (EF2)

LAST SIGNIFICANT EVENT: 2020-04-13 (EF2)

*TRACKED THROUGH MULTIPLE COUNTIES.

SC Hurricane Climatology: 1851-2019

<https://www.dnr.sc.gov/climate/sco/hurricanes/>

THE BREAKDOWN:

247 SYSTEMS HAVE IMPACTED SC
130 HAVE TRACKED INTO THE STATE
59 WERE CATEGORY 1 OR GREATER
41 MADE DIRECT LANDFALL ON COAST
4 MAJOR (CAT 3+) LANDFALLS

188 TROPICAL STORMS (OR LESS)

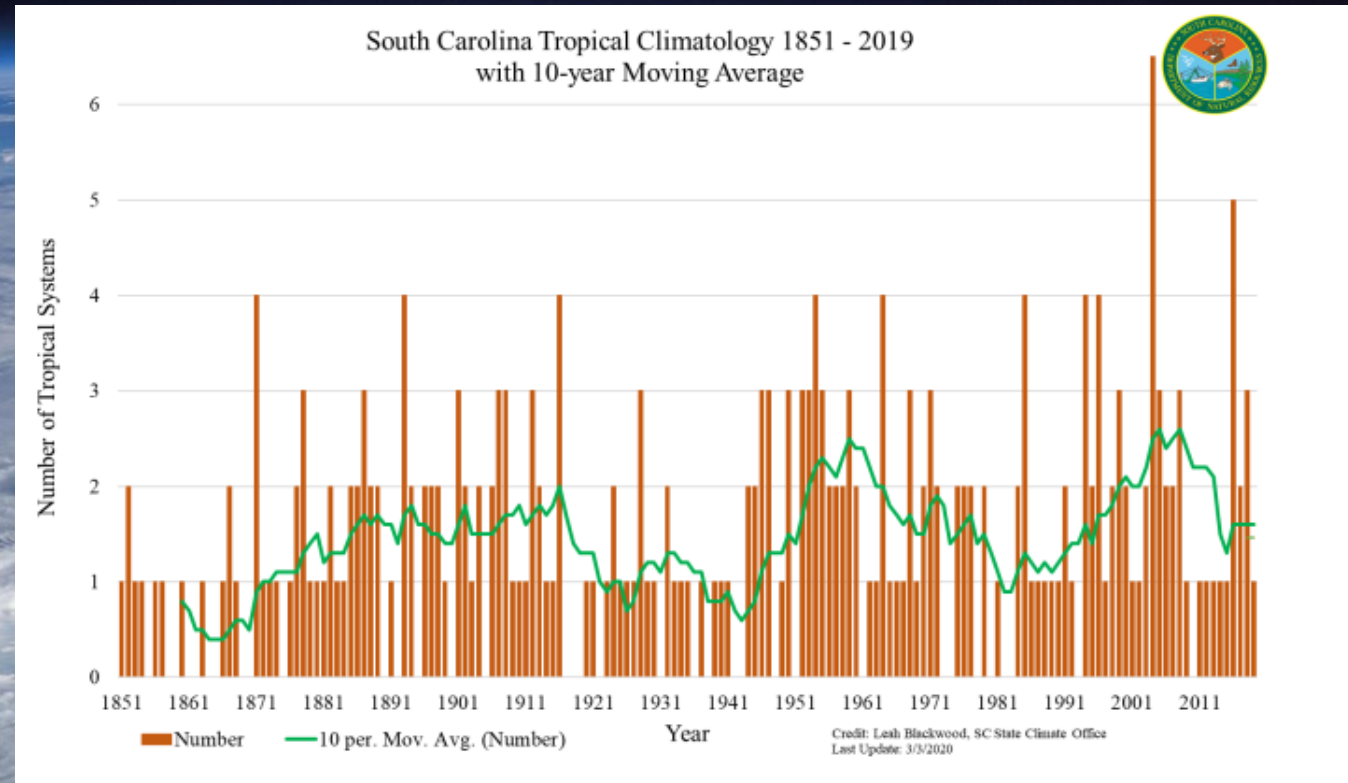
30 CAT. 1 HURRICANES

18 CAT. 2 HURRICANES

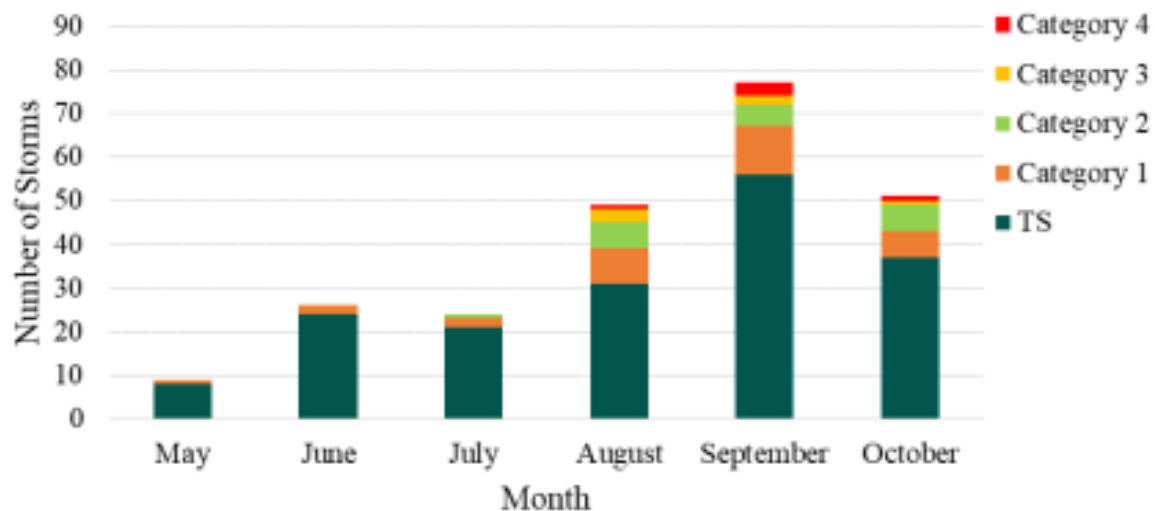
6 CAT. 3 HURRICANES

5 CAT. 4 HURRICANES

0 CAT. 5 HURRICANES



Category Breakdown of Storms by Month 1851 - 2019



SEASONAL RECORDS BY CATEGORY

EARLIEST

CATEGORY 4

August 26, 1958

CATEGORY 3

August 18, 1879

CATEGORY 2

July 14, 1916

CATEGORY 1

May 27, 1908

TROPICAL STORM

February 3, 1952

LANDFALL

May 7, 2015

LATEST

October 15, 1954

October 13, 1893

October 31, 1899

October 20, 1853
and 1906

December 2, 1925

October 31, 1899

79.7%

CHANCE OF BEING
IMPACTED BY A TROPICAL
SYSTEM EACH YEAR

47

TORNADOES CAUSED
BY THE PASSING
REMNANTS OF
HURRICANE FRANCES
IN 2004

23.68"

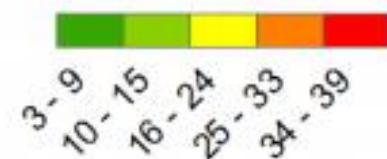
SC RAINFALL RECORD FROM
A TROPICAL CYCLONE -
HURRICANE FLORENCE 2018

South Carolina Tropical Cyclone Track Density by County



Legend

NUMBER



* This image is based on confirmed hurricane tracks from the NOAA Hurricane Re-Analysis Project. All track counts are based on data available.

During the period 1851 - 2018, 130 storms have tracked into the state of South Carolina. This map includes storms from extratropical through a categorized hurricanes that tracked into SC from any direction, not simply by making landfall on the coastline.

Created By: Leah Moore
SC State Climatology Office
Last Update: 8/26/2019

THE SOUTH'S 20 SEASONS

HUNTING
WINTER
POLLEN
WINTER
TORNADO
SO MUCH POLLEN
ONE MORE WINTER
TORNADO
ATTACK OF THE MOSQUITOS
SUMMER
MORE SUMMER
EVEN MORE SUMMER
PLEASE, LORD! MAKE THIS SUMMER END!
FOOTBALL
TORNADO
FALL
JUST KIDDING, HERE'S SOME MORE SUMMER
WINTER
CHRISTMAS
MAYBE ONE MORE SUMMER

IT'S A
Southern
THING

Thank you

Hope Mizzell, Ph.D.

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