

CoCoRaHS Condition Monitoring



Presentation to SC CoCoRaHS Observers
November 7, 2013





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Today's Presentation

- Introductions
- Weather and Climate in South Carolina
- CISA
- Project Background
- Weekly Condition Monitoring
- Q & A

South Carolina State Climatology Office



Hope Mizzell, Ph.D.

<http://www.dnr.sc.gov/climate/sco>

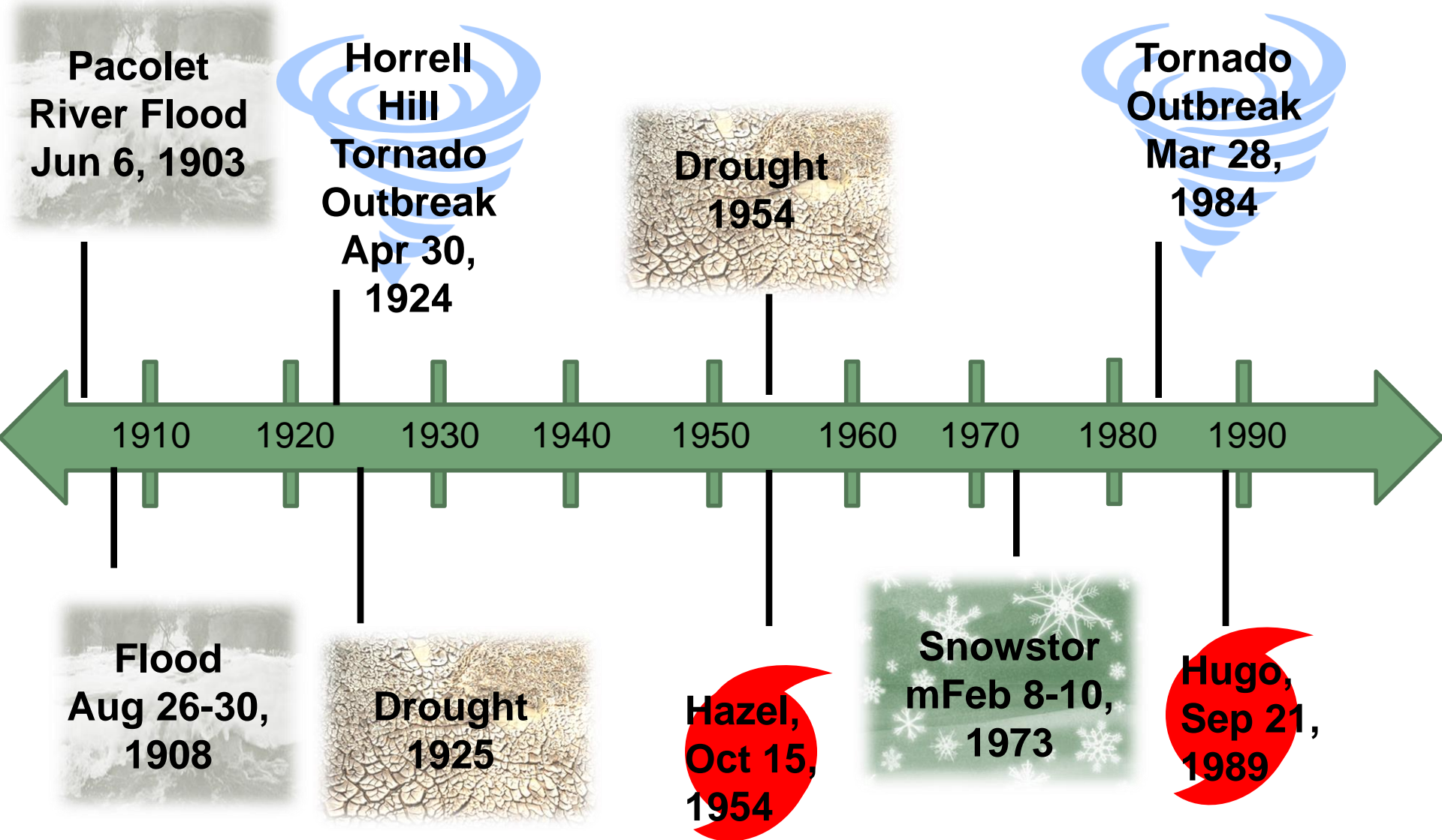


Relationship between weather & climate

Literature Review: Stallone et al. (1976)



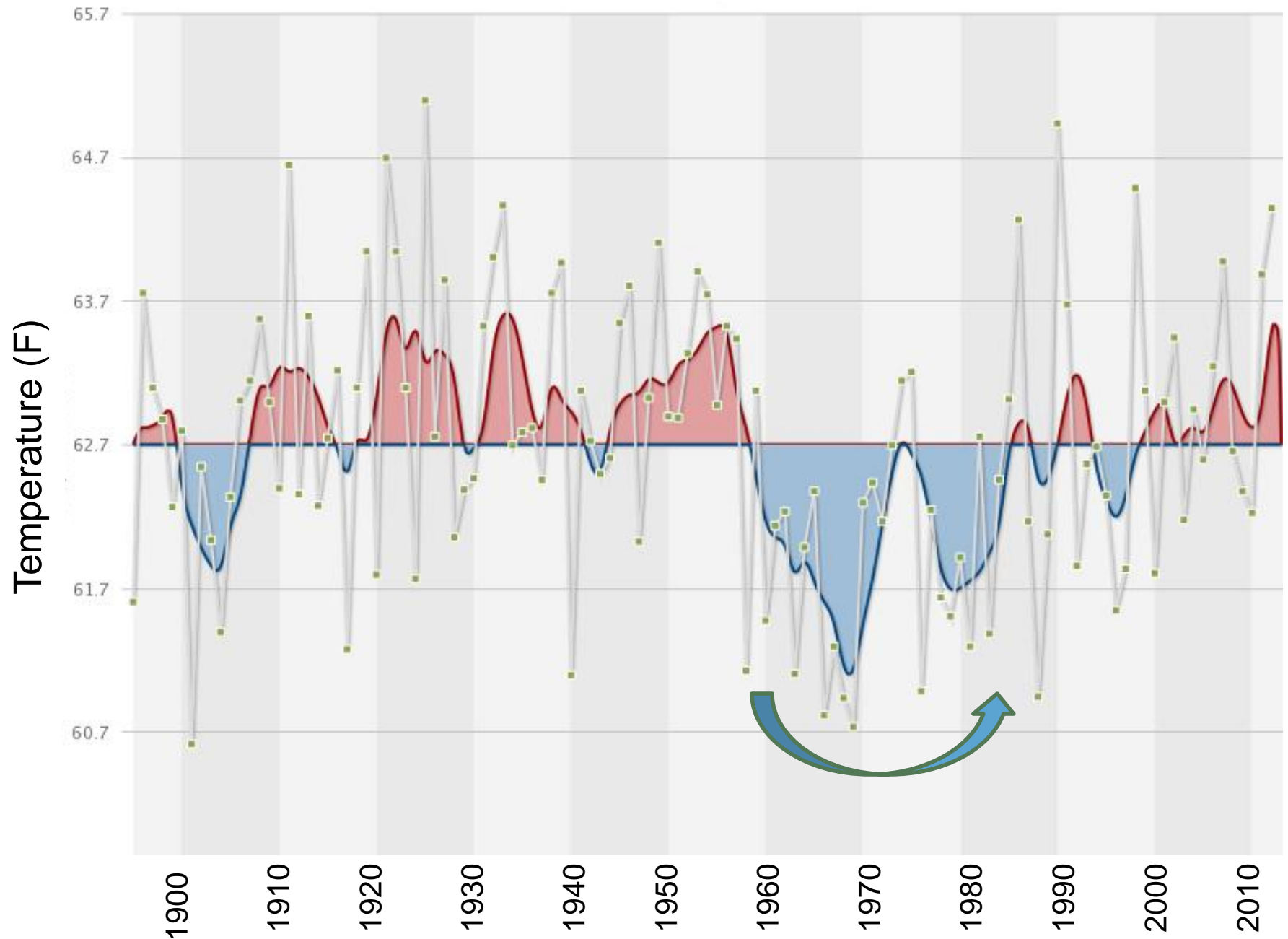
South Carolina Storms of the Century: 1900 - 2000



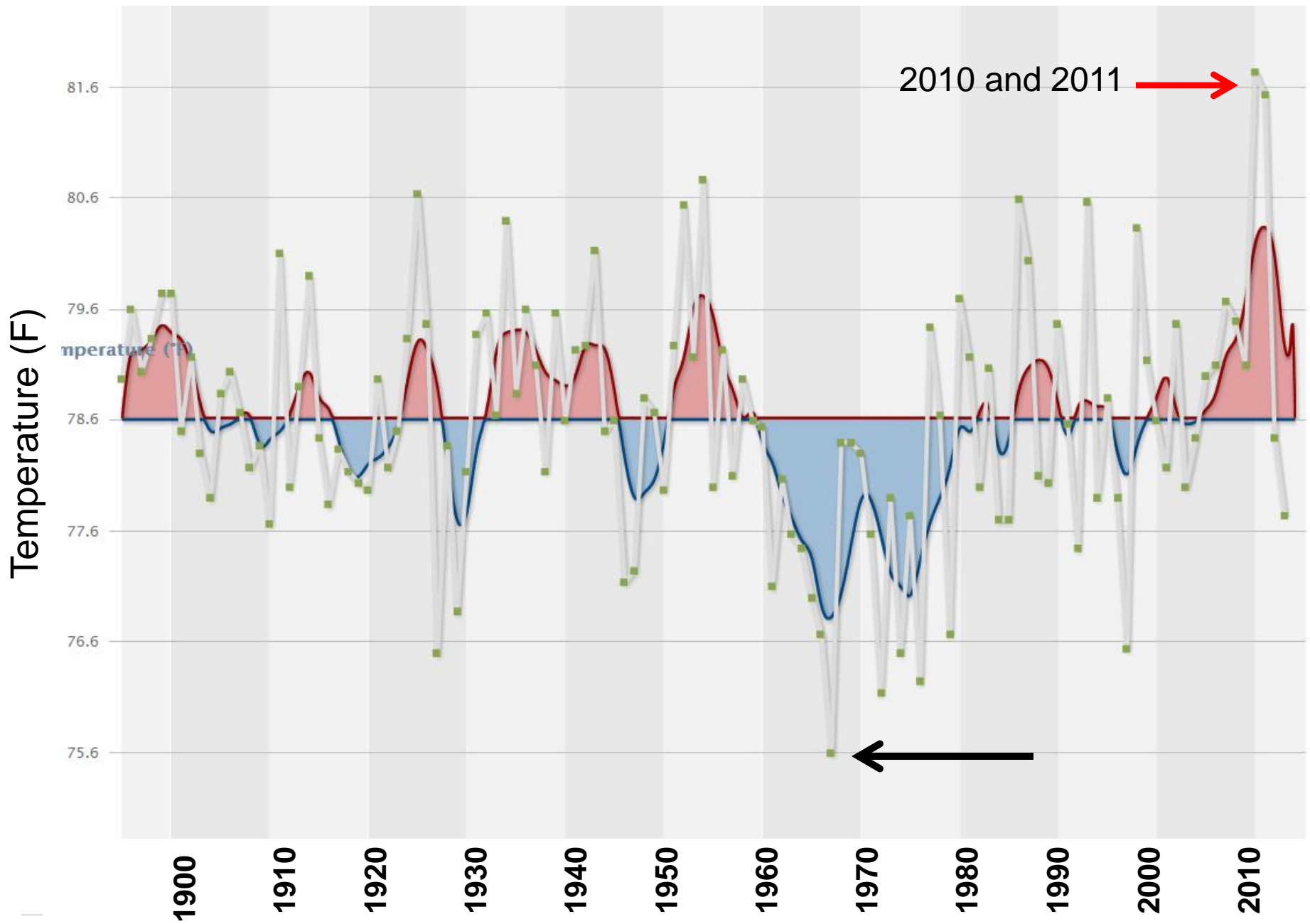
Monitoring for Variability and Change



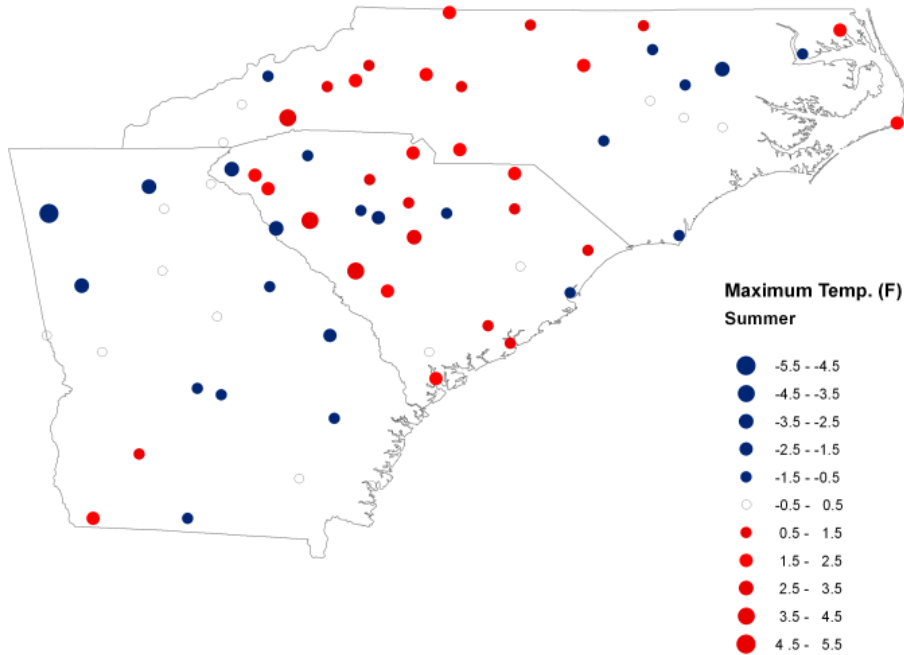
SC Annual Temperature Trend: 1895-2012



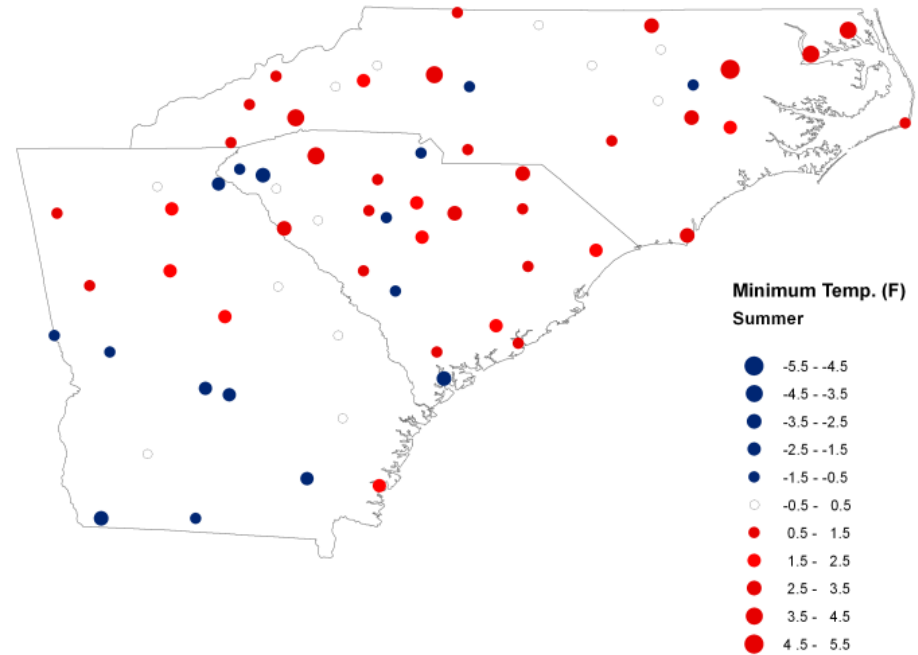
SC Summer Temperature Trend: 1895-2013



Summer Maximum Temperature 1901-2010

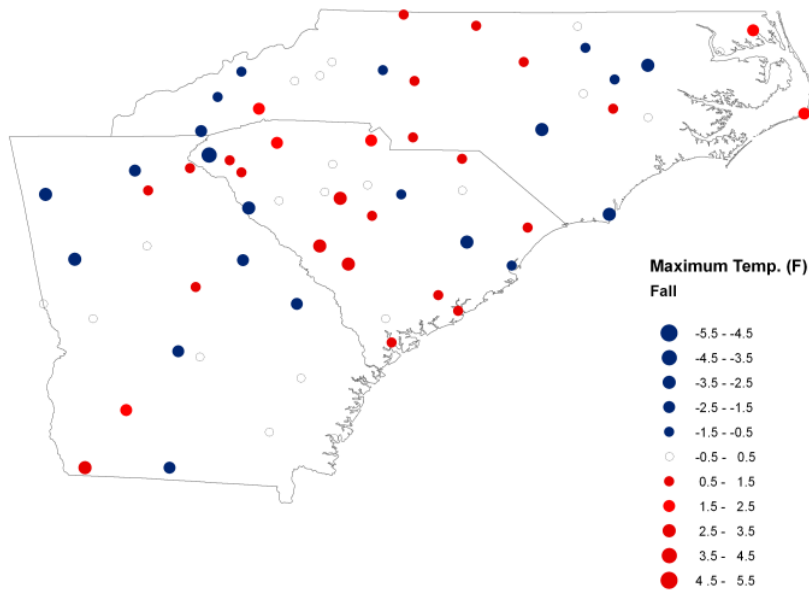


Summer Minimum Temperature 1901-2010

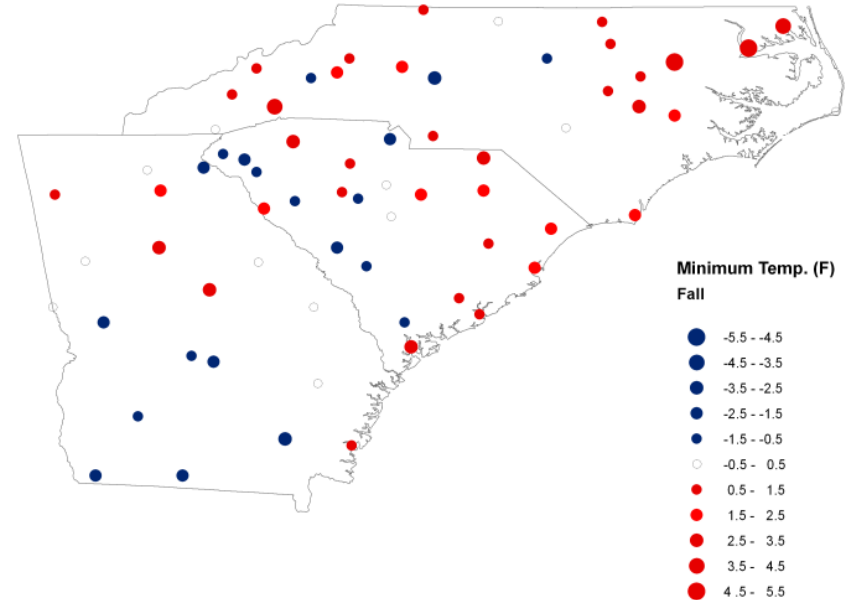


*NOAA's US Historical Climate Network

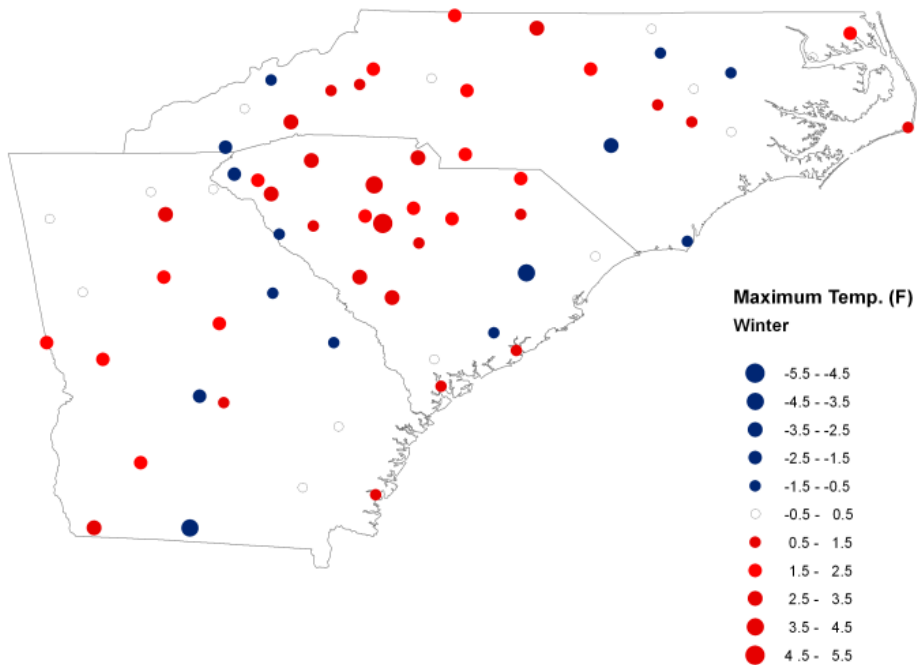
Fall Maximum Temperature 1901-2010



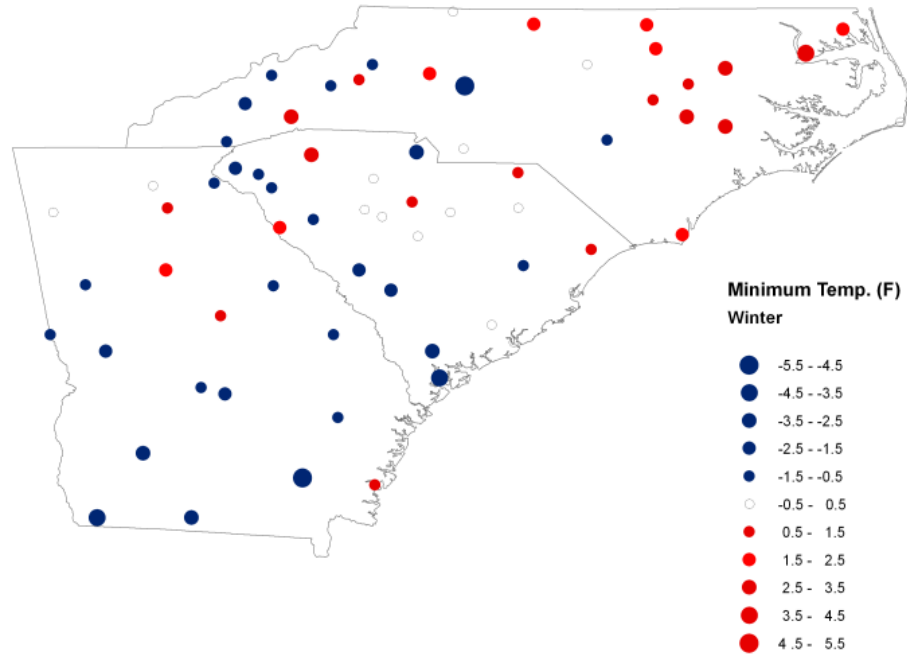
Fall Minimum Temperature 1901-2010



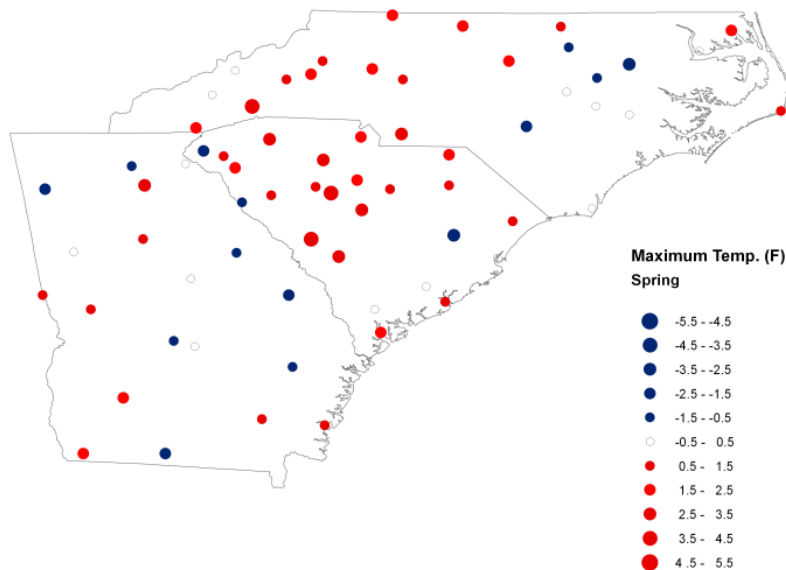
Winter Maximum Temperature



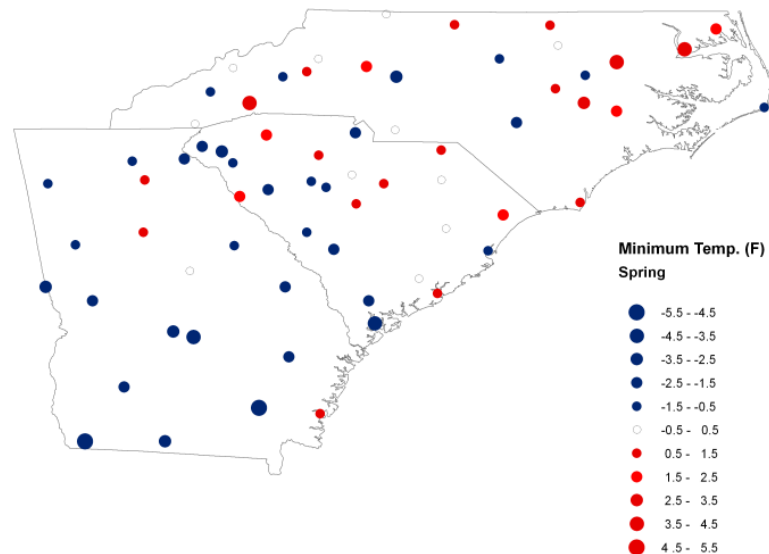
Winter Minimum Temperature



Spring Maximum Temperature



Spring Minimum Temperature



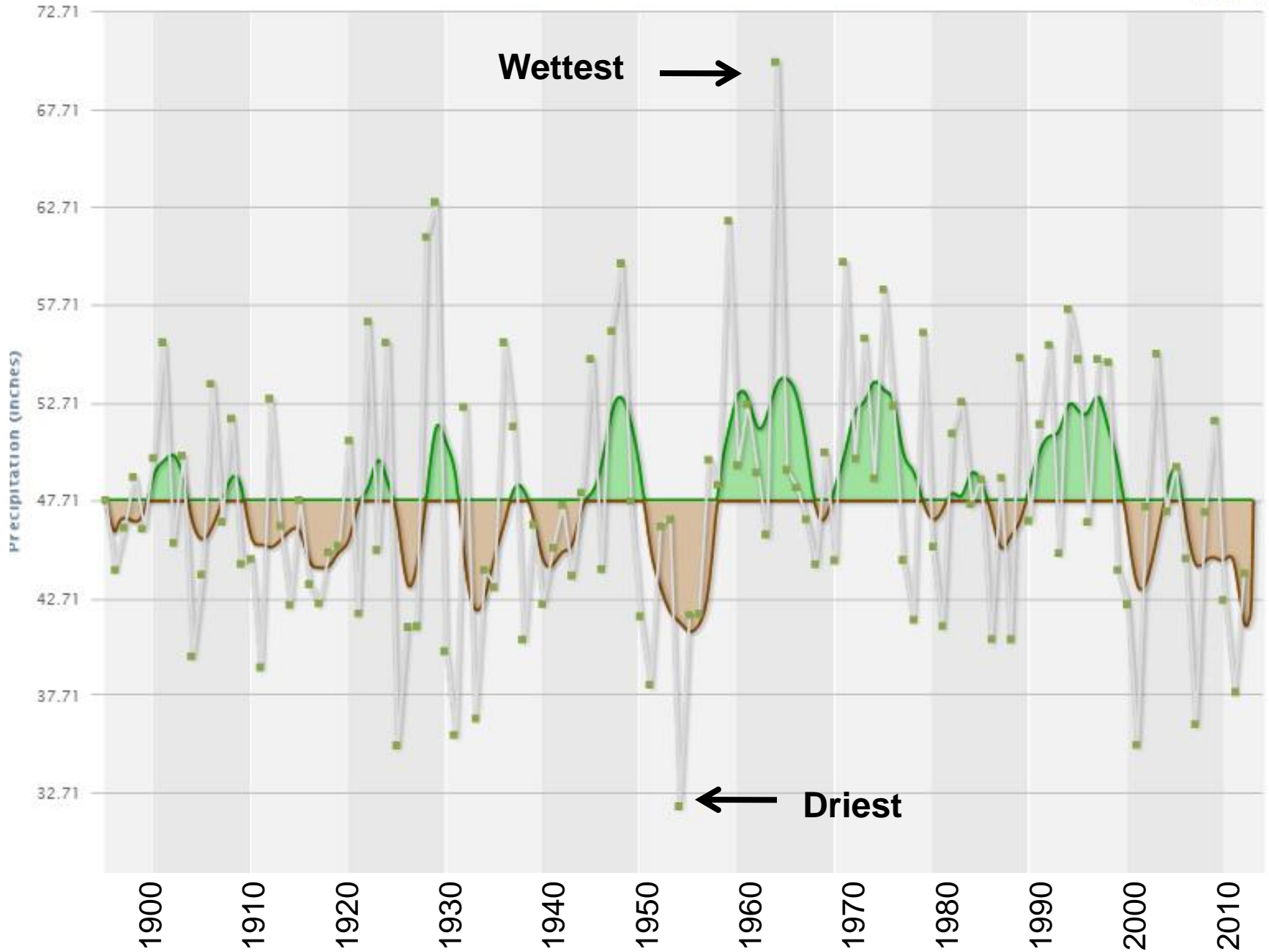
Is it Wetter or Drier?



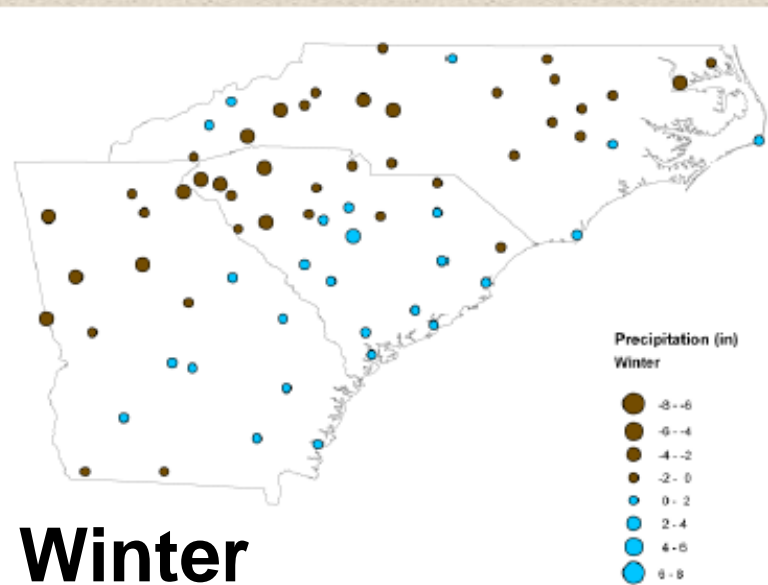
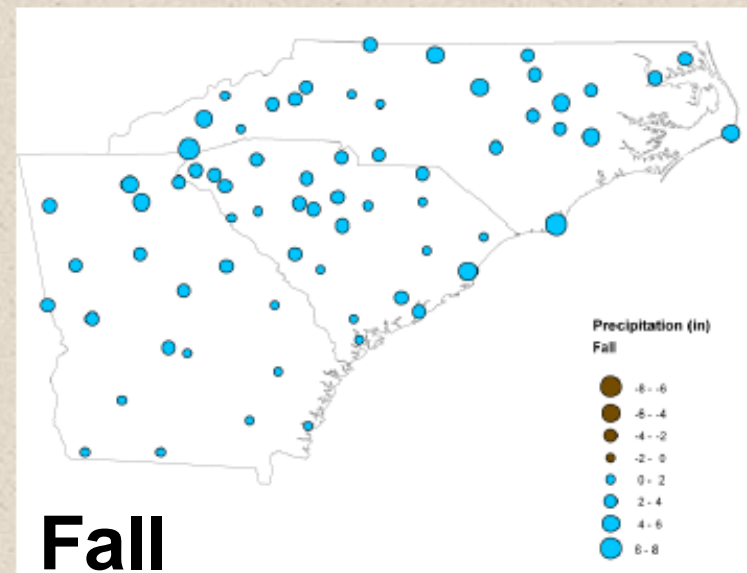
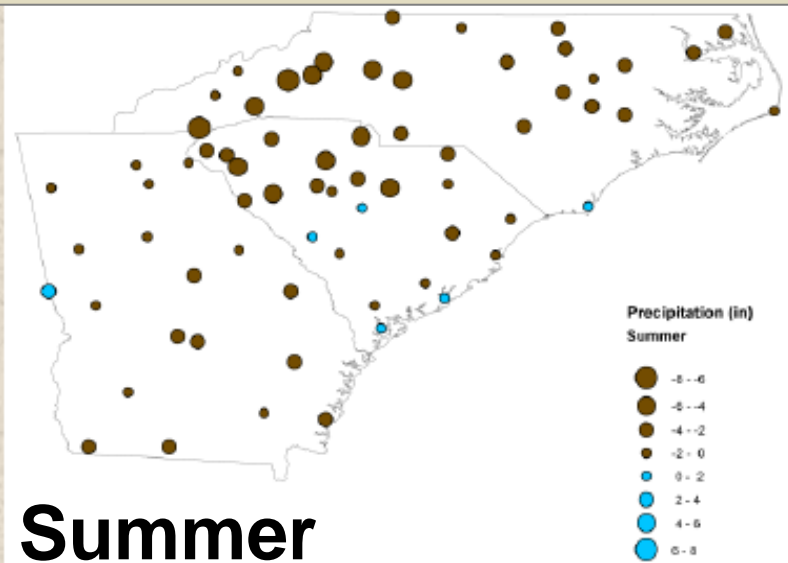
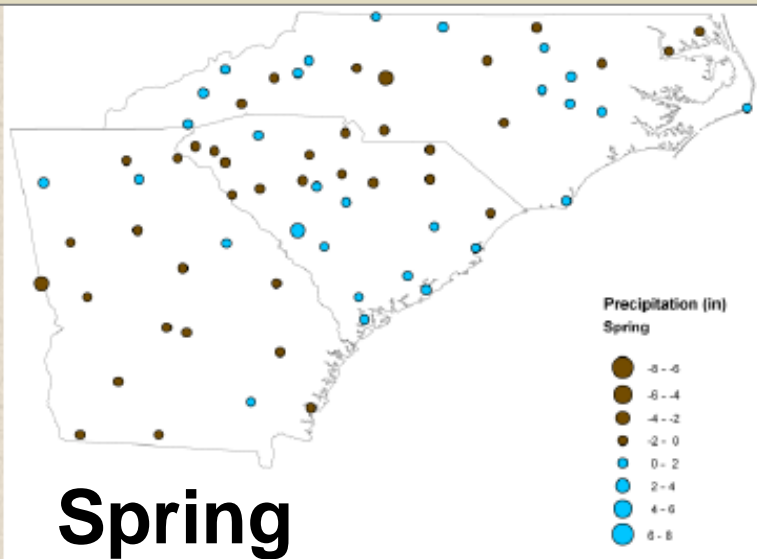
Climate Trends, SC, Annual



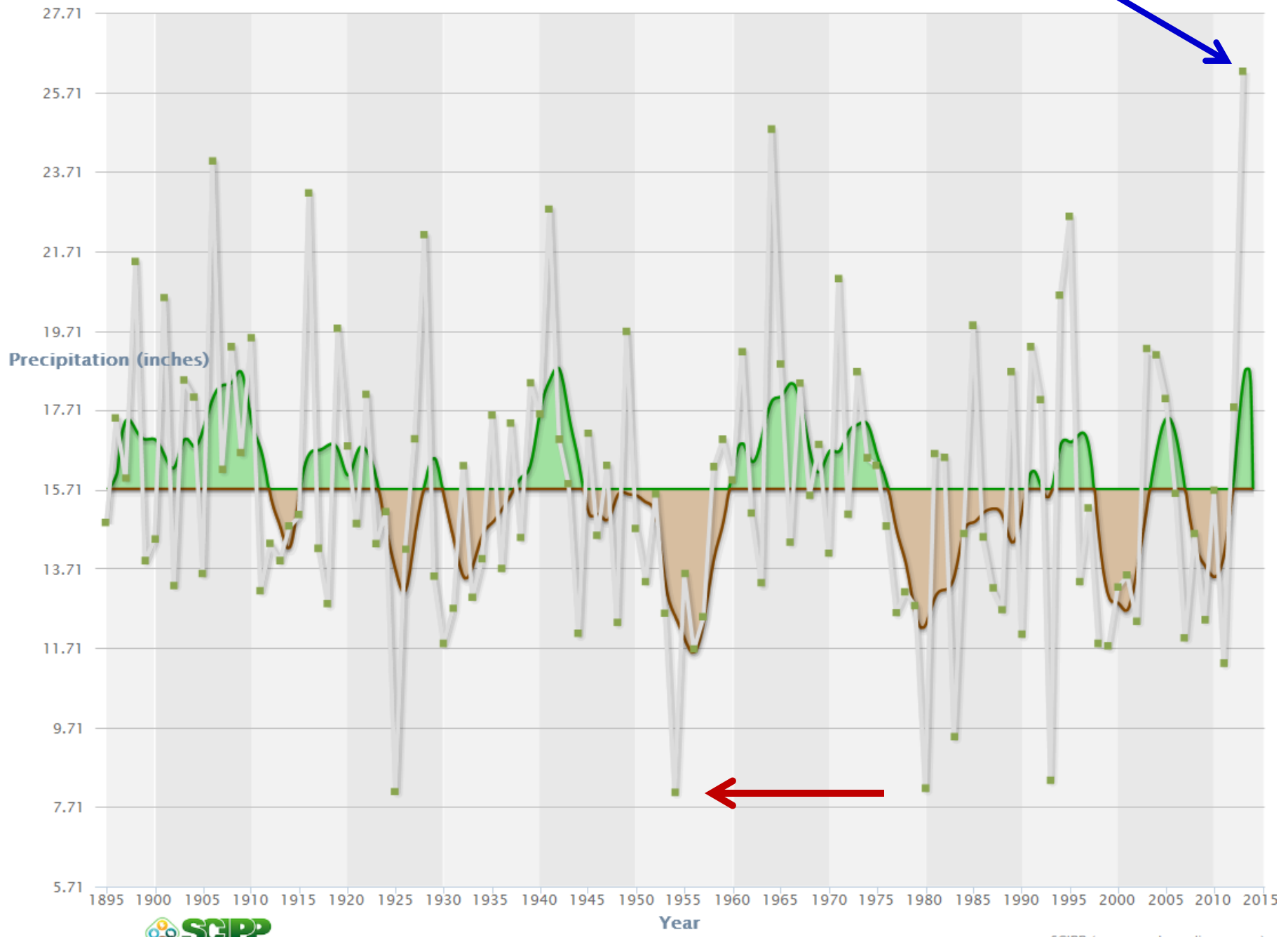
Precipitation (inches)



Precipitation Trends, 1901-2010

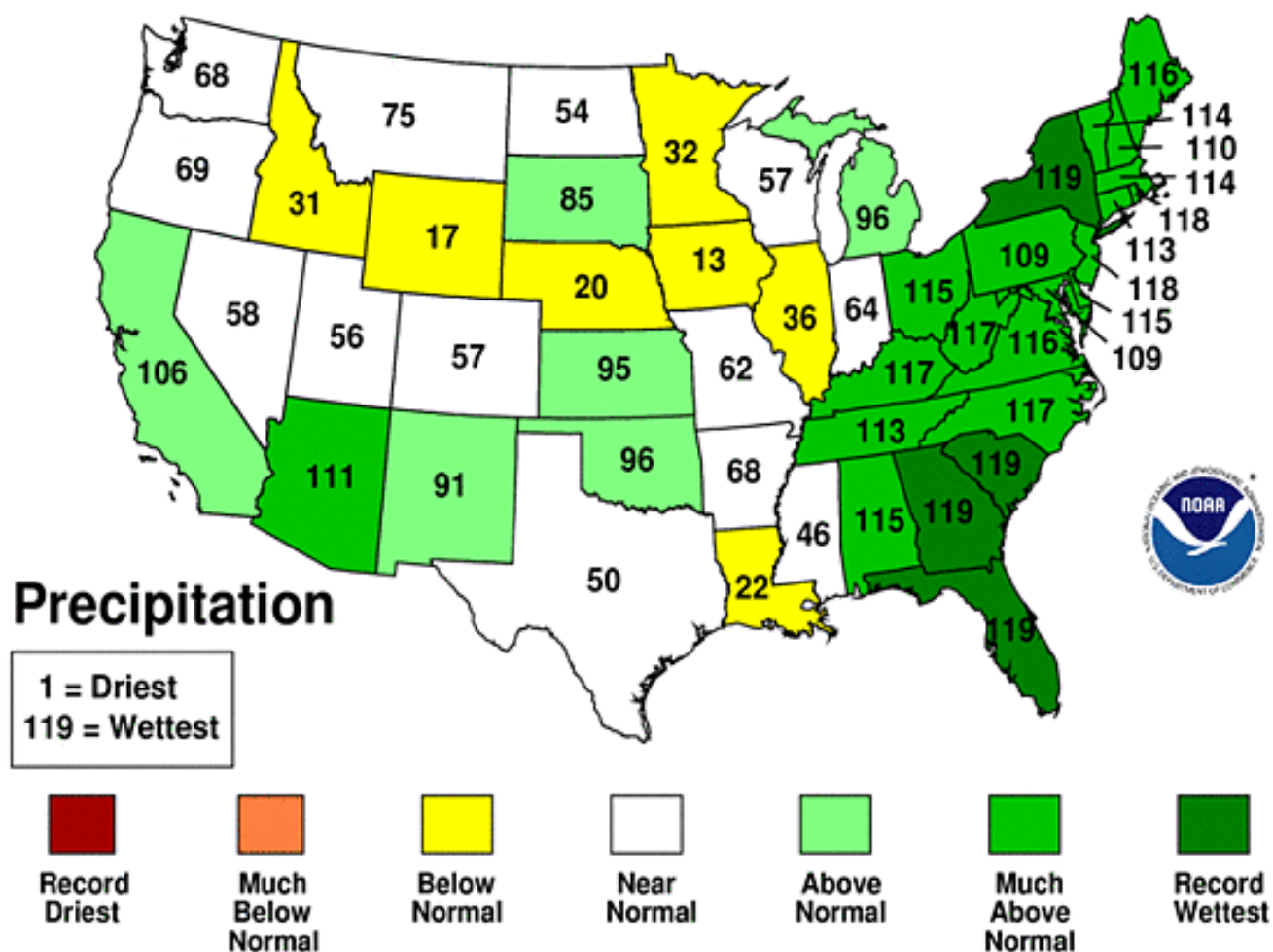


SC Summer Precipitation Trend: 1895-2013



June-August 2013 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



Only second time since completion in 1962 Hartwell Dam
Operations opened all 12 spillway gates on July 9, 2013

2013

Photo Credit: Doug Young

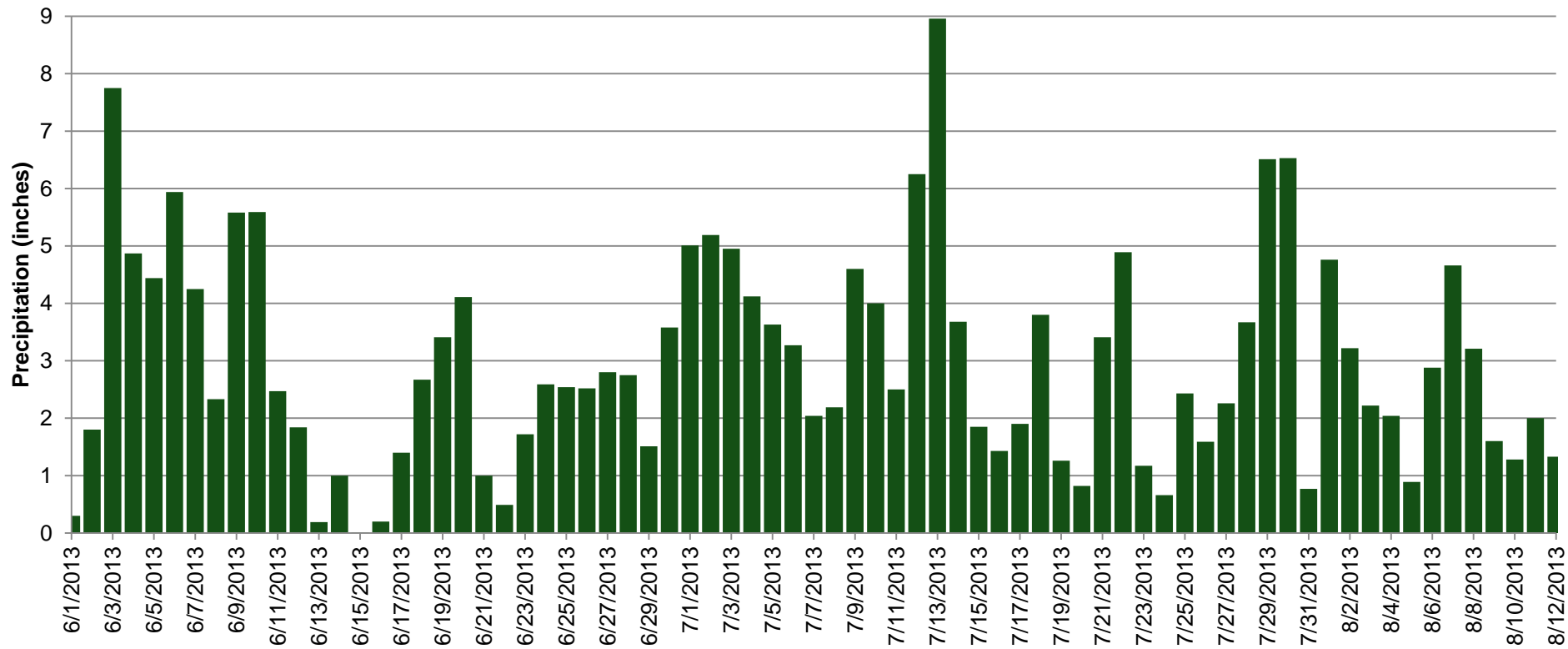


How SCO uses CoCoRaHS

Extreme heavy rainfall. First round late afternoon. Second round began in the middle of the night with a Flash Flood warning waking me up at 4AM. Frequent cloud-to-ground lightning and strong wind. Power fluctuations with lightning. My automatic tipping rain bucket reported at 5:40AM a 1-hour rainfall amount of 3.67". Diminished to light rain at 6:30AM.

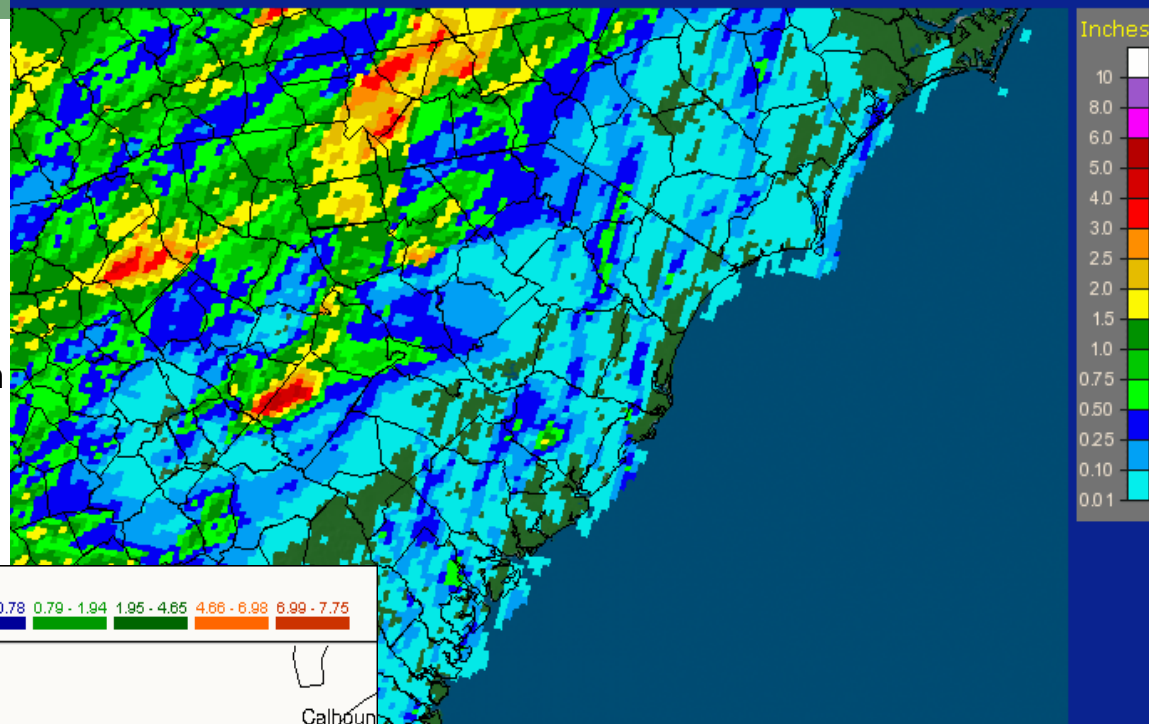
*****EDIT**** I'm changing the flooding statement from Unusual to Extreme based on observations in daylight. Creek backing onto our property, as well as Nettles Park on the other side of the creek, has burst its banks and flooded playing fields up to the score board level! Lifetime locals claim they've never seen this in their 40-50 years.*

South Carolina's Highest Daily Precipitation Totals (CoCoRaHS)



June 3 - Within Aiken County you can see daily rain values ranging from only 0.16 to 6.82". On the border of Aiken and Edgefield there is a daily report for 7.75".

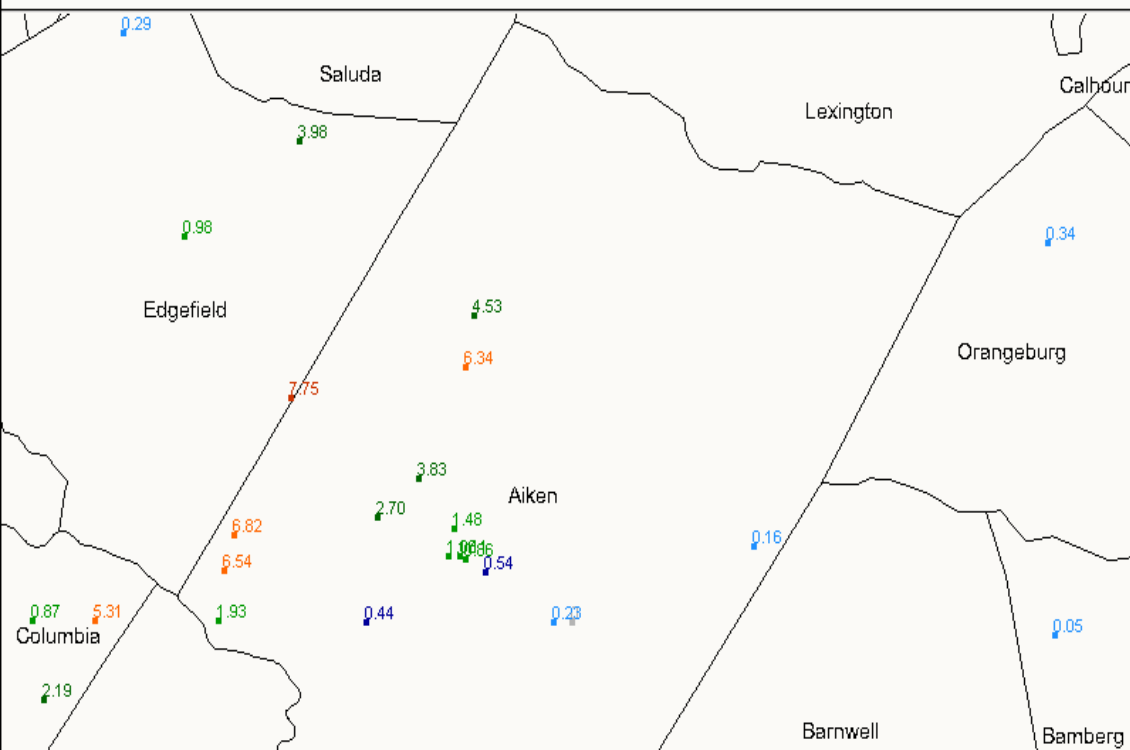
Without CoCoRaHS we would not have been able to accurately document the extreme range in precipitation for this event.



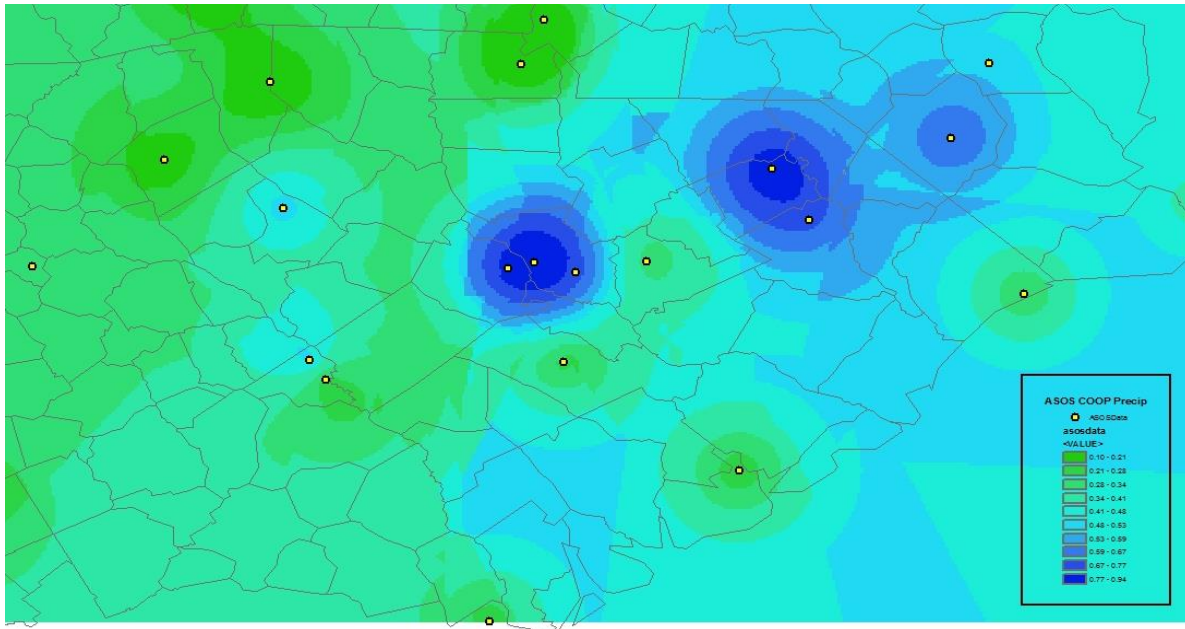
Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Aiken County, South Carolina 6/3/2013

0.0 Trace 0.01 - 0.39 0.40 - 0.78 0.79 - 1.94 1.95 - 4.65 4.66 - 6.98 6.99 - 7.75

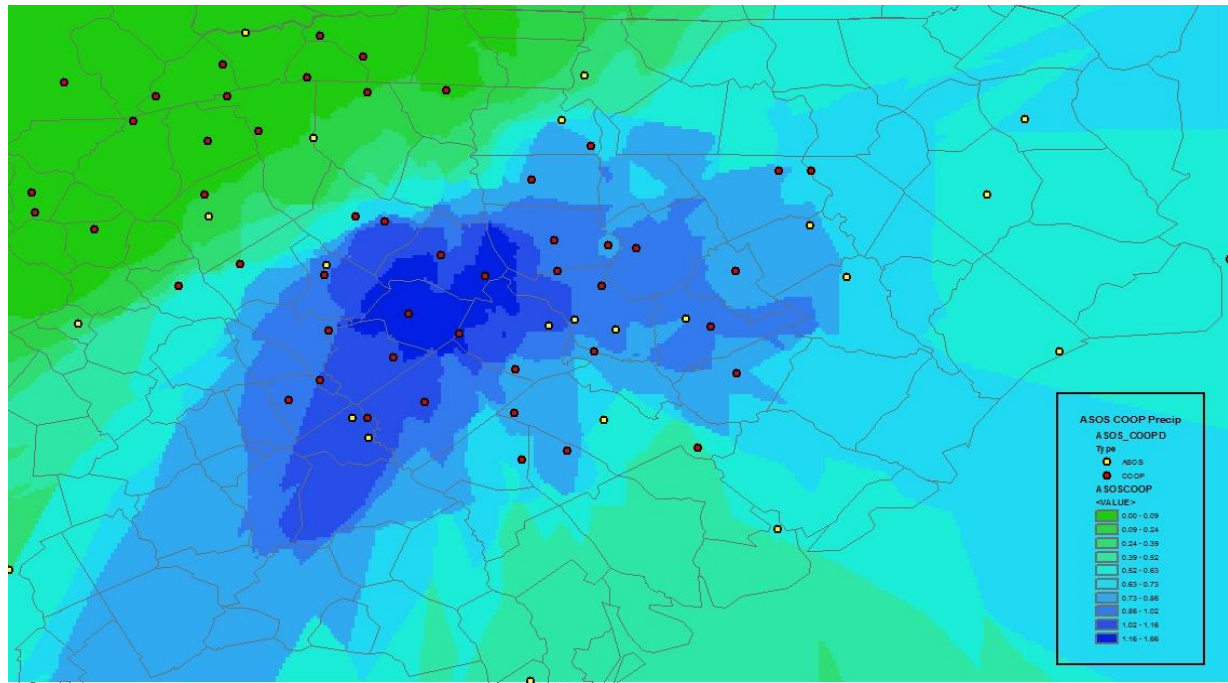


EVENT ANALYSIS: 2/24/12

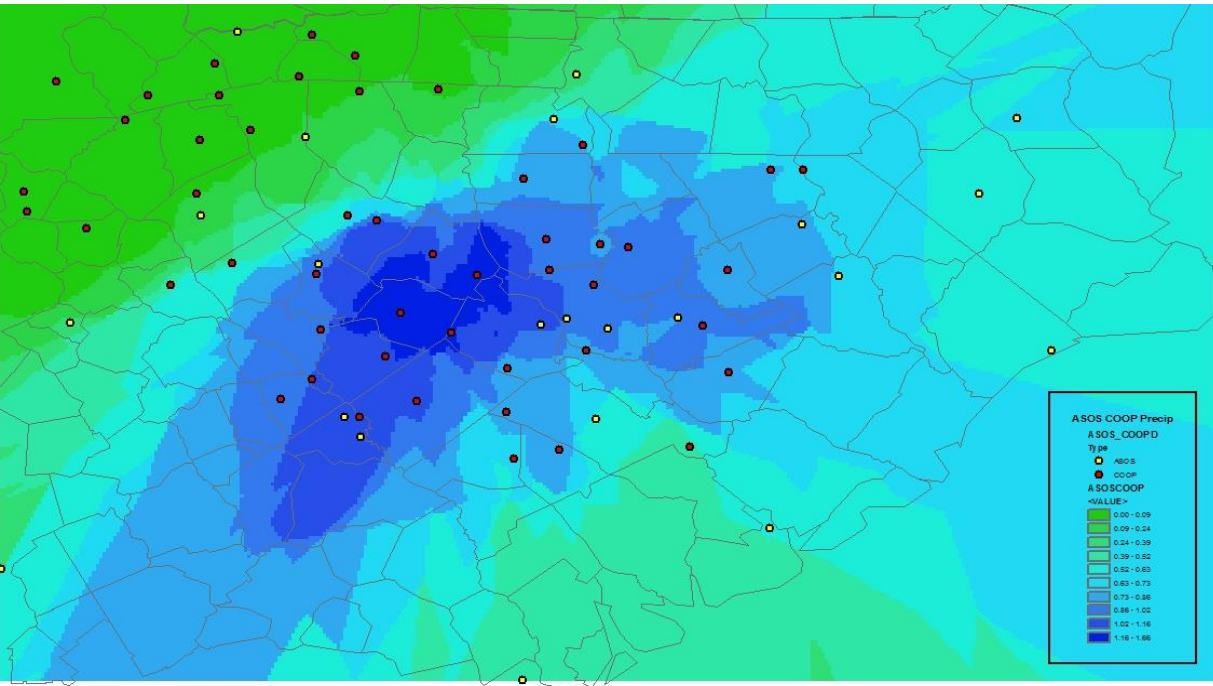


ASOS ONLY

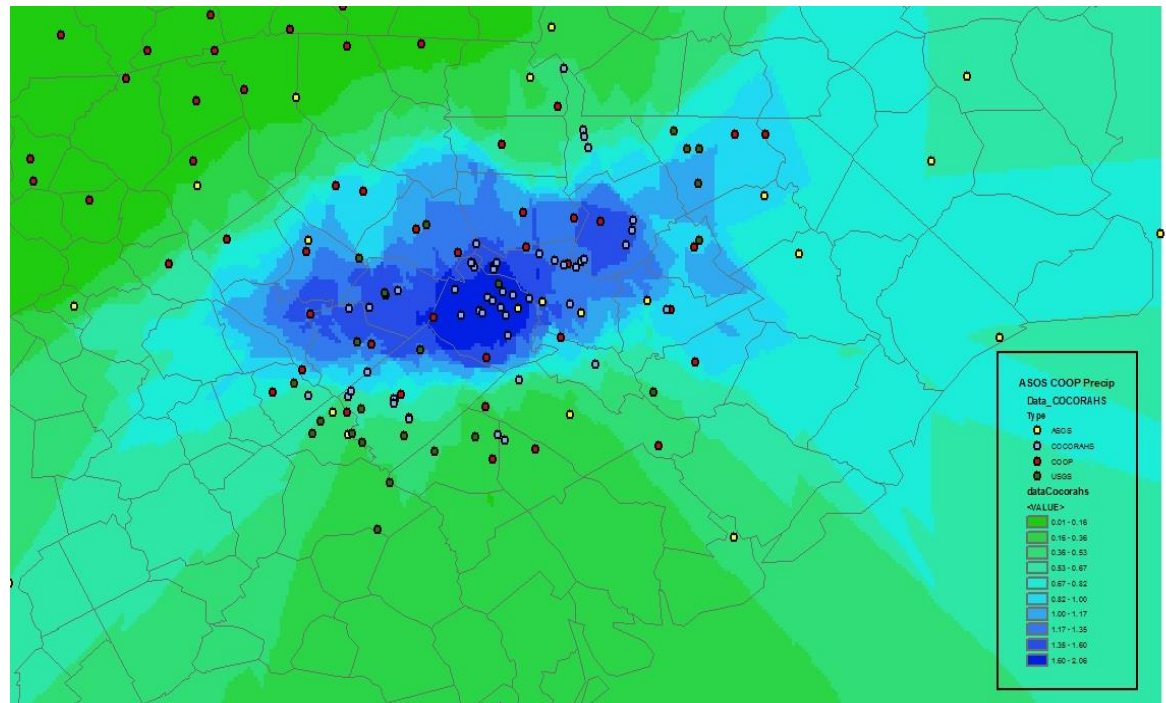
ASOS + COOP



ASOS+ COOP



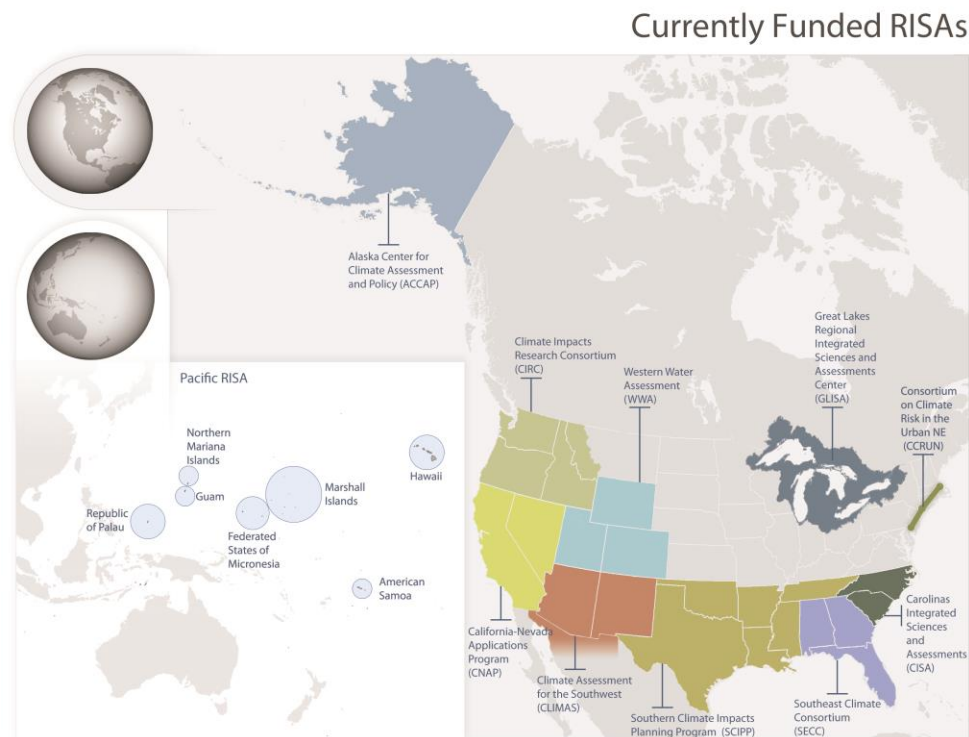
ASOS+USGS+
COOP+COCORAHs



Carolinas Integrated Sciences & Assessments

- CISA is 1 of 11 NOAA-funded Regional Integrated Sciences & Assessments (RISA) programs

CISA works to be a regional resource for a variety of stakeholders to incorporate climate information into water and coastal management, public health, and related decision making processes.



The Project!

- Improve understanding of drought impacts and connect with decision makers
- **Citizen science**
 - drought impact reporting using CoCoRaHS, the Community Collaborative Rain, Hail & Snow Network



National Partners

- National Integrated Drought Information System
- National Drought Mitigation Center



Boulder, Colorado



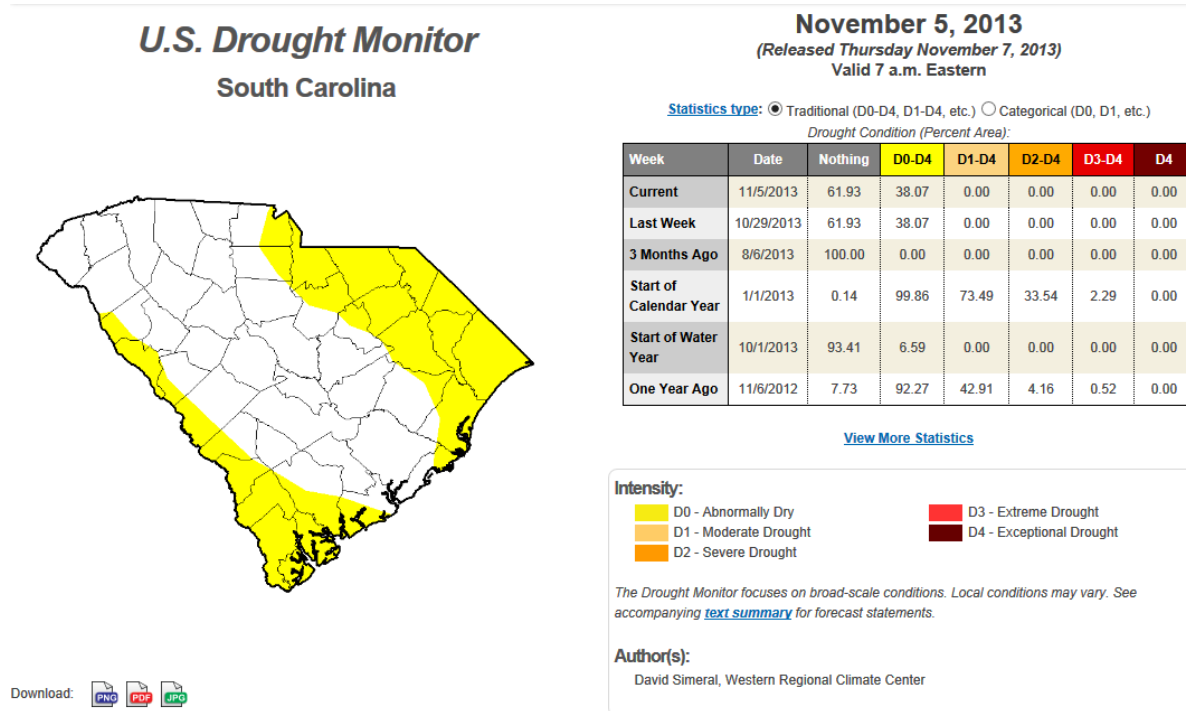
Lincoln, Nebraska

Drought Impacts in South Carolina



BUT....We aren't in a drought!

- We had A LOT of precipitation this summer and as of August all counties in South Carolina were clear of any drought status for the first time since 2003.
- Precipitation has decreased in the last 2 months and early signs of dry conditions are beginning to show.



Weekly Condition Monitoring


Connecting weather and climate with the environment

- To better understand the impacts of drought on plants, animals and people, it is very helpful to monitor conditions regularly, whether the weather is wet OR dry.
- Your knowledge about the local environment and how weather influences it can reveal much more than can be learned from recording daily rainfall alone.

Weekly Condition Monitoring

Connecting weather and climate with the environment

- CoCoRaHS offers a 'condition monitoring' checkbox on the Drought Impact Report form so that you may enter information at regular intervals to share how things look in your area.

 Condition Monitoring
<input type="checkbox"/> Condition Monitoring Report
<p>A Condition Monitoring Report allows a regular observer to describe normal conditions that are likely to change during drought, to create a basis for comparison. Please check Condition Monitoring Report if that's what you are submitting. If you aren't sure, please leave it unchecked. More information on categories of drought impacts and reports.</p>

Weekly Condition Monitoring

Connecting weather and climate with the environment

- This type of regular monitoring can help to better identify drought impacts at the onset, rather than once they have become more severe.
- It can also help determine when the impacts of drought begin to subside and conditions begin to recover.

Ideas for Weekly Condition Monitoring

Items	Questions to Consider
Plants	Are plants lush and green, or are they droopy and dying? Have you noticed faster or slower plant growth?
Animals	Do you see animals visiting water sources more regularly, like birds at the birdbath? If you are a fisherman, have you seen any differences in the type and amount of fish you catch? Are the crabs or shrimp further upstream?
People	Are businesses affected by the weather at all, such as landscaping companies, garden centers, roadside markets, or seafood markets? Are people having to stay inside more because of hotter and/or drier days? Are there any seafood consumption restrictions?
Water Quality	Is the water in lakes, ponds, or waterways cloudy or murky? Do you see an increase in the amount of plants growing in ponds? Have you noticed any differences in the taste or color of your drinking water?
Water Supply	Are water levels in rivers, streams or tidal creeks lower or higher than normal? If there are any lakes or ponds in your community, are the water levels lower or higher than normal? Have any water bodies flooded recently? Are there any water restrictions in place, such as whether or not you can water your lawn or wash your car?
Soil Conditions	Is the soil moist or is it dry and cracking? How does the soil look or feel in your lawn, garden or community?

Weekly Condition Monitoring

Tell Us What You Know

- Everyone is an bit of an expert in one way or another. You might be a business owner, gardener, fisherman, or birder.
- Use your local expertise to share information about those things which are of most interest to you.



Sample Condition Monitoring Report

- October 9, 2013

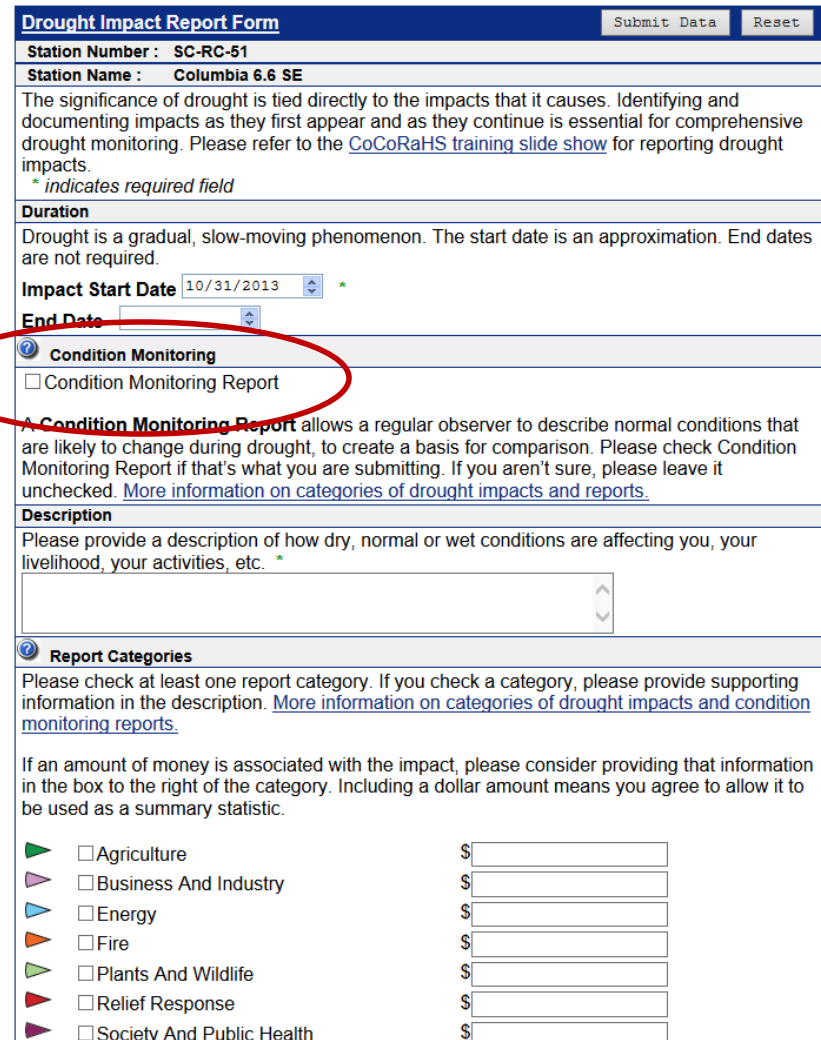
- Soil in our garden is very dry. It has been awhile since we have had a drenching rain. After a wet summer during which our irrigation system was off, we have had to turn the system back on to keep plantings in our yard healthy.

- October 14, 2013

- Have had to continue using the irrigation system the past 2.5 weeks due to little to no rainfall. Haven't had to mow in 3 weeks. Continue to water the potted plants more often, especially since it's been quite breezy and they've dried out faster. The squirrels seem to be more active than usual this time of year; eating more hickory nuts rather than just storing them.

How to Enter Your Weekly Condition Monitoring Report

1. Log into 'My Data' on the CoCoRaHS website
2. Select 'Drought Impact Report' from the 'Enter My New Reports' panel
3. Enter the date you are submitting your report. You do not need to enter an end date.
4. Be sure to select the 'condition monitoring' → checkbox
5. Enter a detailed description of current conditions in your area.
6. Select the categories that correspond to any specific conditions you are monitoring. You do not need to enter a dollar amount.
7. Click the 'Submit Report' button



Drought Impact Report Form Submit Data Reset

Station Number : SC-RC-51
Station Name : Columbia 6.6 SE

The significance of drought is tied directly to the impacts that it causes. Identifying and documenting impacts as they first appear and as they continue is essential for comprehensive drought monitoring. Please refer to the [CoCoRaHS training slide show](#) for reporting drought impacts.
** indicates required field*

Duration
Drought is a gradual, slow-moving phenomenon. The start date is an approximation. End dates are not required.

Impact Start Date 10/31/2013 *
End Date








Condition Monitoring
☒ Condition Monitoring Report

A **Condition Monitoring Report** allows a regular observer to describe normal conditions that are likely to change during drought, to create a basis for comparison. Please check Condition Monitoring Report if that's what you are submitting. If you aren't sure, please leave it unchecked. [More information on categories of drought impacts and reports.](#)

Description
Please provide a description of how dry, normal or wet conditions are affecting you, your livelihood, your activities, etc. *

Report Categories
Please check at least one report category. If you check a category, please provide supporting information in the description. [More information on categories of drought impacts and condition monitoring reports.](#)

If an amount of money is associated with the impact, please consider providing that information in the box to the right of the category. Including a dollar amount means you agree to allow it to be used as a summary statistic.

	<input type="checkbox"/> Agriculture	\$	
	<input type="checkbox"/> Business And Industry	\$	
	<input type="checkbox"/> Energy	\$	
	<input type="checkbox"/> Fire	\$	
	<input type="checkbox"/> Plants And Wildlife	\$	
	<input type="checkbox"/> Relief Response	\$	
	<input type="checkbox"/> Society And Public Health	\$	



Thank You!

Questions or Comments?

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