Review of the 2024 Growing Season and the Outlook for 2025

Pam Knox

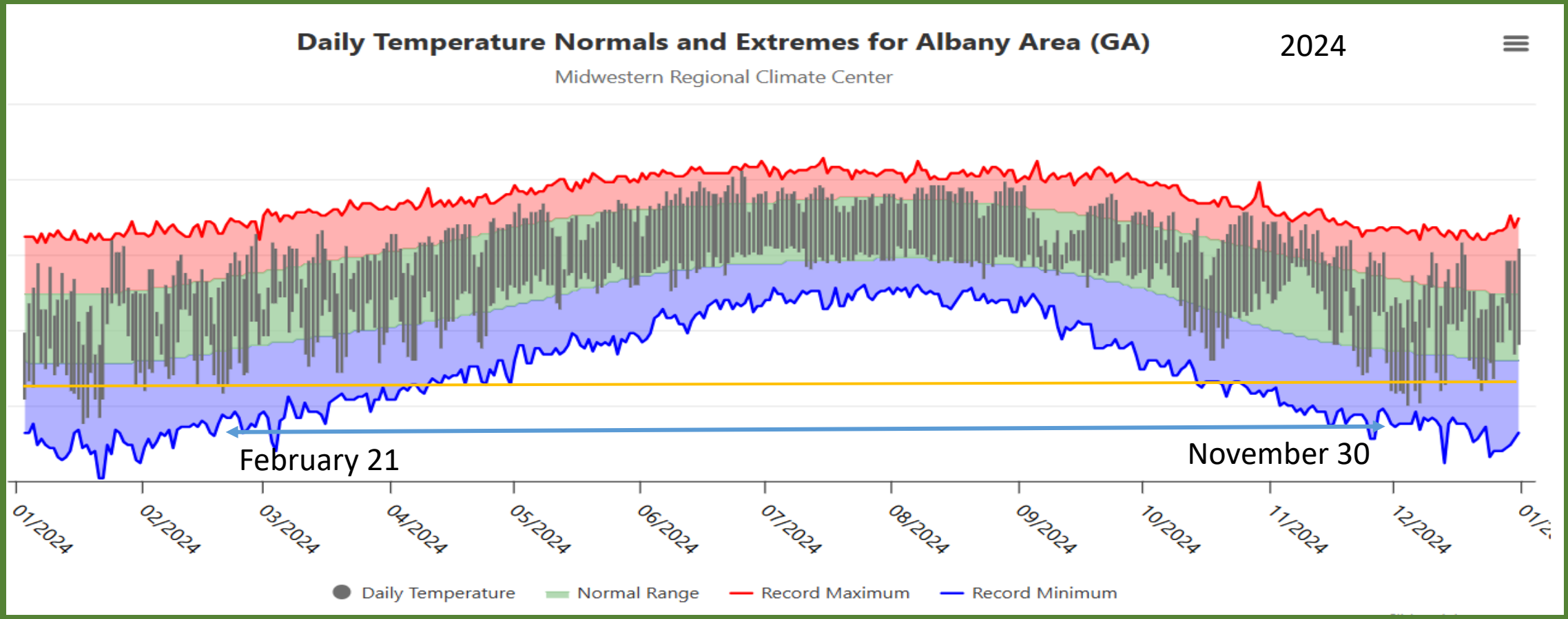
Director, UGA Weather Network and Agricultural Climatologist

pknox@uga.edu

https://site.extension.uga.edu/climate/

http://weather.uga.edu/

What is the growing season?

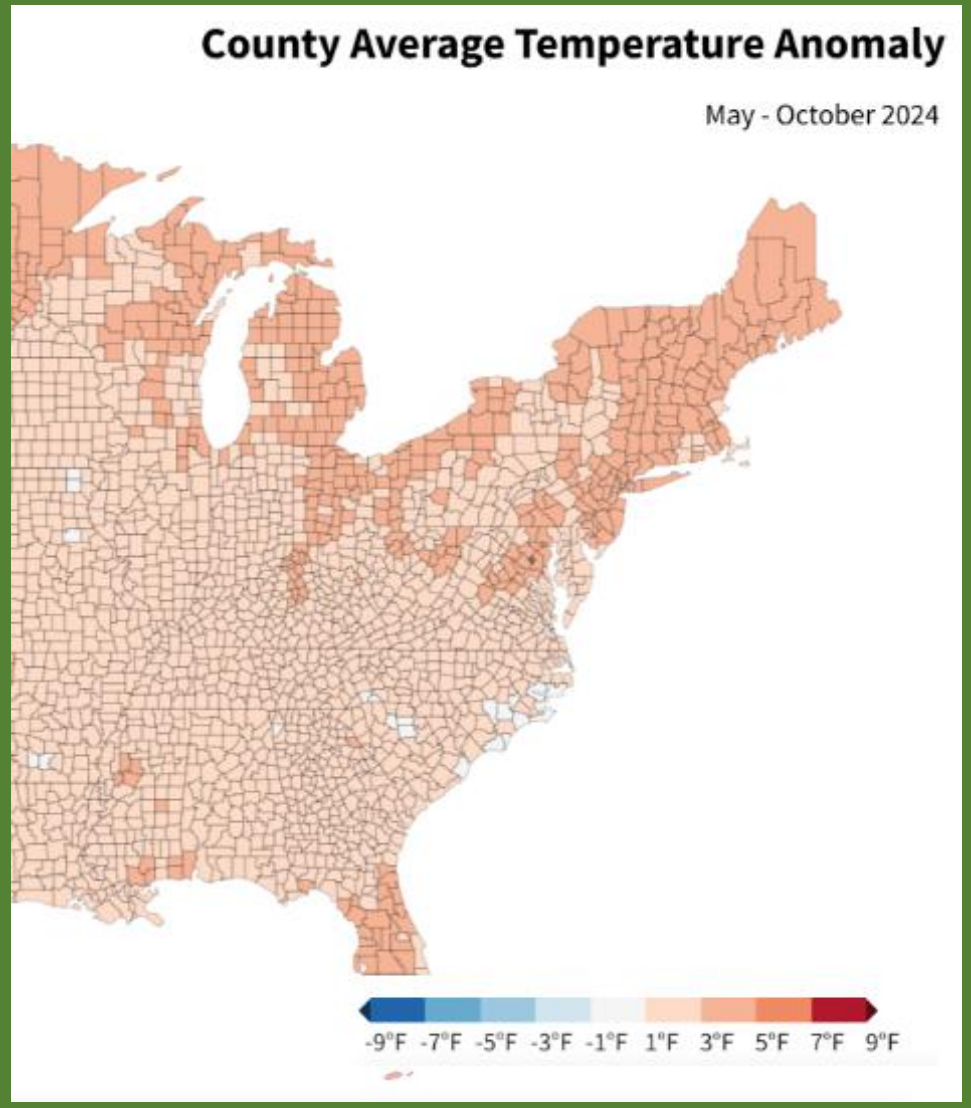


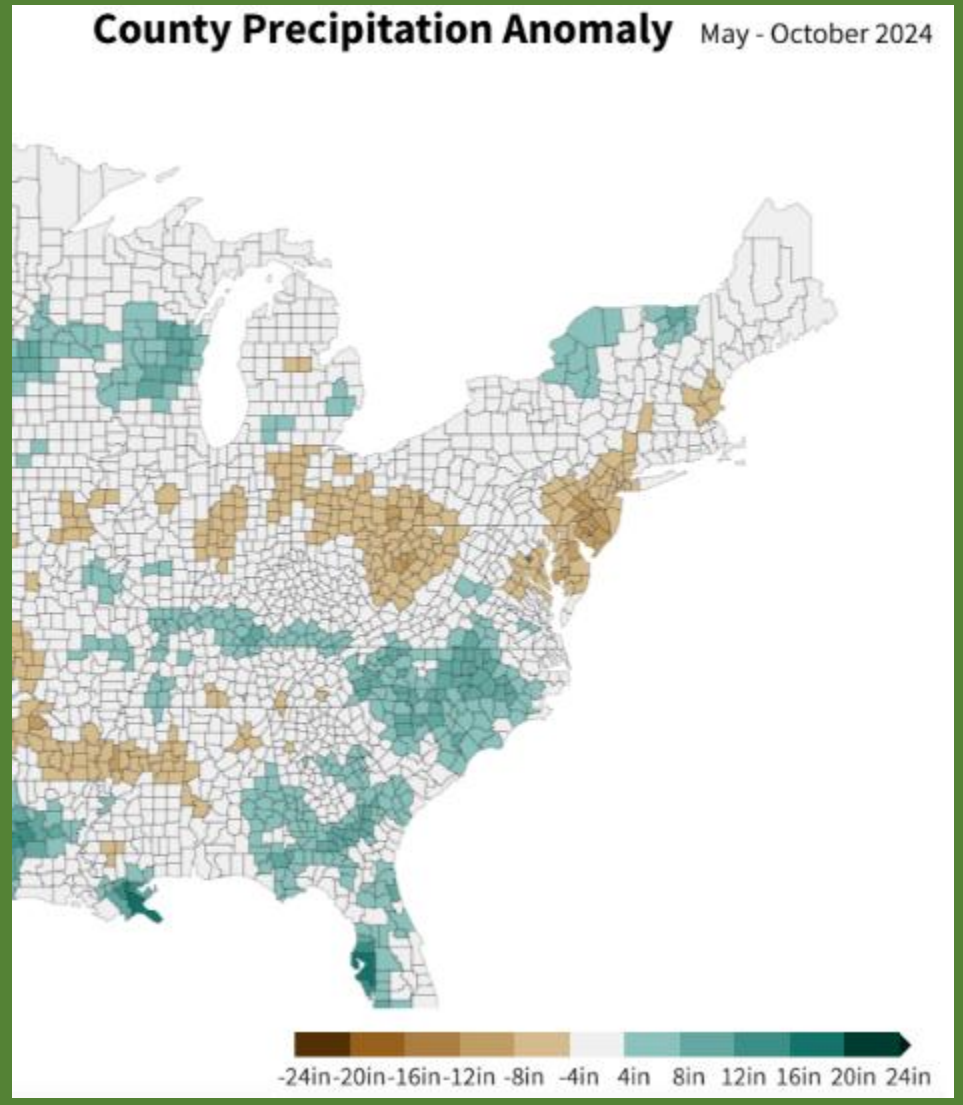
https://mrcc.purdue.edu/CLIMATE/

What is the growing season?

The length of the growing season across the United States is increasing over time due to warming temperatures

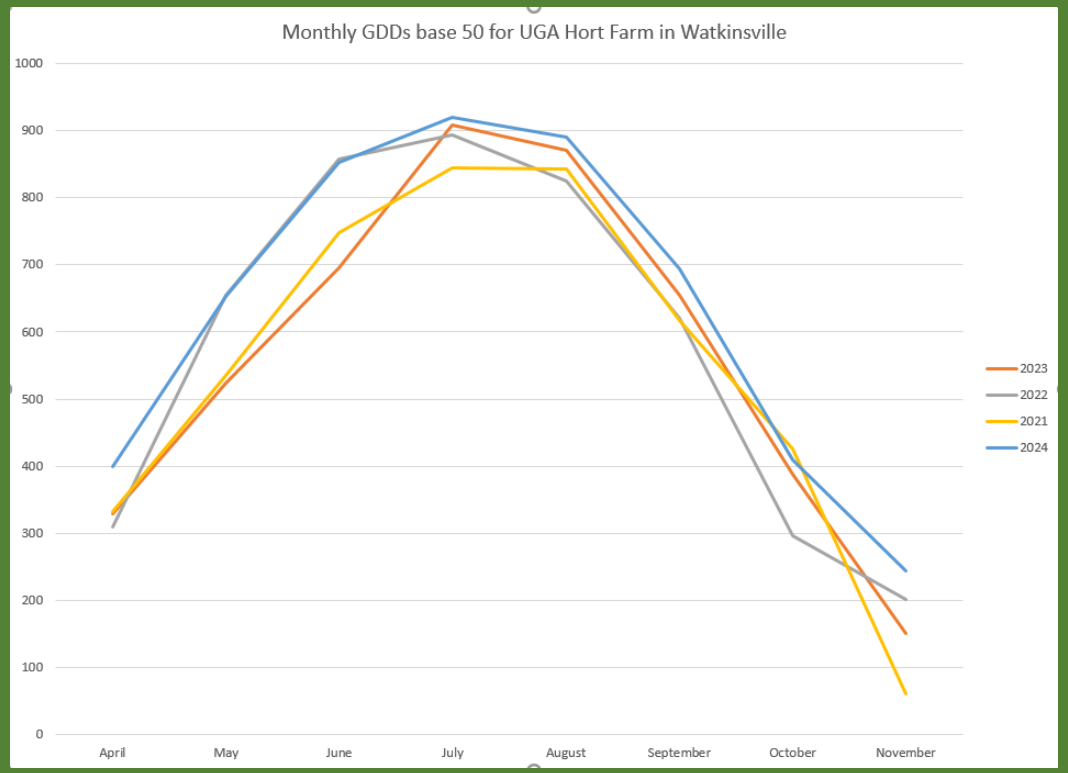
General climate overview





Growing degree day overview

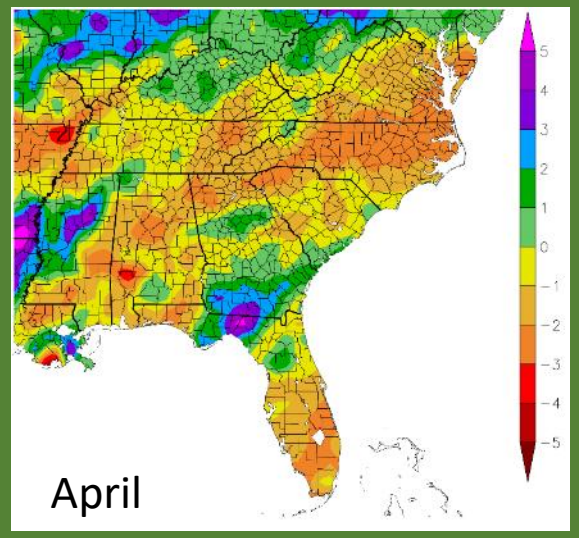
From April-1	To November-30	Total
2024	2024	5061
2023	2023	4523
2022	2022	4659
2021	2021	4407

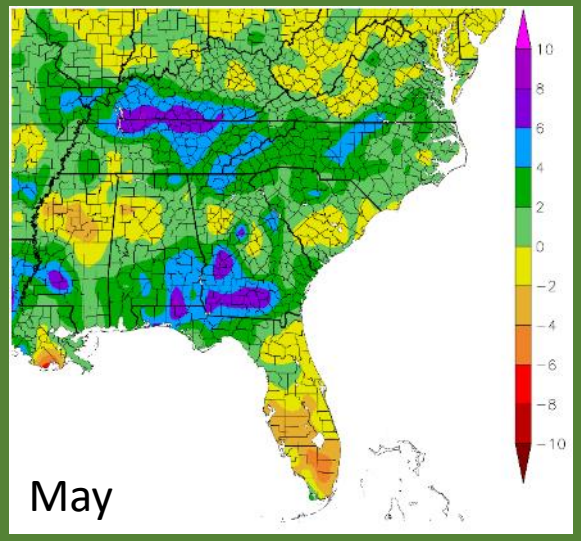


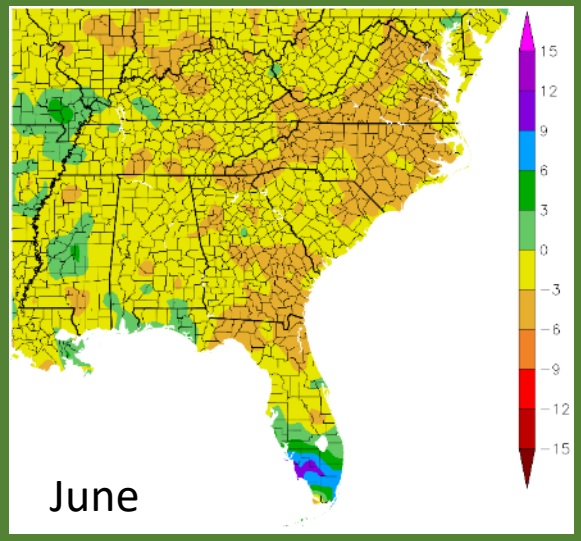
The total number of GDDs (base 50) for the Horticultural Farm in Watkinsville GA was higher than in the previous three years for the April through November time period

Almost every month in 2024 was higher than in the previous three years except October

Precipitation overview







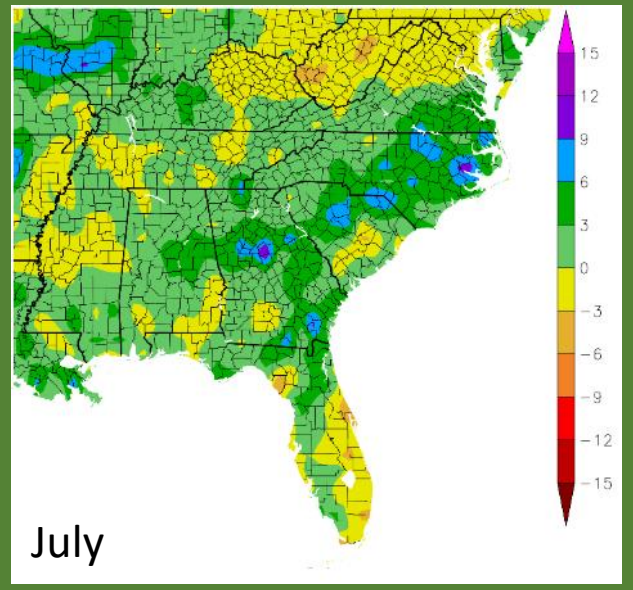
Wet conditions, especially in Florida Panhandle and southern GA and AL, led to many delays in planting and some replanted crops

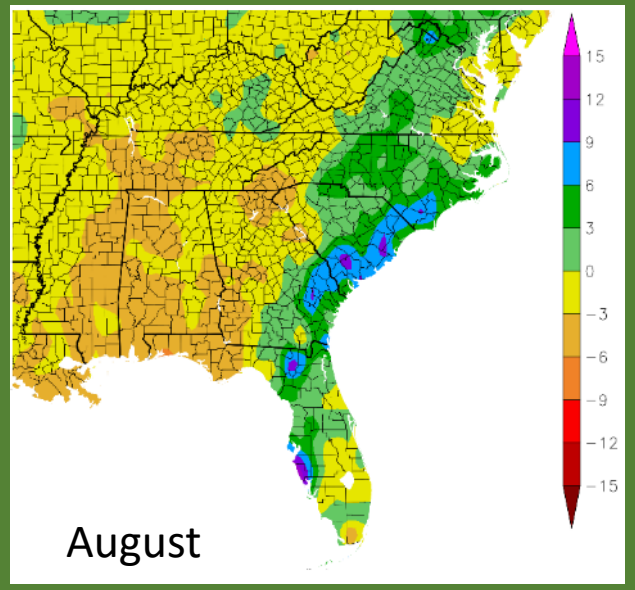
Very dry conditions in June affected corn pollination, plant vigor

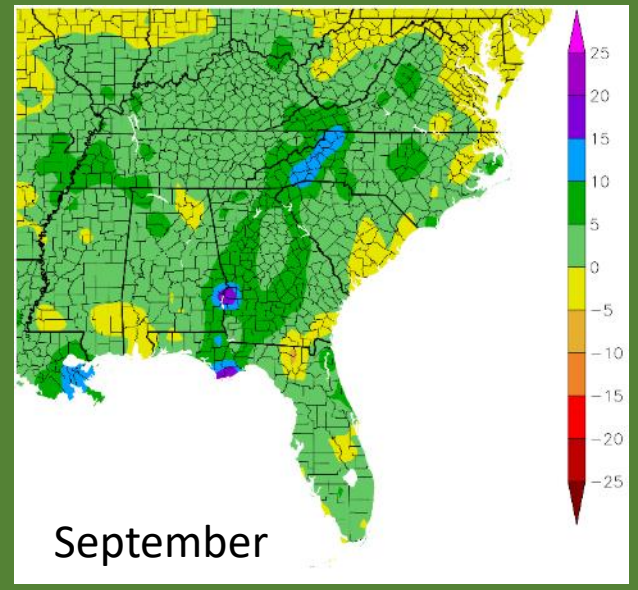
Precipitation overview

Return to wet conditions in July caused big increase in fungal diseases of leaves and roots, as well as slower growth due to cooler temperature and lack of sunshine

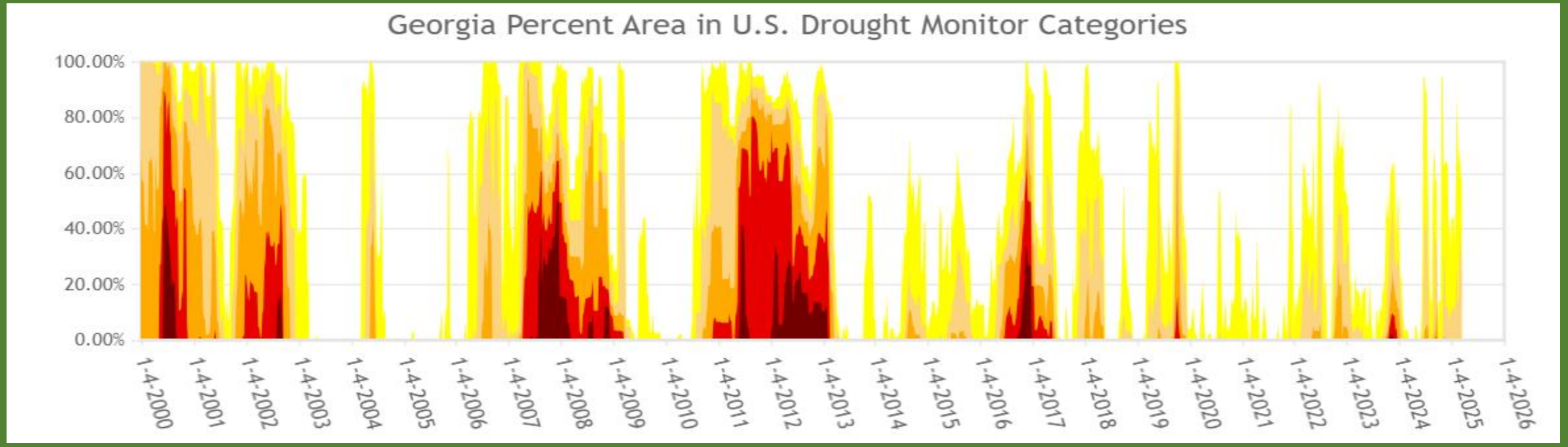
In August, areas without tropical rain saw increases in drought and plant stress, forage losses





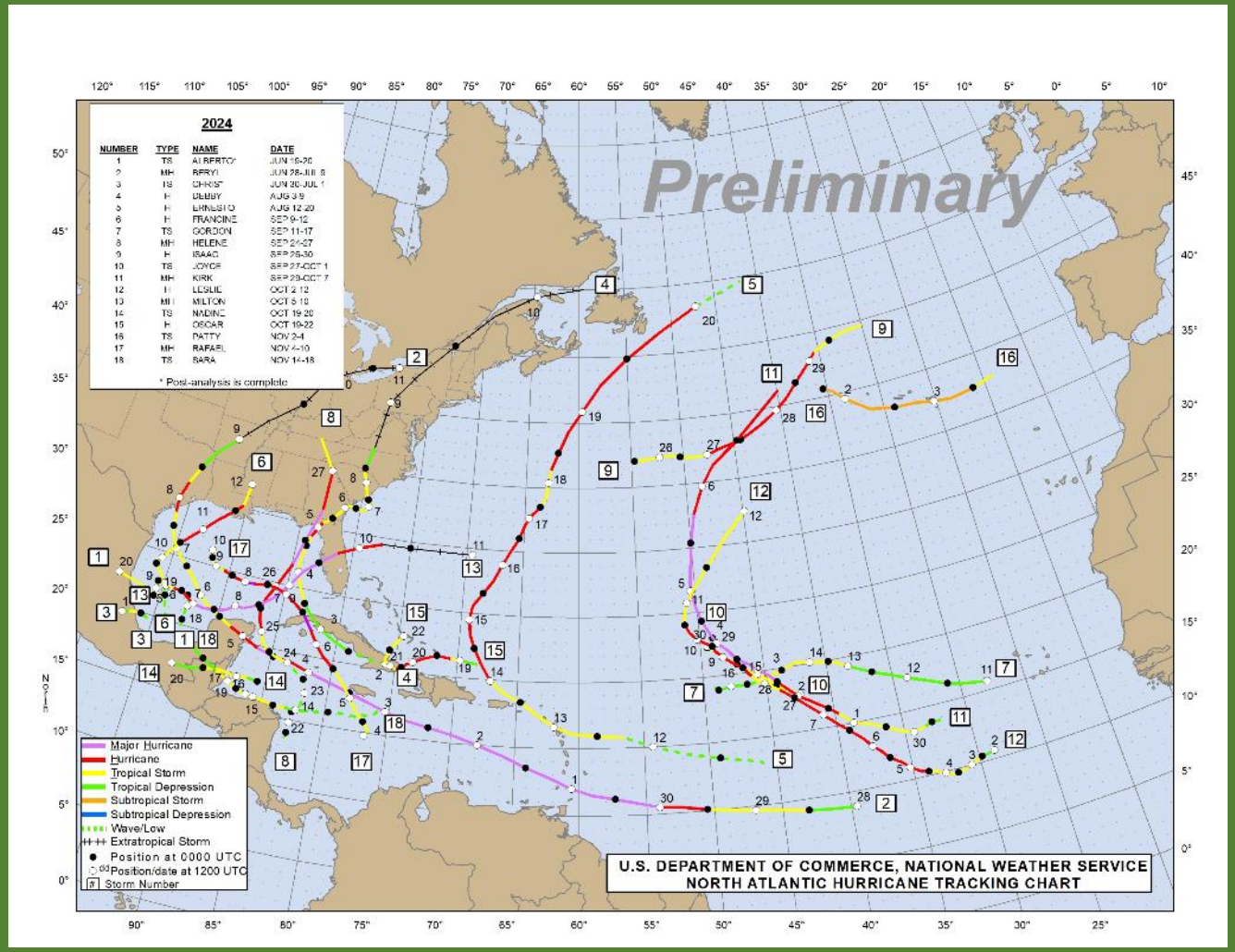


Drought overview



Since 1998 we have had three major droughts in the region as well as some smaller droughts that were shorter-lived or more limited in area. Drought is now expanding again.

Ag Impacts of Tropical Storms and Hurricanes

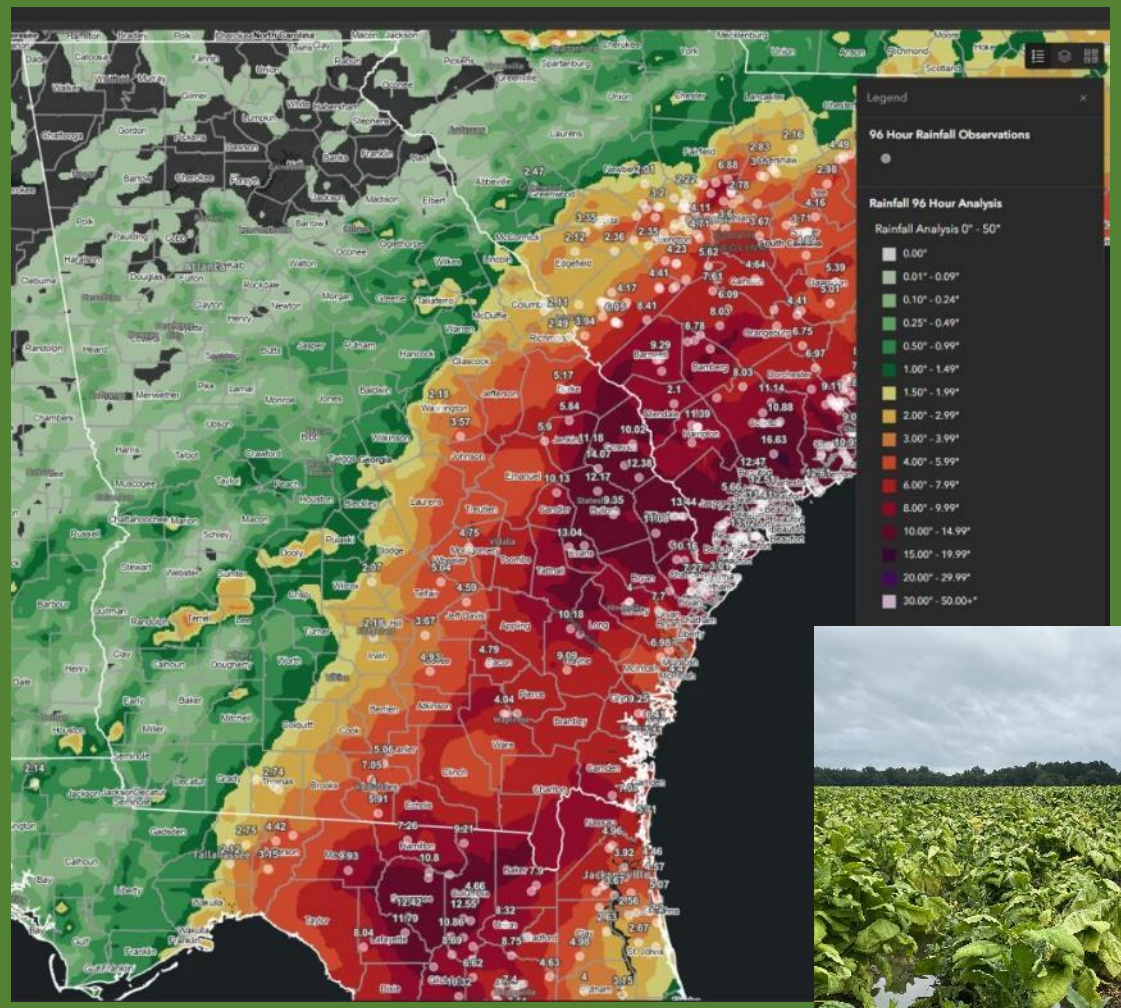


This has been an active year for tropical storms and hurricanes, even though there was a significant lull in storms between Debby in early August and Helene in late September

Francine did bring some rain to Alabama which helped reduce drought conditions there

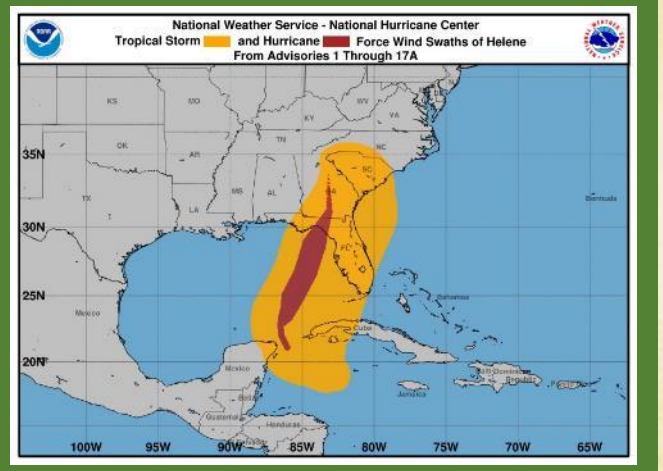
There was also rain in November from the remains of TS Rafael, which brought several inches to SE Georgia

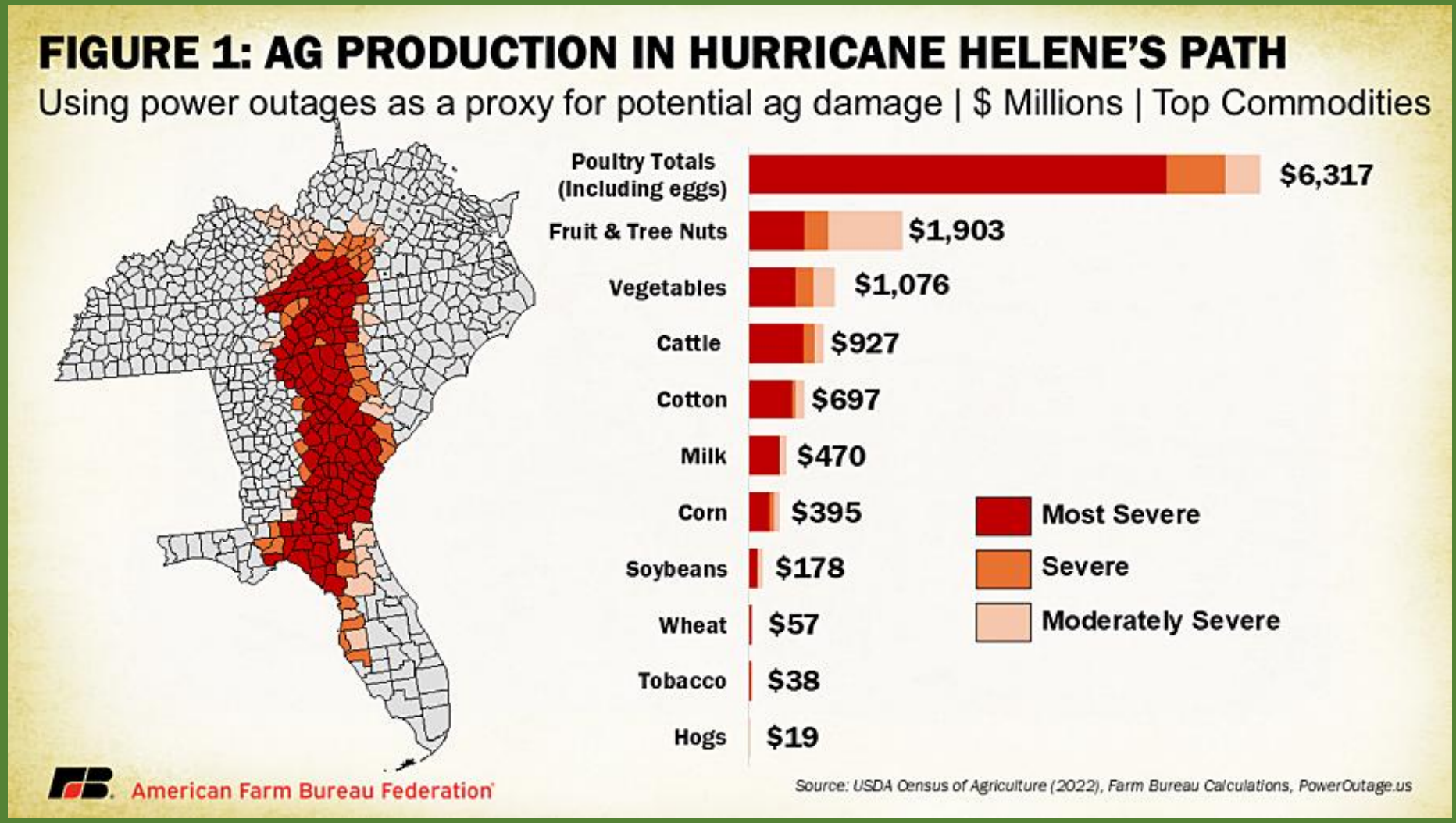
Impacts of Debby on agriculture



- Debby was primarily a rain event, with many areas receiving close to an inch of rain in rain in Florida, Georgia, and South Carolina
- Heavy rain resulted in severe erosion, loss of cotton bolls and quality
- 75% of GA tobacco crop lost
- Estimated losses in Florida go up to $263.2 million
- Many other losses cannot be determined until after harvest

Impacts of Helene on agriculture



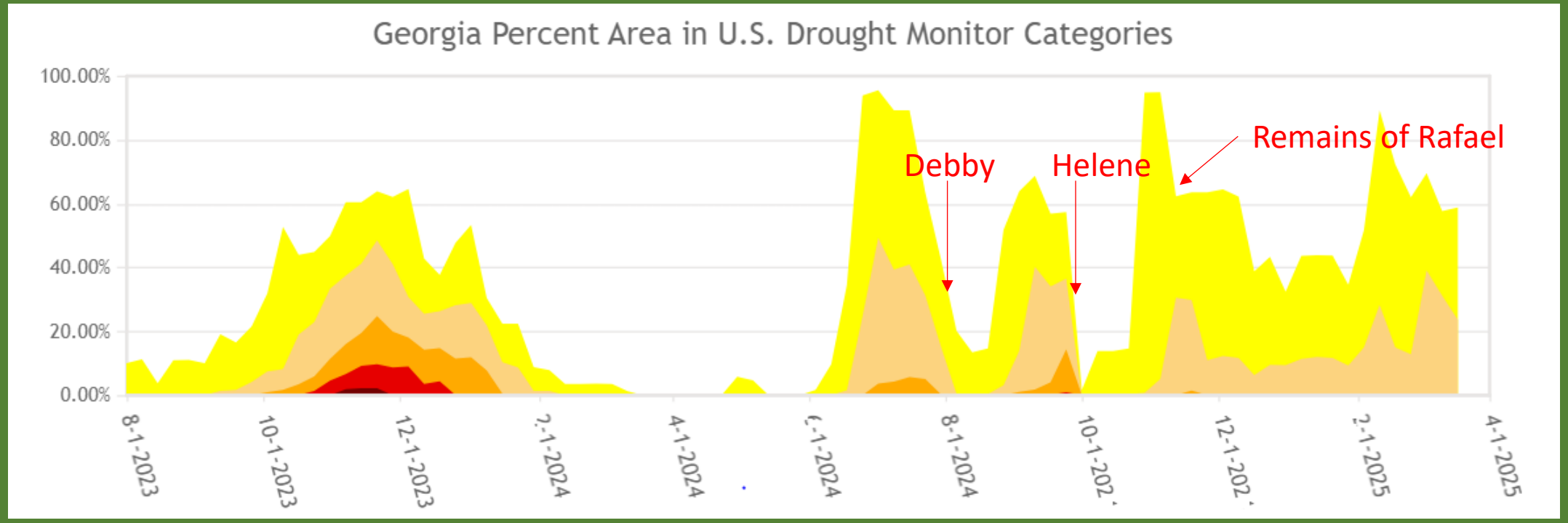


Impacts of Helene on agriculture

- Estimated losses to Georgia agriculture of $5.6 billion, including lost crops and livestock, timber, infrastructure, and replacing equipment and trees, including 1/3 of the cotton crop, over 200 chicken houses, and hundreds of thousands of pecan and pine trees plus damage to blueberries and peaches

- Florida producers said losses worse than Idalia for peanuts, livestock

Impacts of tropical storms on drought



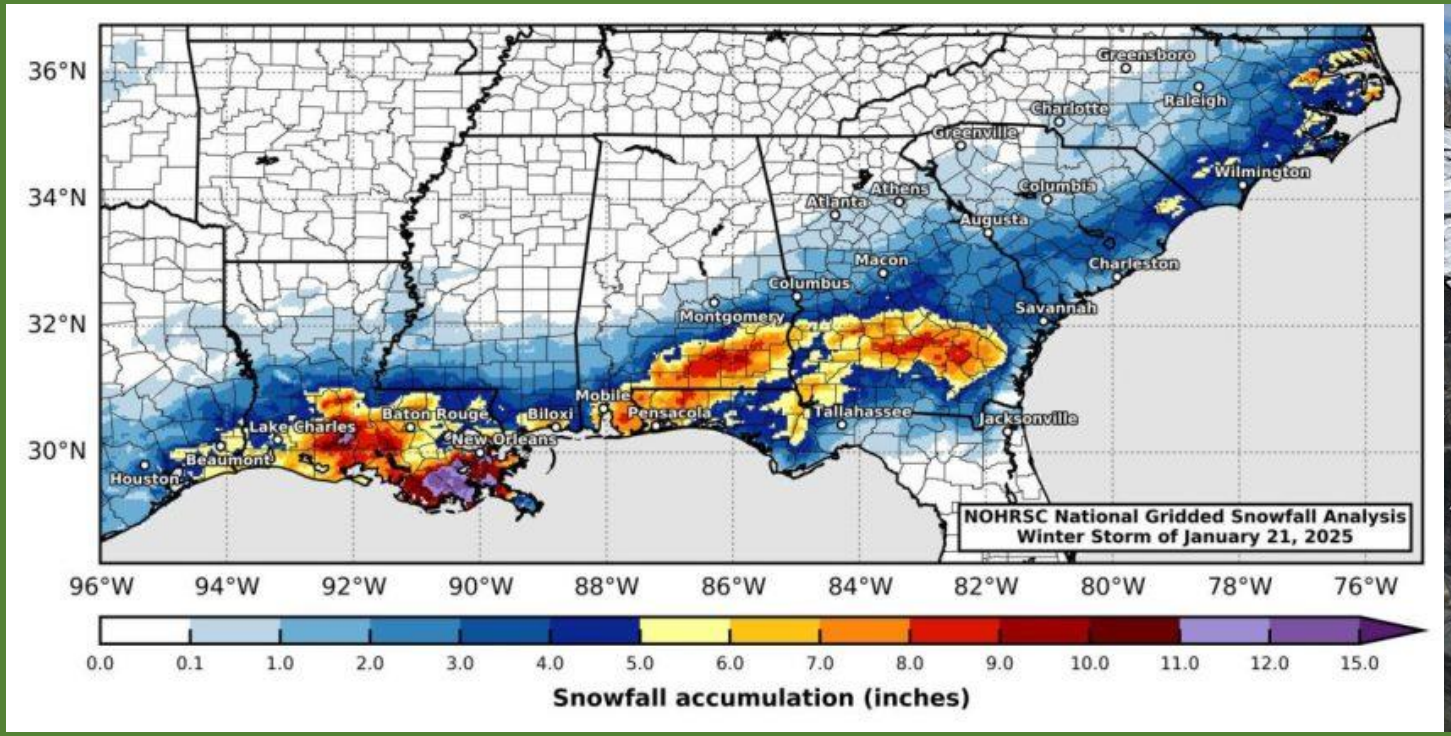
- About 30% of Georgia's summer rain comes from tropical systems
- The rain from Debby and Helene reduced the drought levels in the Drought Monitor
- However, most of the rain ran off and did not contribute to soil moisture recharge

Summary of 2024 Growing Season Impacts on Ag

- Precipitation swung from high to low and back to high from one month to next, causing varied impacts on crops—overall pattern dominated by tropical cyclones
- Temperatures generally a little warmer than average
- Drought expanded in periods of low tropical activity
- Multiple hurricanes and tropical storms brought devastation to Florida, Georgia, the Carolinas, eastern Tennessee and western Virginia, sometimes twice in same season
- Many crops impacted during the growing season, including tobacco, peanuts, cotton, citrus, pecans, blueberries, vegetables
- Livestock also affected by numerous storms, especially poultry

January 2025 snowstorm

The snowfall during late January, even though it was not during the traditional growing season, caused losses of up to $15 million to nursery growers because the weight of snow collapsed shade structures.



La Niña finally arrived

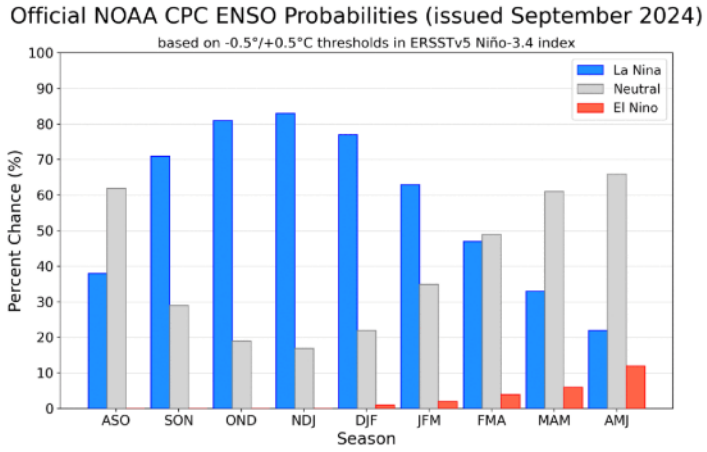


Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N-5°S, 120°W-170°W). Figure updated 12 September 2024.

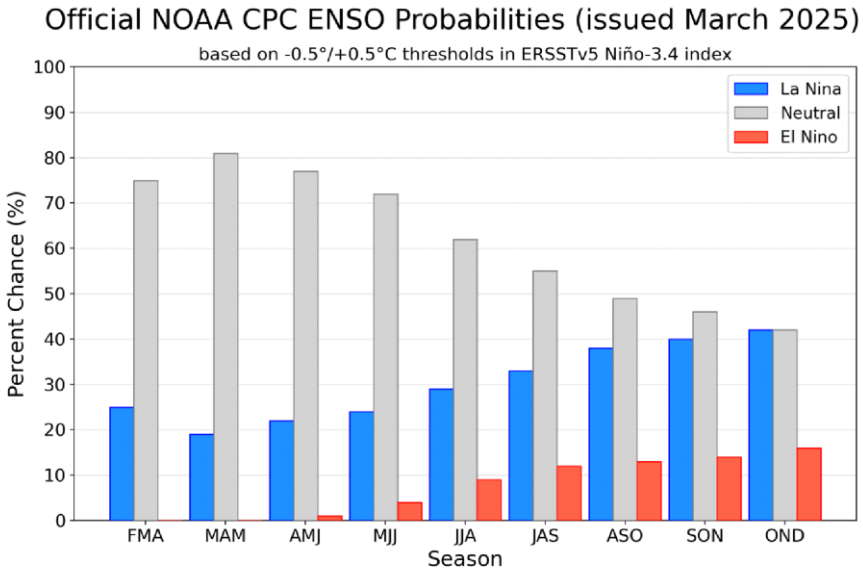


Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N-5°S, 120°W-170°W). Figure updated 13 March 2025.

La Niña was declared in early January, a few months after we expected it. The current La Niña is weak, so has less influence on Southeast weather than a strong one. It will likely last for another month or so.

La Niña finally arrived in January

This year's La Niña had the coldest water to the west of where it usually forms, which shifts the pattern of atmospheric waves in the Northern Hemisphere. Why? We don't know. Every La Niña is different.

The La Niña is also weaker than normal in part because the ocean temperatures have been so warm this year.

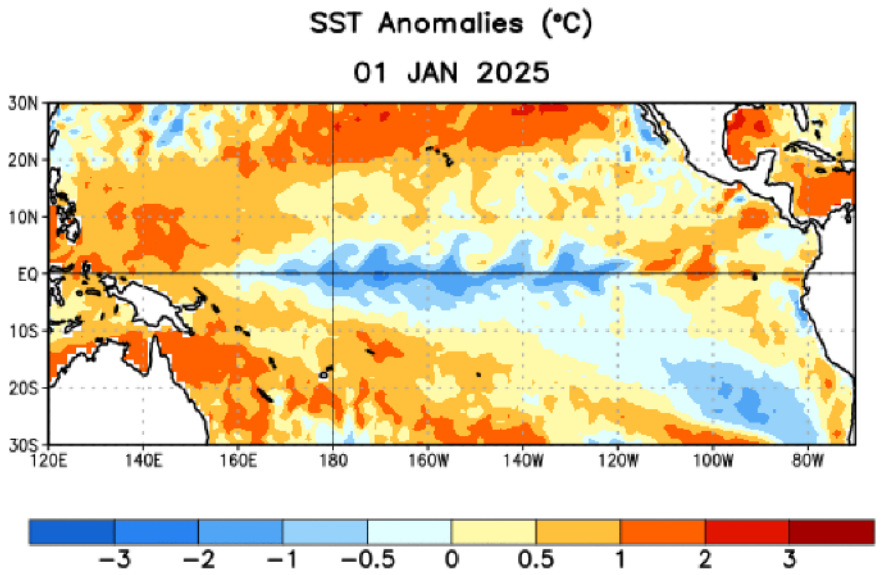
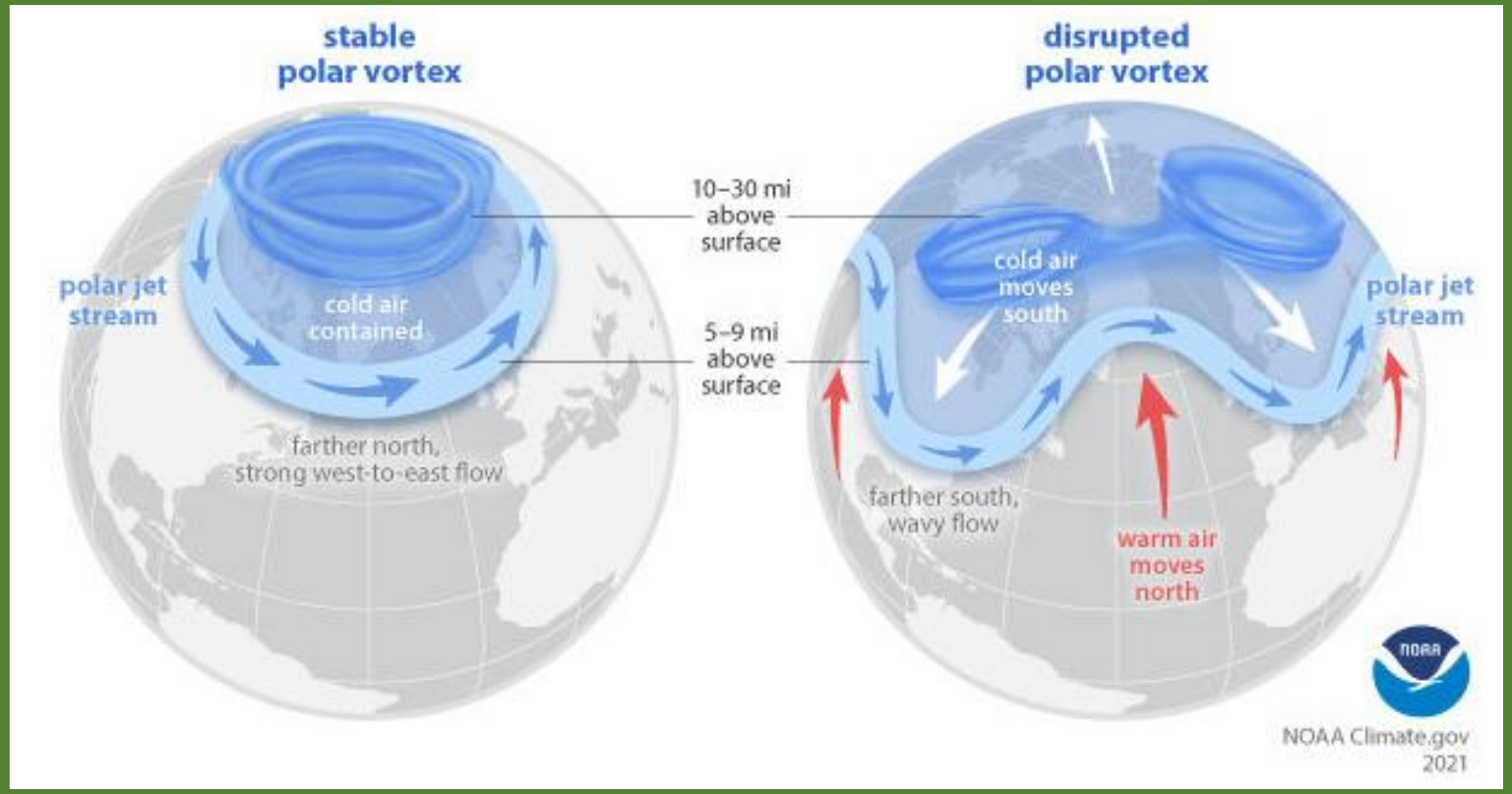


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 1 January 2025. Anomalies are computed with respect to the 1991-2020 base period weekly means.

The Polar Vortex shows where the coldest air is

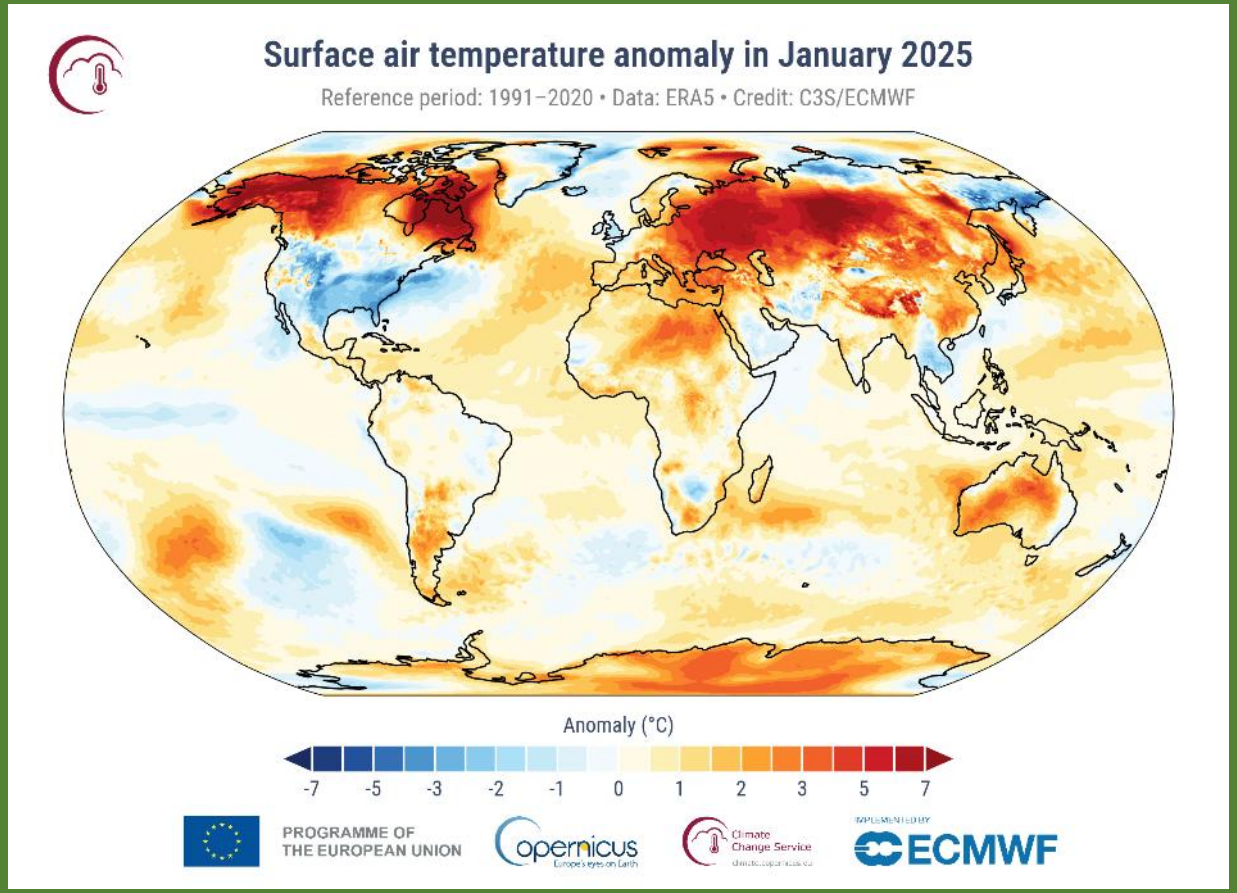


In many years, the cold pool of air below the Polar Vortex is confined to polar regions and we stay warm.

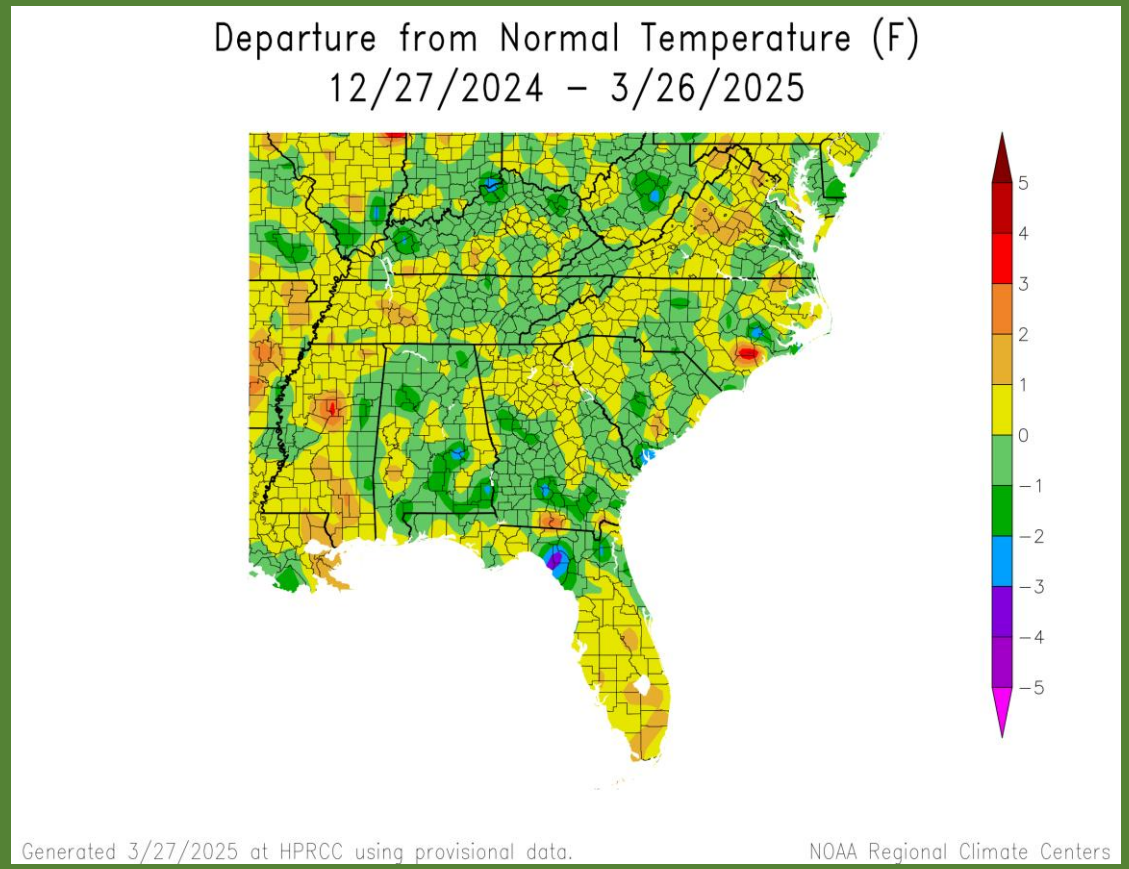
This year the Polar Vortex was very wavy, leading to cold air moving into the Southeast.

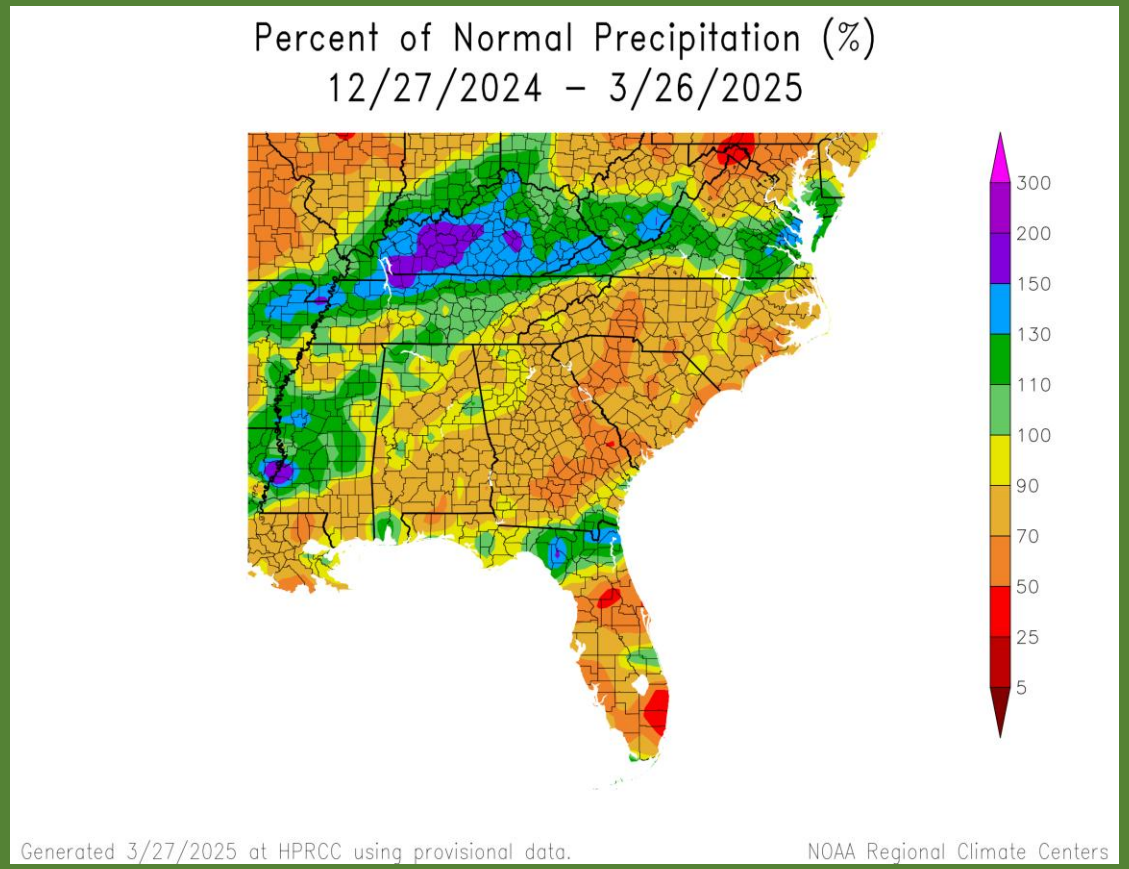
January 2025 was unusually cold in the Southeast

The Southeast is one of the few places on earth with a temperature colder than average in January 2025 due to a displacement of Arctic air into our region caused by a highly wavy wind pattern.



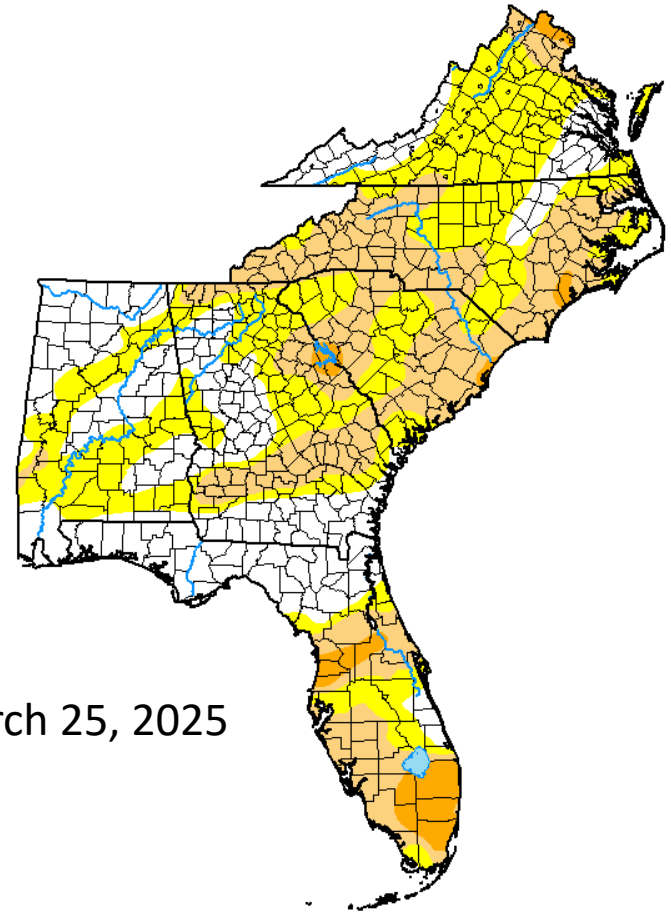
Where we are now





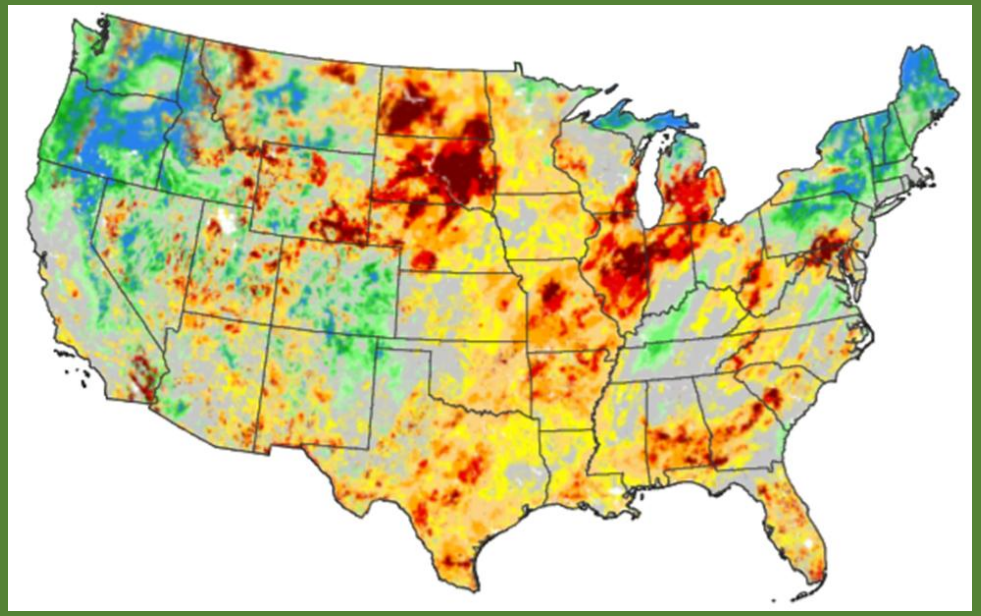
- Average temperature for winter was 1-2 F below normal and precipitation has been much drier than normal

Where we are now

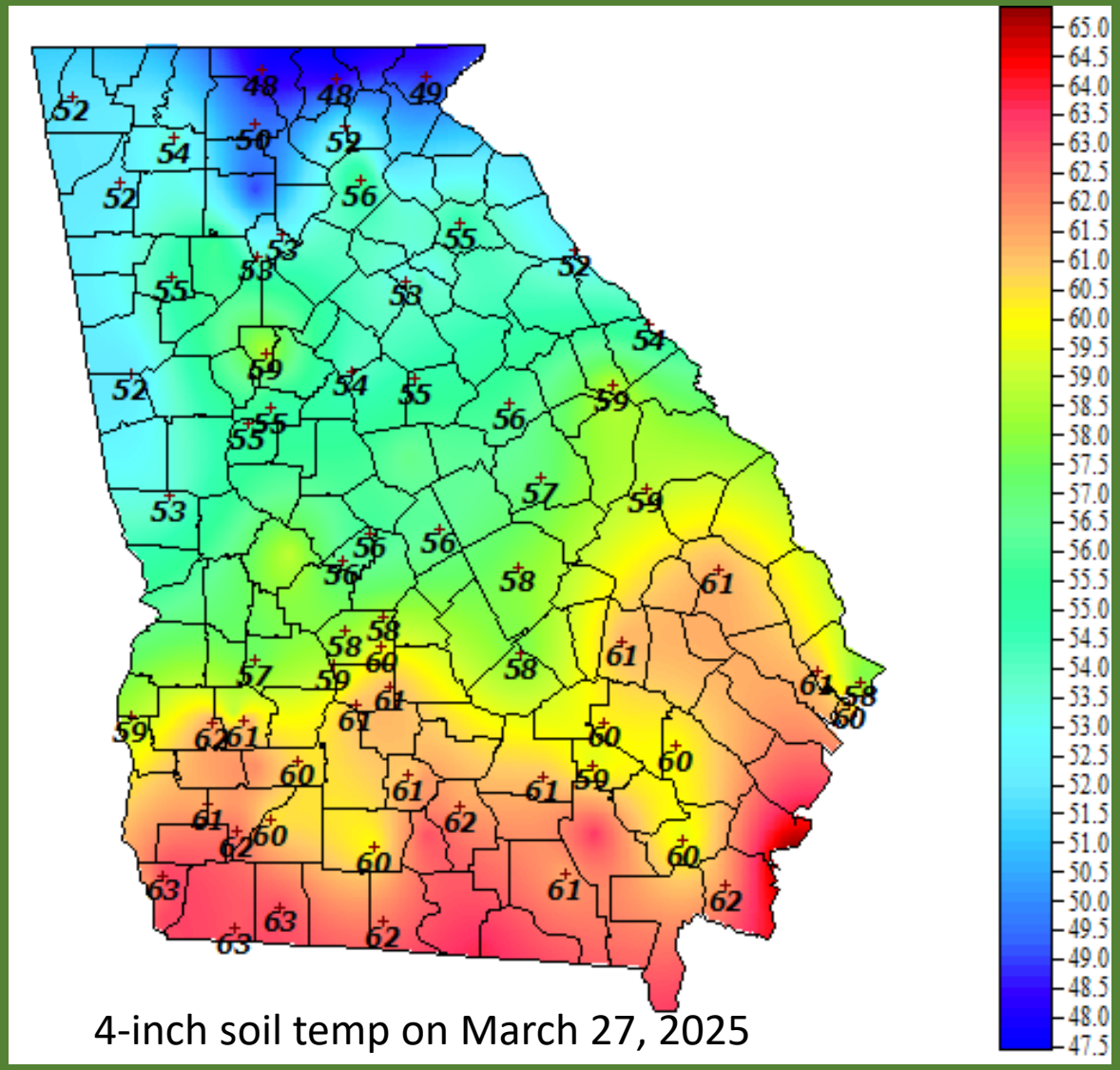


March 25, 2025

- Dry conditions over most of Georgia were reduced due to winter rain and cold conditions
- Soil moisture is low across most of the region



Where we are now

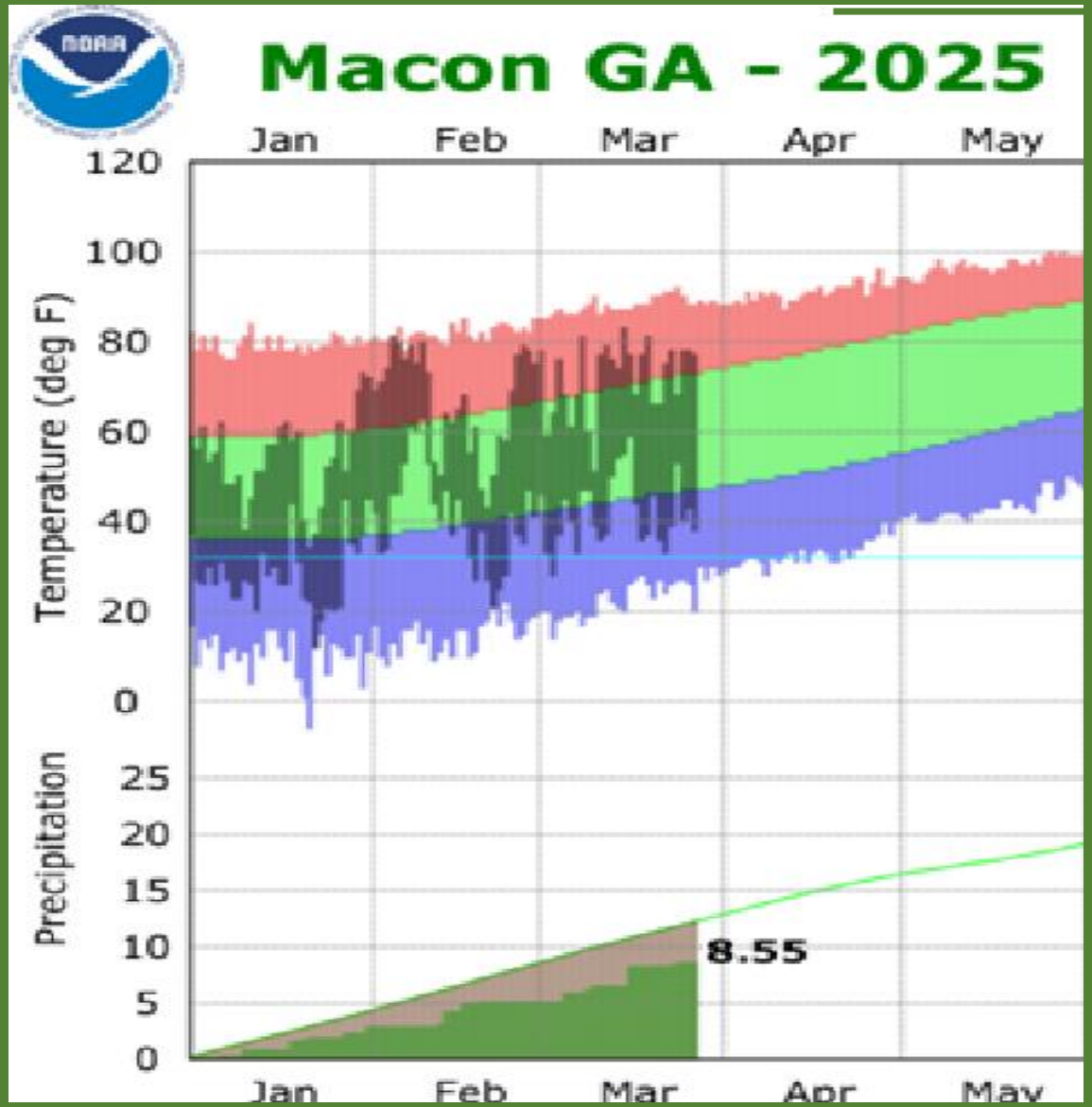


4-inch soil temp on March 27, 2025

- 4-inch soil temperatures have been above 65 F but recently dropped to about 60 F in south GA due to cooler weather
- With warmer weather the next couple of weeks they should rise again soon

Where we are now

https://weather.ffc/climateplot

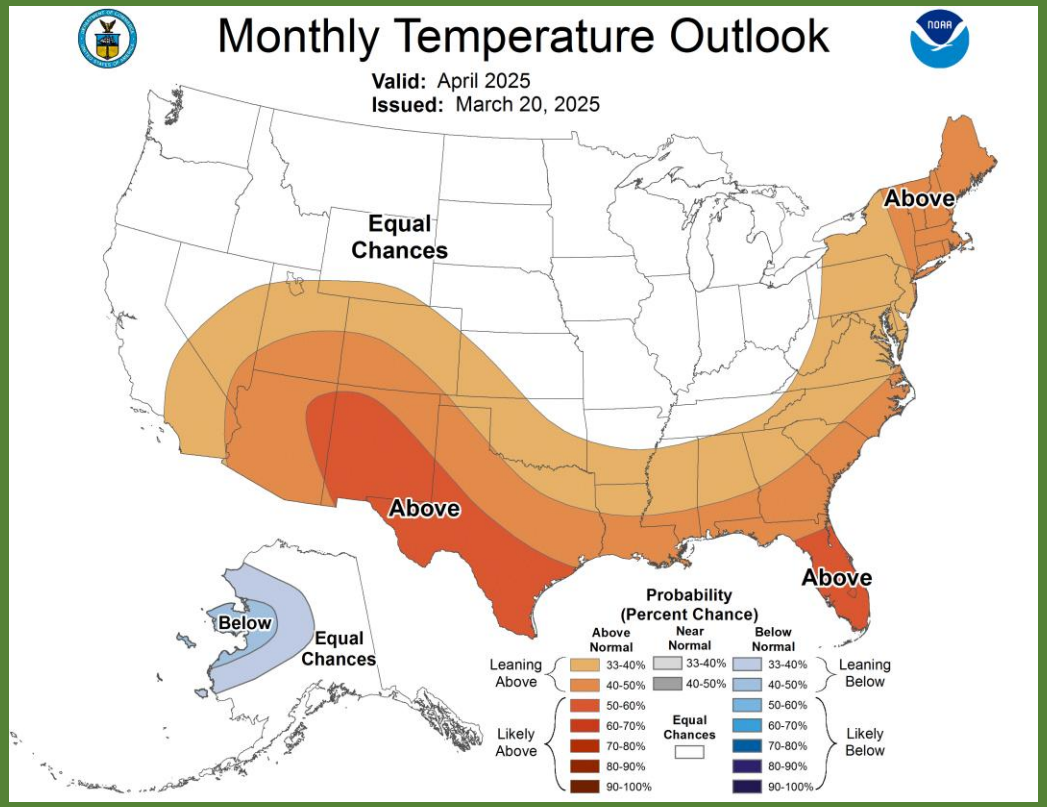


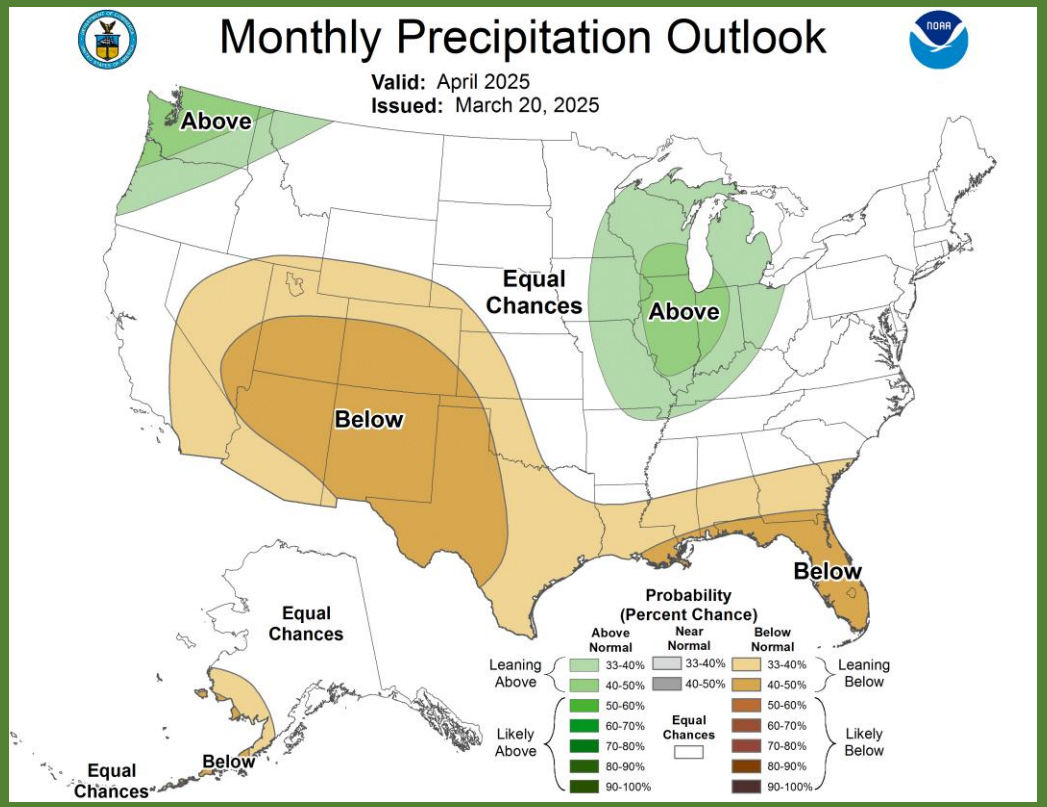
While January temps were colder than normal, there was a change to a warmer pattern in early February.

We had another cold spell in mid- to late February but since then has been relatively close to normal.

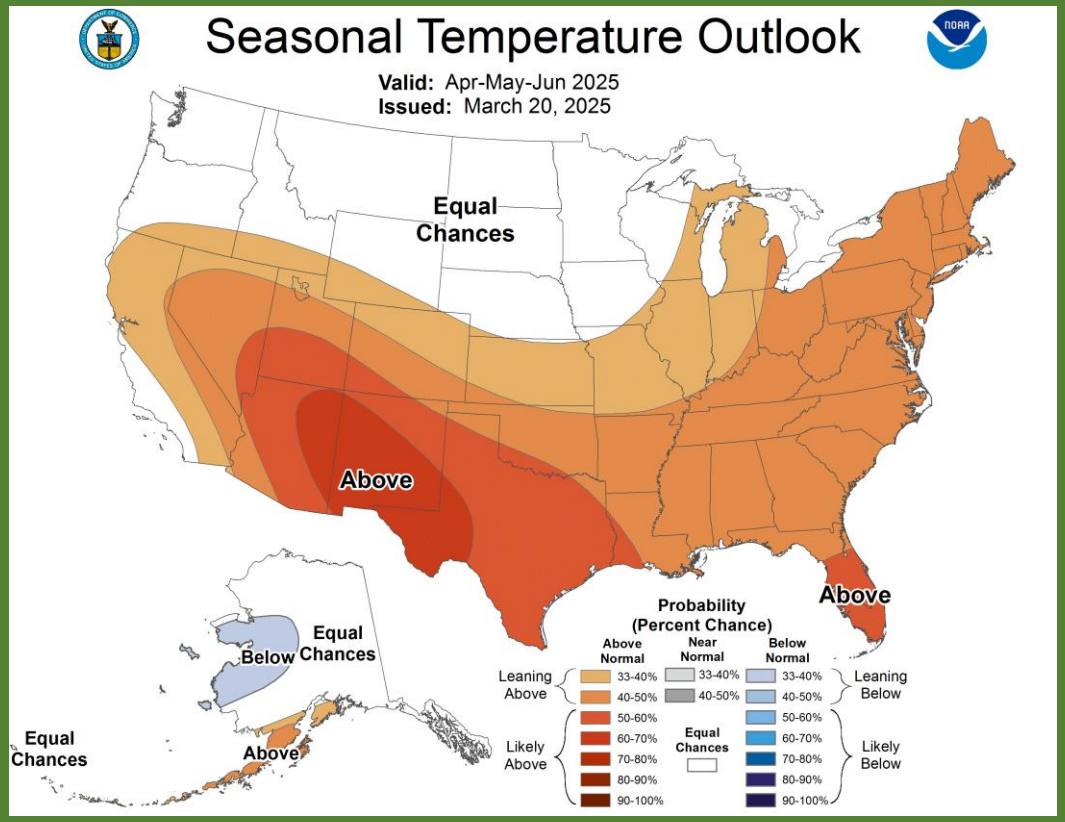
Precipitation has been below normal for the whole year so far, leading to an increase in drought conditions.

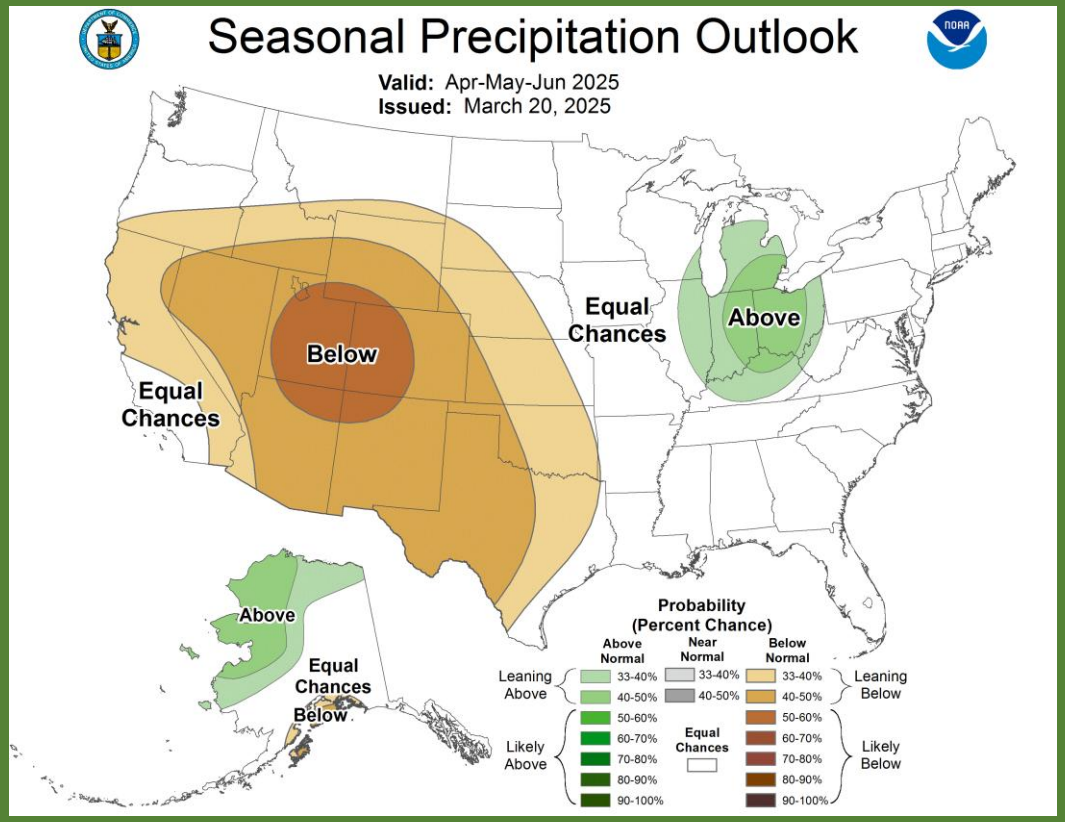
In early February the pattern shifted to a more typical weak La Niña pattern and it has continued





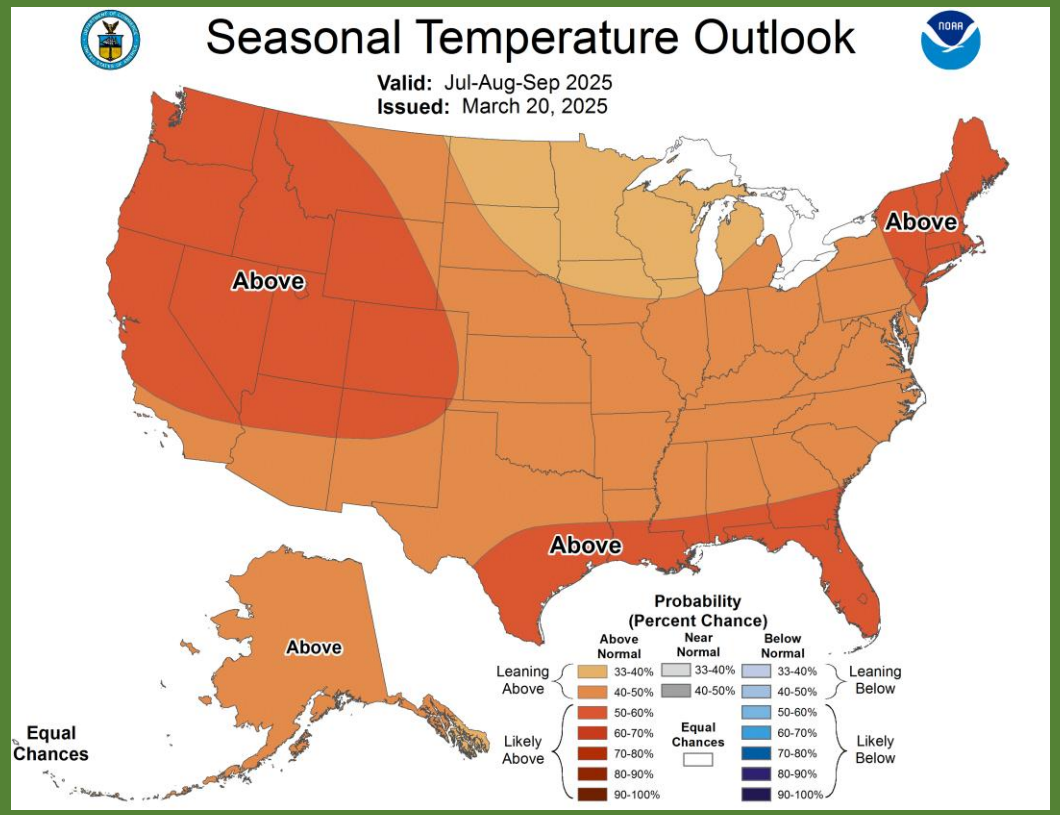
What can we expect through early summer as the La Niña fades?

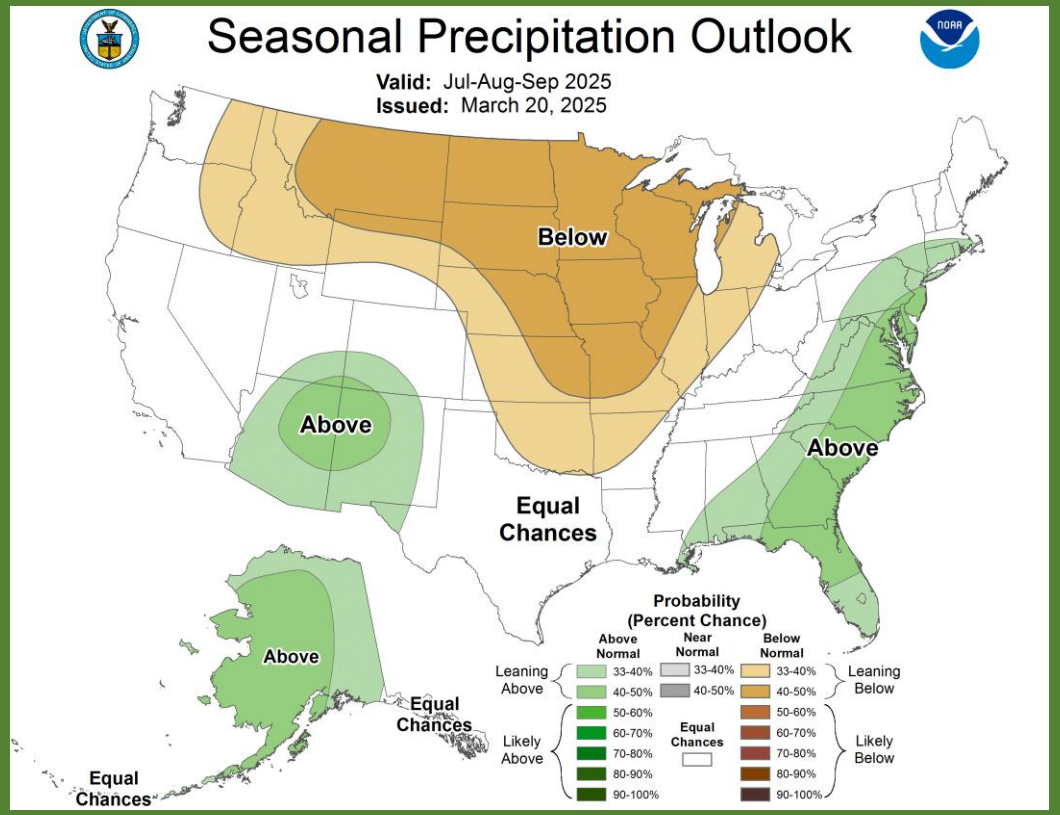




April-June

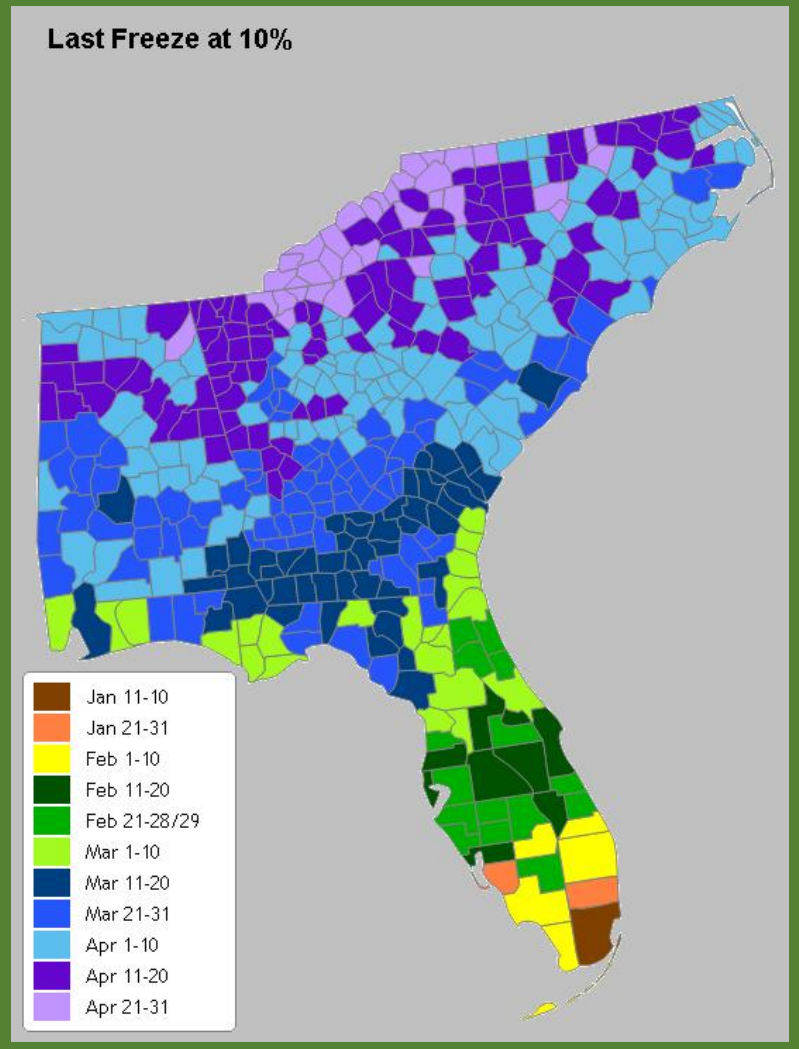
What can we expect in summer once La Niña is gone?



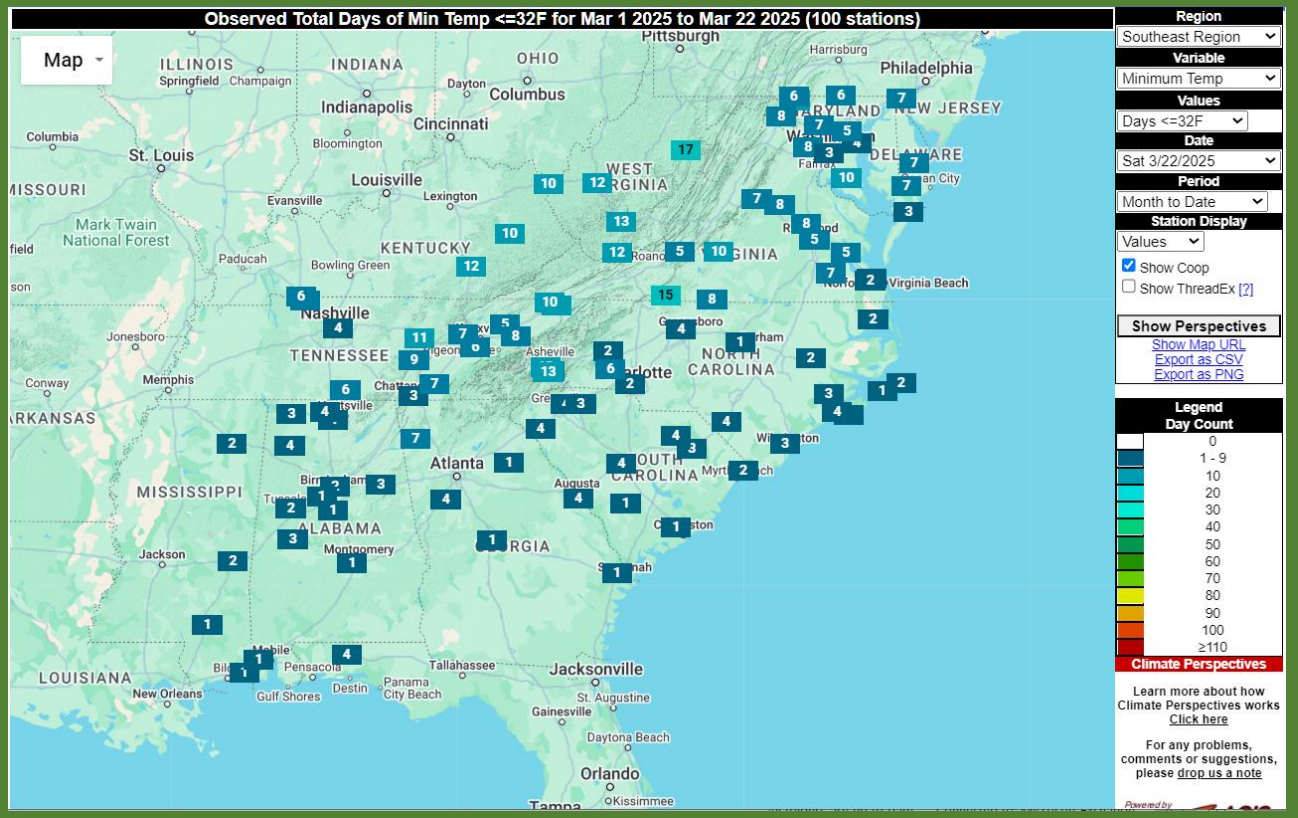


July-September

Will we have a late freeze?

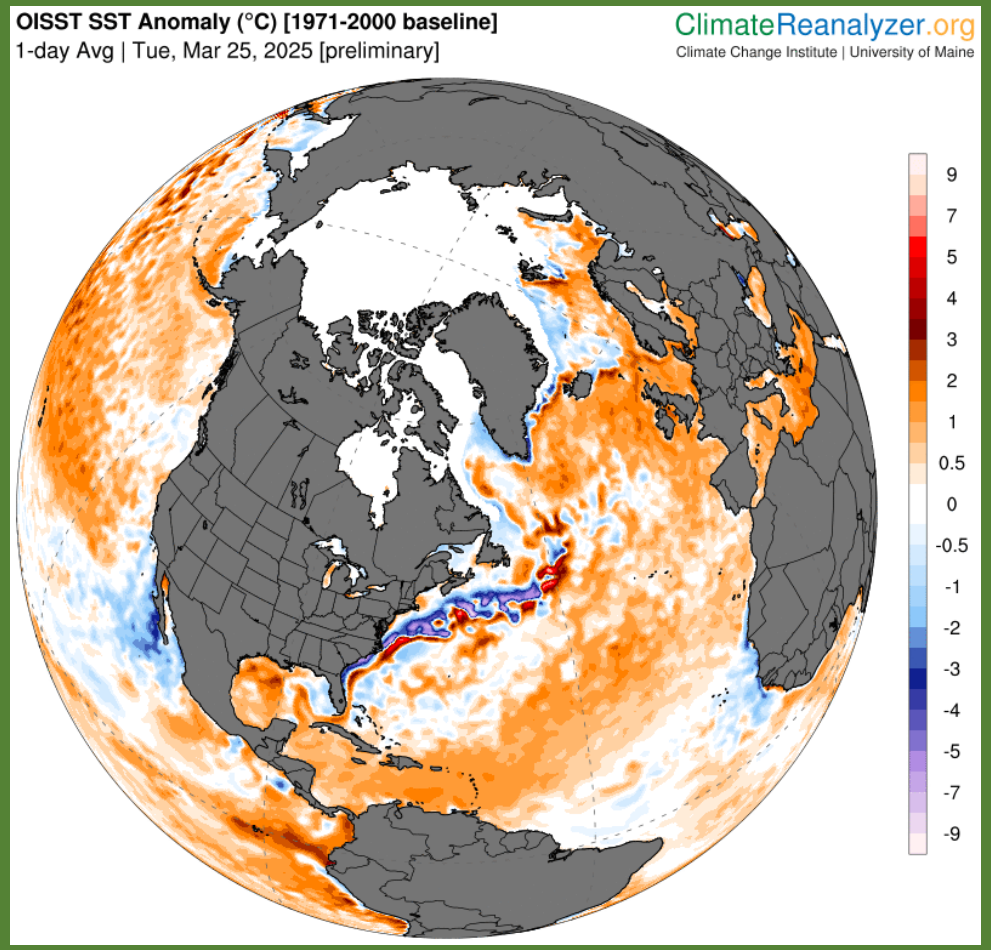


- No freeze in south GA and SE AL since March 1
- No sign of freeze in long-range models through April 11



http://agroclimate.org/tools/freeze-risk-probabilities/

The 2025 Atlantic Tropical Season Outlook

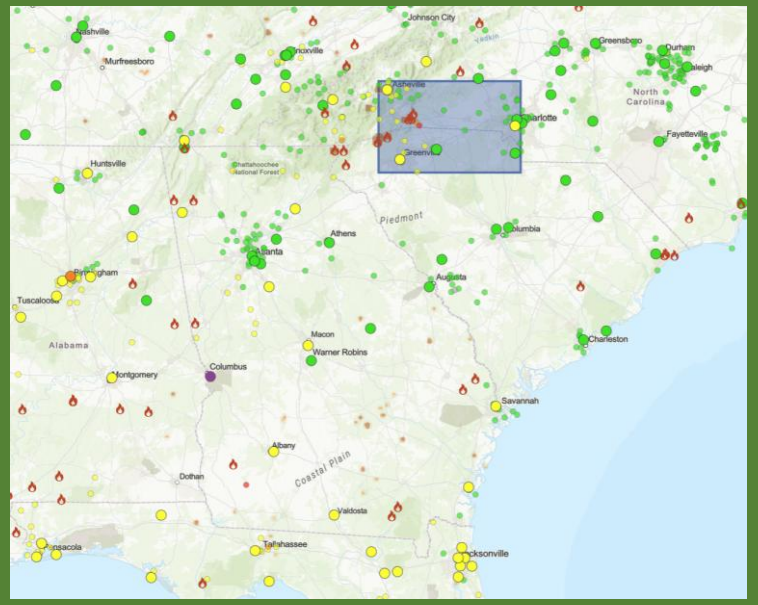


https://climatereanalyzer.org/

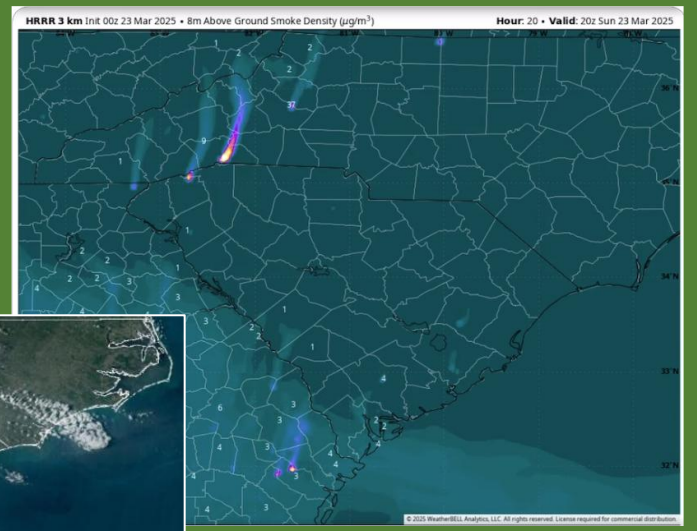
- Forecasts for the upcoming tropical season are just starting to be issued
- Because of the likely neutral ENSO conditions, we can expect another fairly active season
- However, there is no skill at predicting where those storms will go, in spite of some social media hype
- Sea surface temperatures continue to be above normal as we head towards the tropical season—this can lead to rapid intensification near landfall

A word about wildfires

- Dry conditions have led to an increase in wildfires and associated reduced air quality across the region
- Extra fuel from downed trees from Helene and other storms had added to the risk of wildfires
- If you do controlled burns, make sure you know your local regulations for how to manage them
- Take advantage of good weather to scout your property for potential fire risks and remove them



https://fire.airnow.gov/

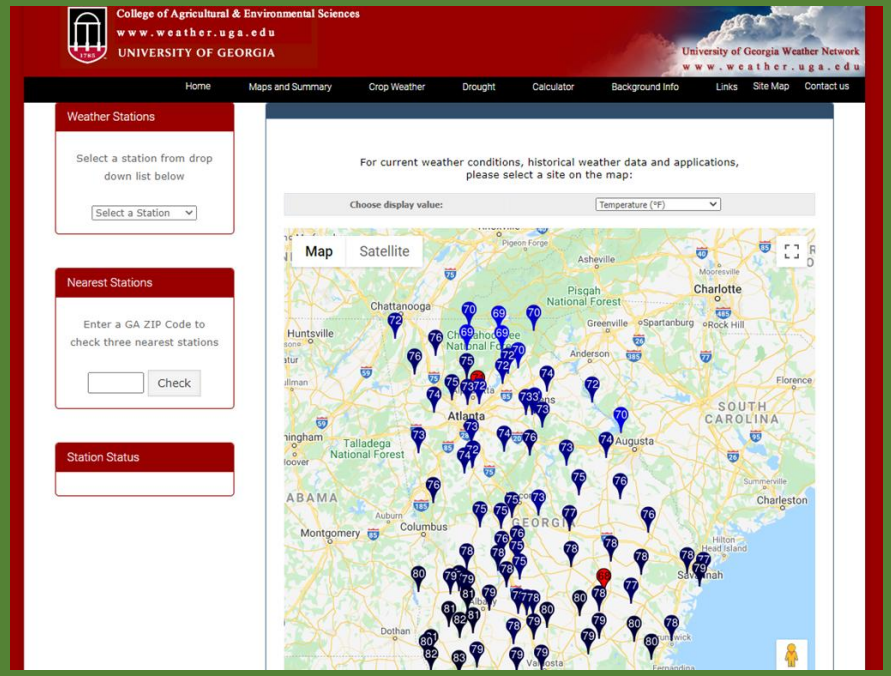


The Bottom Line

- The growing season has already begun across the state and plants are using up available soil moisture
- Most corn in south GA already planted due to warm soils, farmers starting on other crops now although moisture is an issue
- Northern GA will be less affected by La Niña than southern parts of the state and is likely to get more rain than the southern half
- We are more likely to see a drought in summer due to lack of winter soil moisture recharge unless tropical storms come over GA again
- Another active tropical season is expected but we don’t know where the storms will go

CONTACT ME AT:

Pam Knox
pknox@uga.edu
706-542-7186



http://site.extension.uga.edu/climate

UGA Weather Network: http://georgiaweather.net

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On the CASE...
Climate and Agriculture in the South East