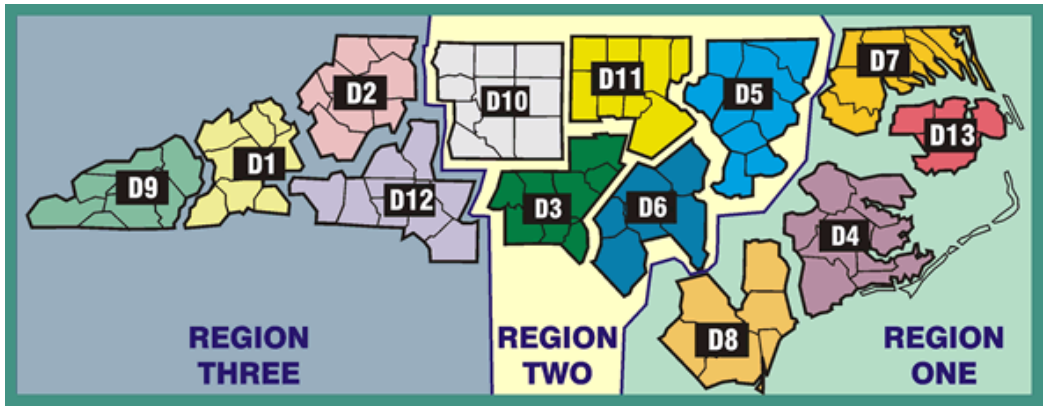
Statewide Seasonal Fire Danger Assessment

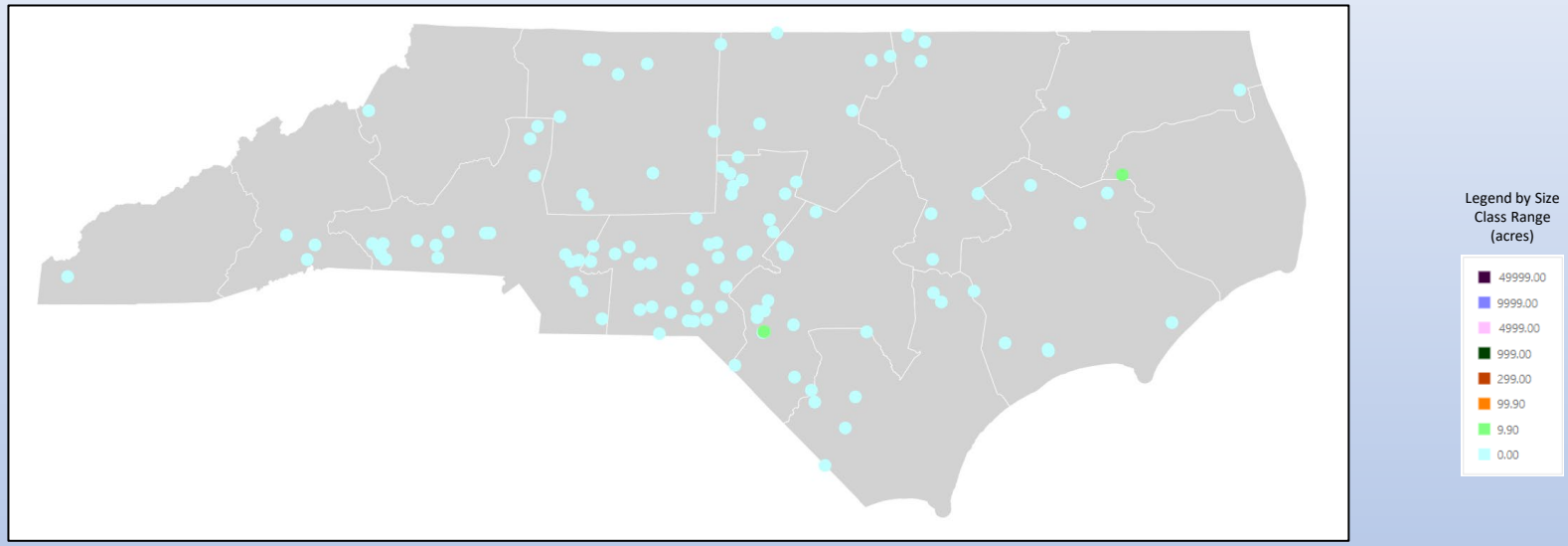
– October 2023 Update –



Created by: Jamie Dunbar
Fire Environment Staff Forester
NC Forest Service

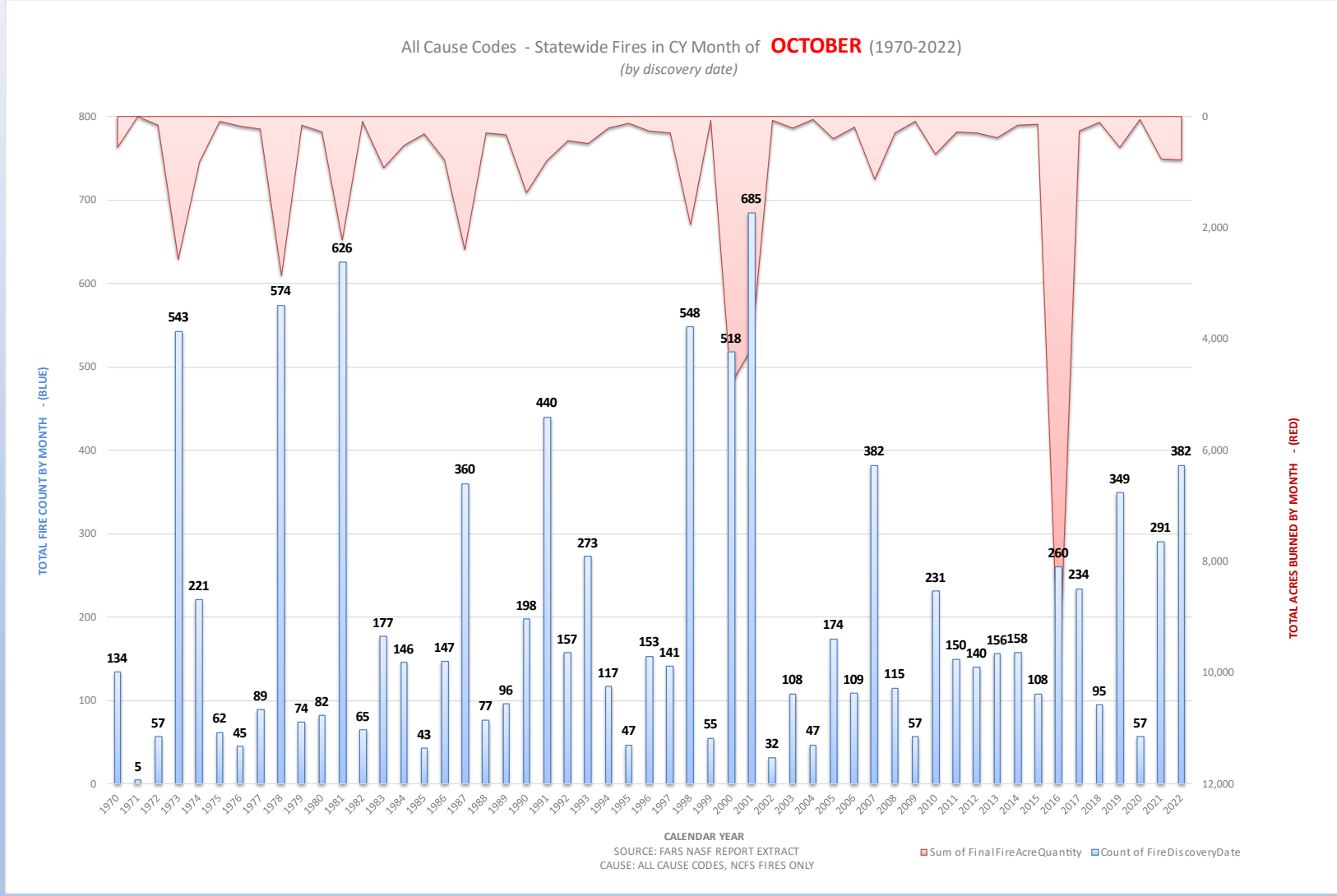
Month to Date Incident Activity

fiResponse Incident Location Map (for general context, preliminary data)
Date Range: 10/1 – 10/12, 2023
Report: Business Intelligence Module, Response Trends Map



NCFS – By Region				
Monthly Fire Activity (Does Not Include Federal Ownerships)				
Data Source:	Signal 14 Regional Activity Summary Report (Signal 14 is a daily snapshot in time)			
Date Range:	10/1 – 10/12, 2023			
Area	Wildfire Count	Wildfire Acres	RX Count (State & Private)	RX Acres (State & Private)
R1	14	99.1	3	237
R2	72	97.0	28	1,587
R3	24	6.8	1	23

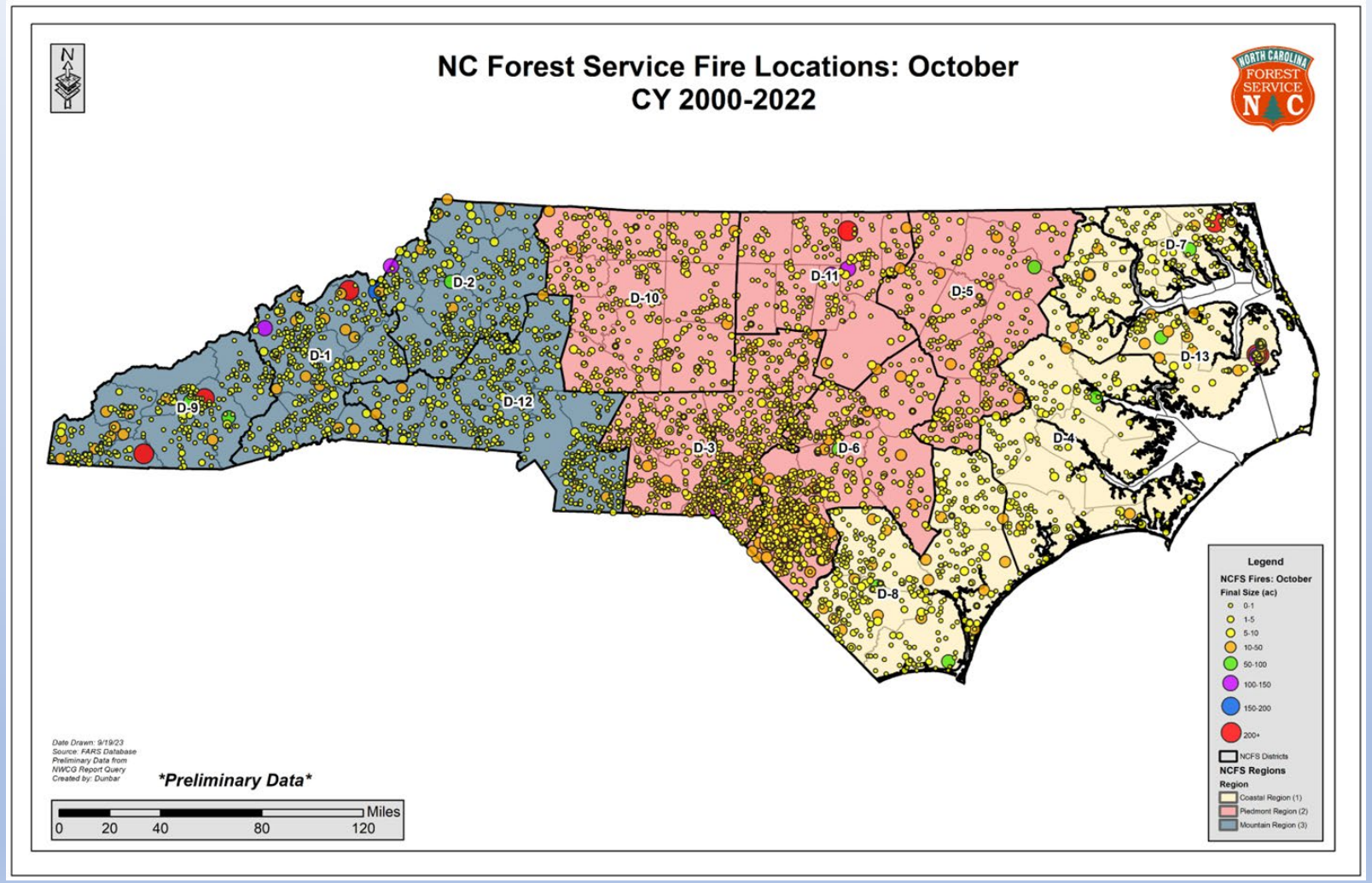
Distribution of All Fires for month of October from 1970 - 2022



Cause: All Cause Codes, Statewide, NCFS Reported Fires Only

10-Yr. Rolling Average for October: ~ 209 Fires for 1,334 Acres

Fire Locations of All Fires for month of October from 2000 - 2022



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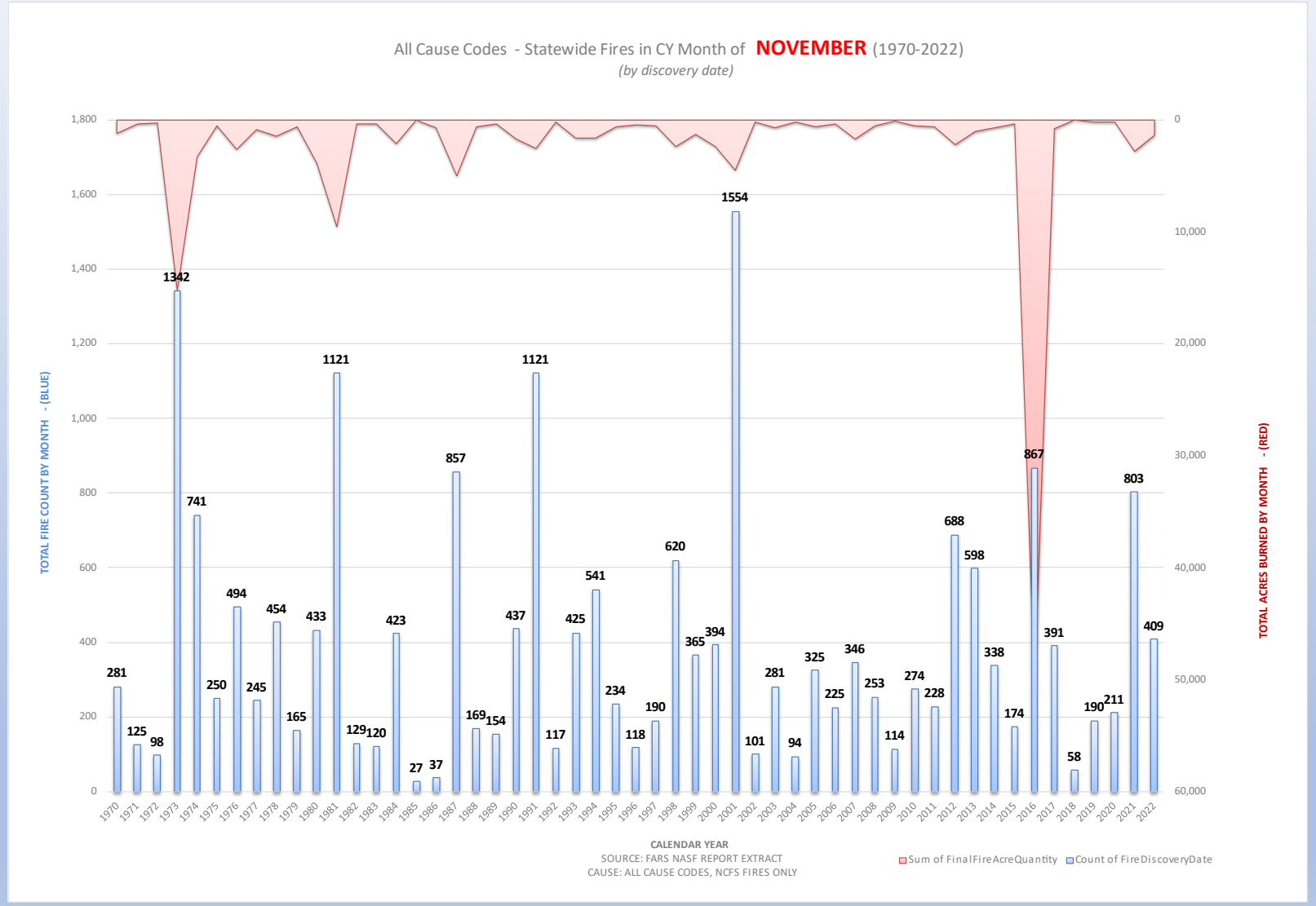

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10-Yr. Rolling Average for November: ~ 404 Fires for 5,763 Acres

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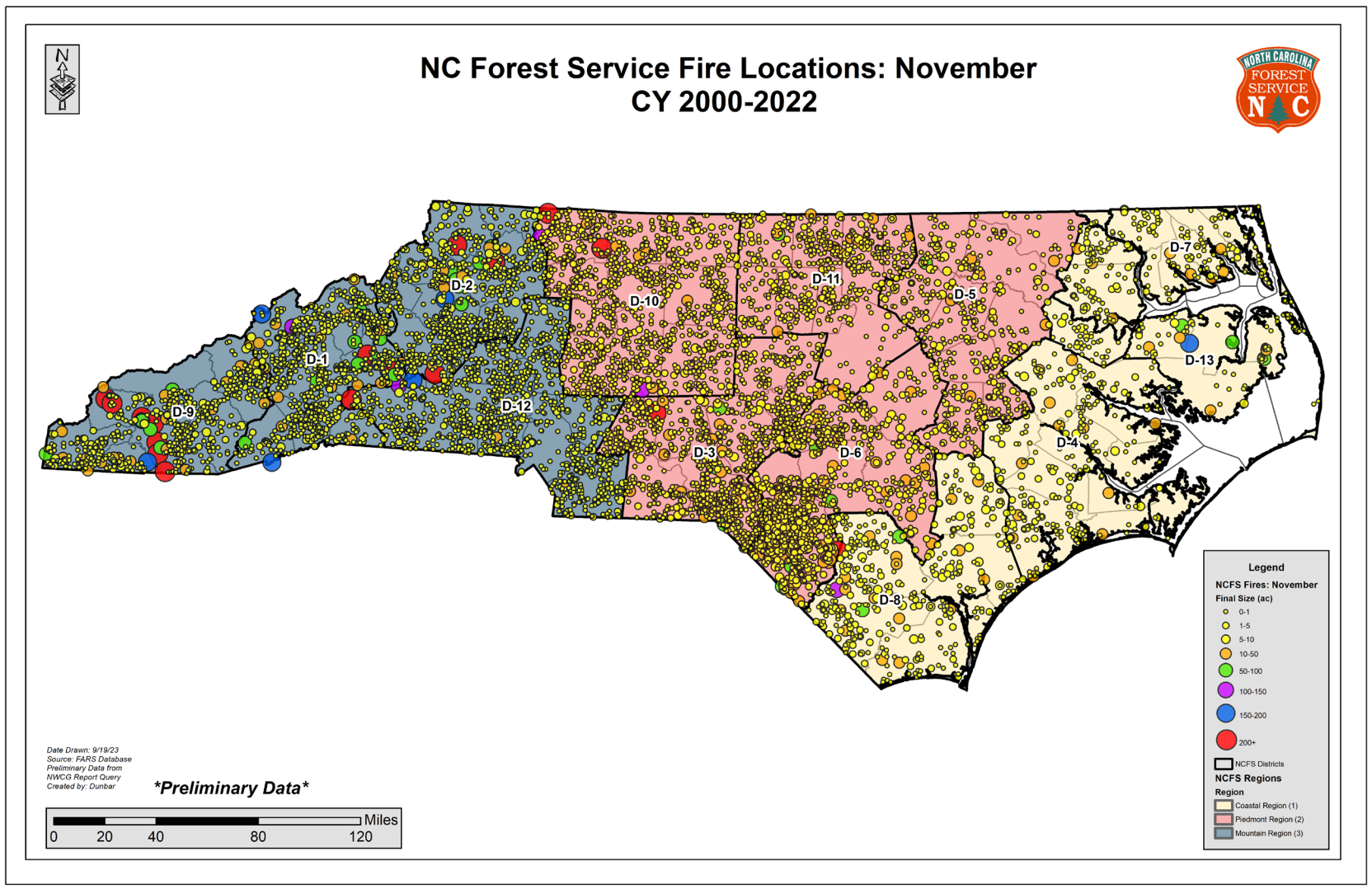


Cause: All Cause Codes, Statewide, NCFS Reported Fires Only

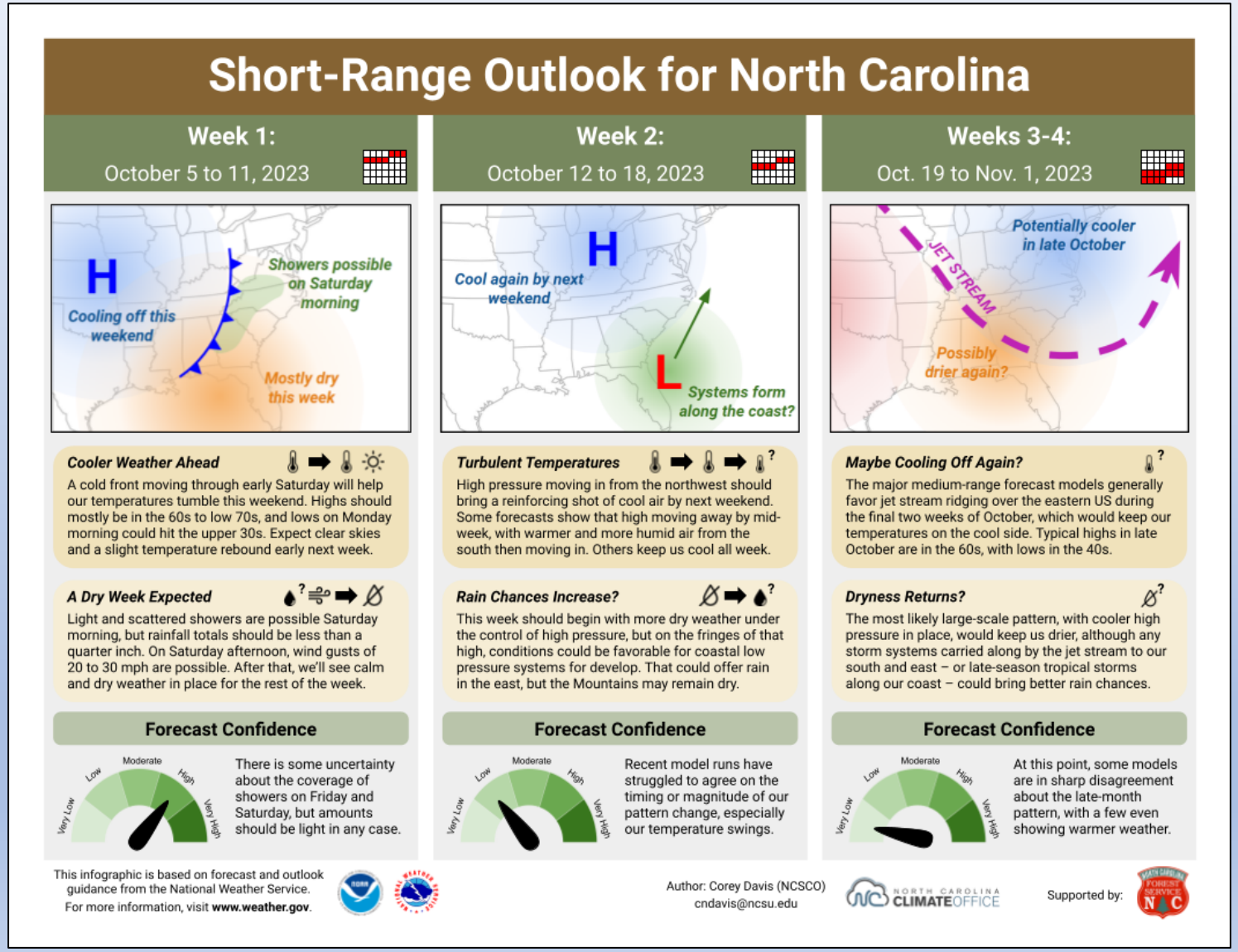
10-Yr. Rolling Average for November: ~ 404 Fires for 5,763 Acres

Fire Environment Slides

Summary at End

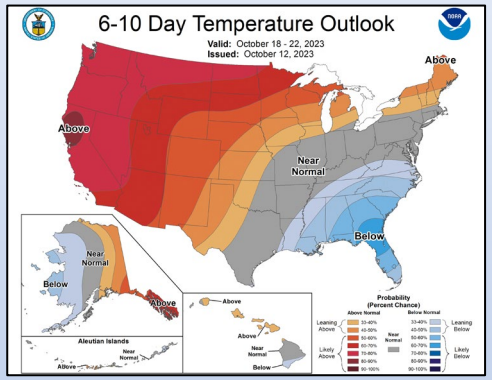
State Climate Office: Short-Range Monthly Outlook for NC

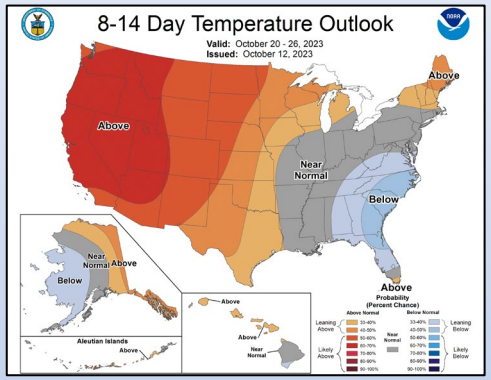
Released 10/5/23 & Location: https://climate.ncsu.edu/fire/outlooks/

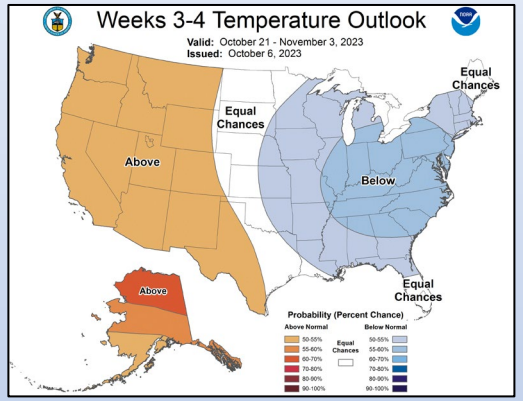


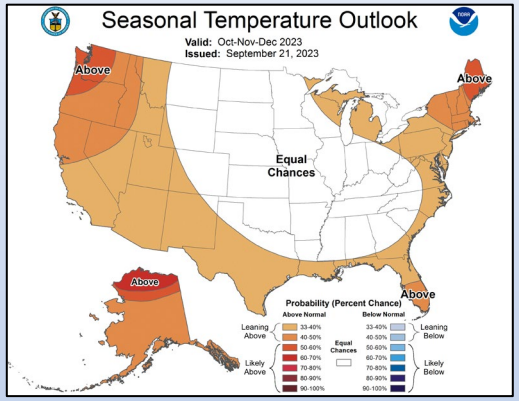
CPC Temp & Precip Outlook

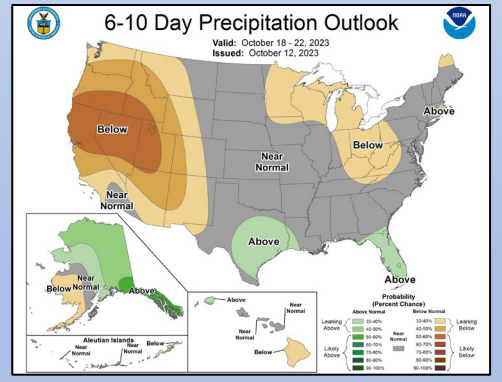
6-10 Day, 8-14 Day, Weeks 3-4, Seasonal

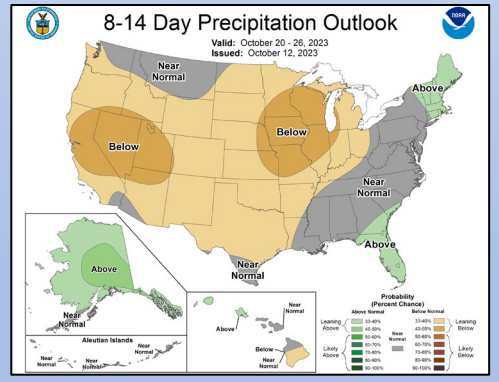


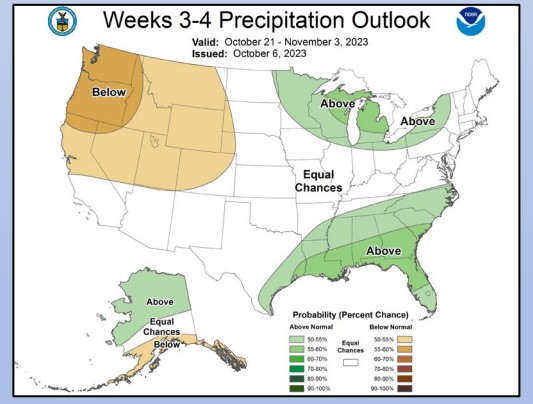


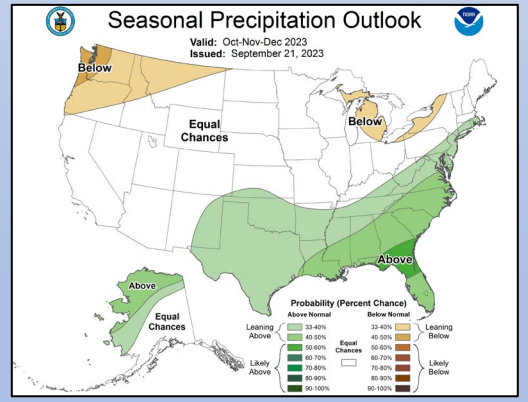






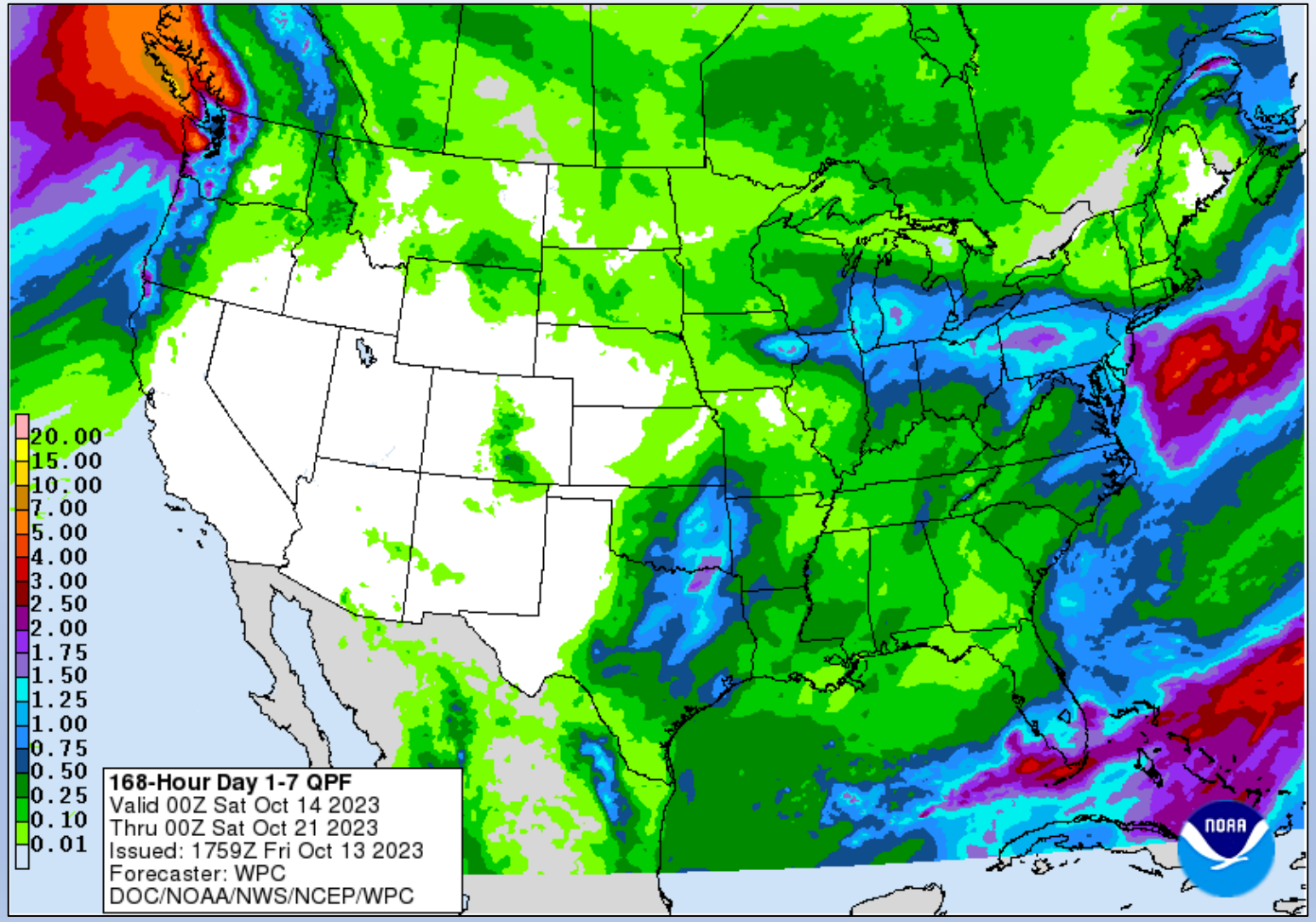






Source: https://www.cpc.ncep.noaa.gov/

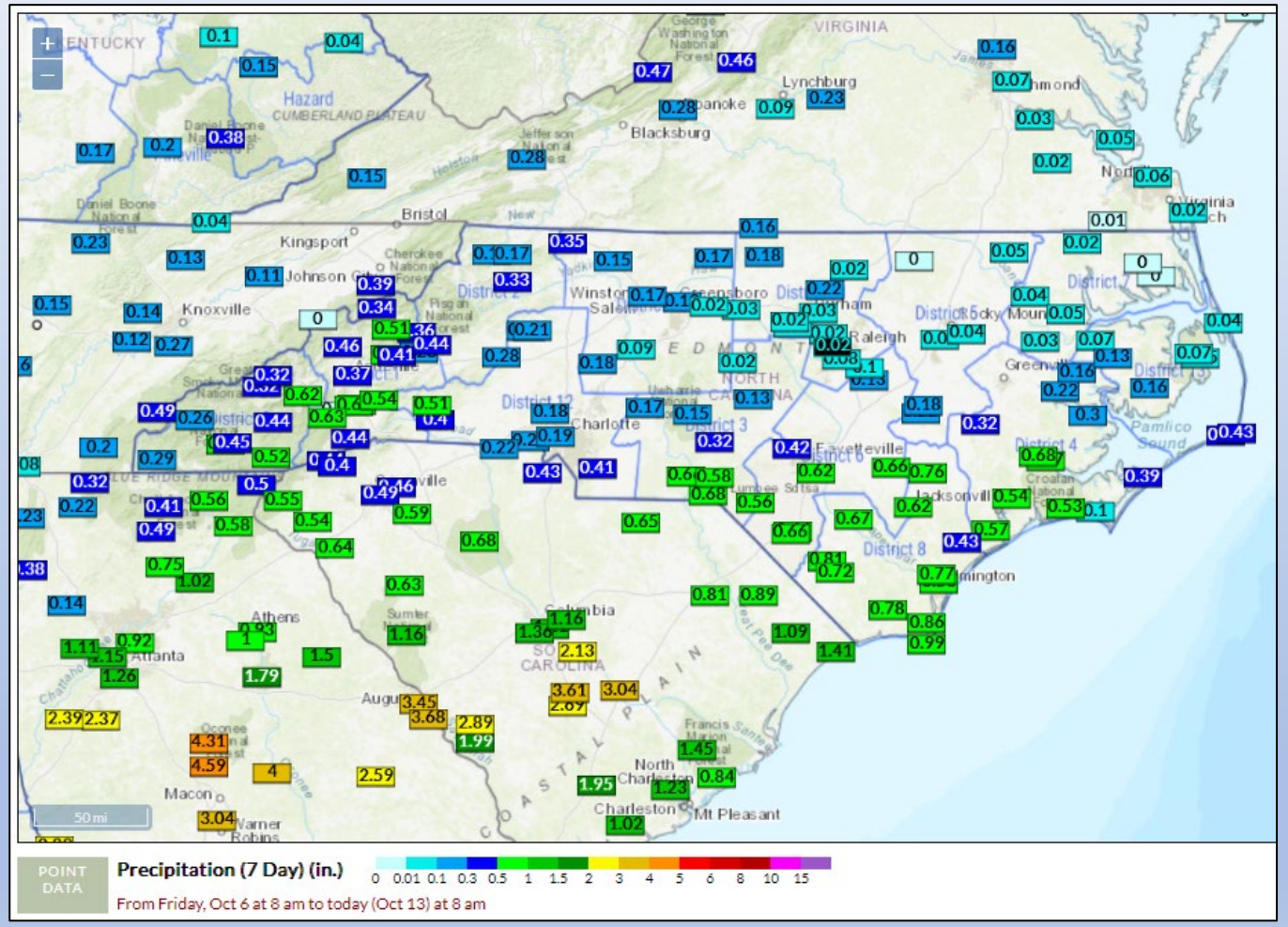
Quantitative Precipitation Forecast, 7-Day

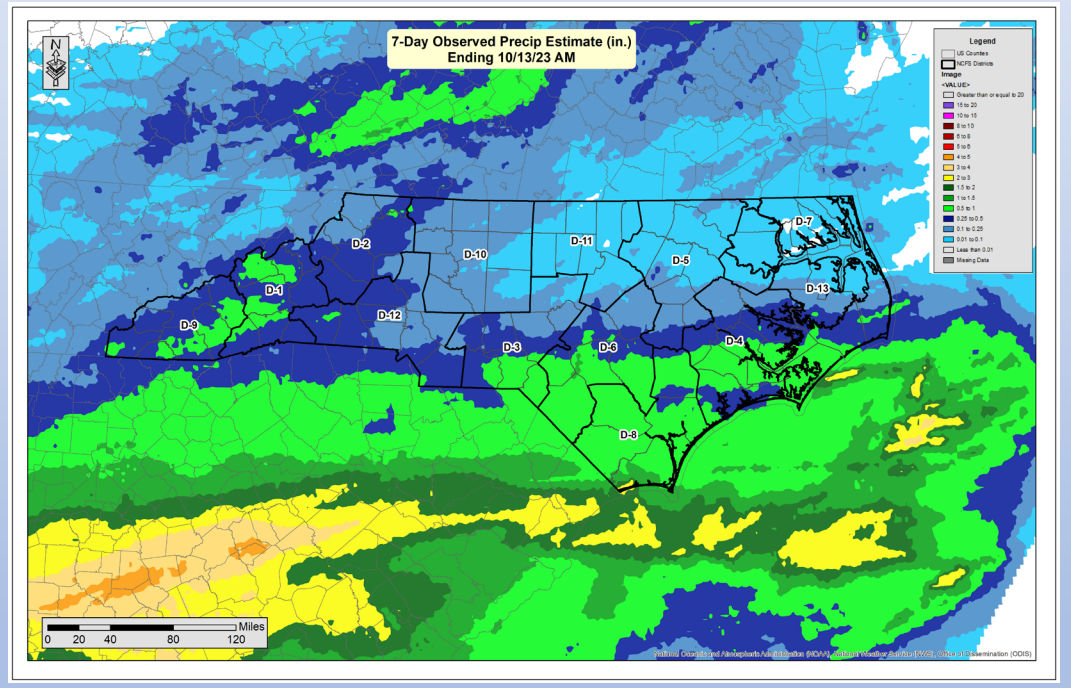


Location: https://www.wpc.ncep.noaa.gov/#

7 Day Precipitation Totals

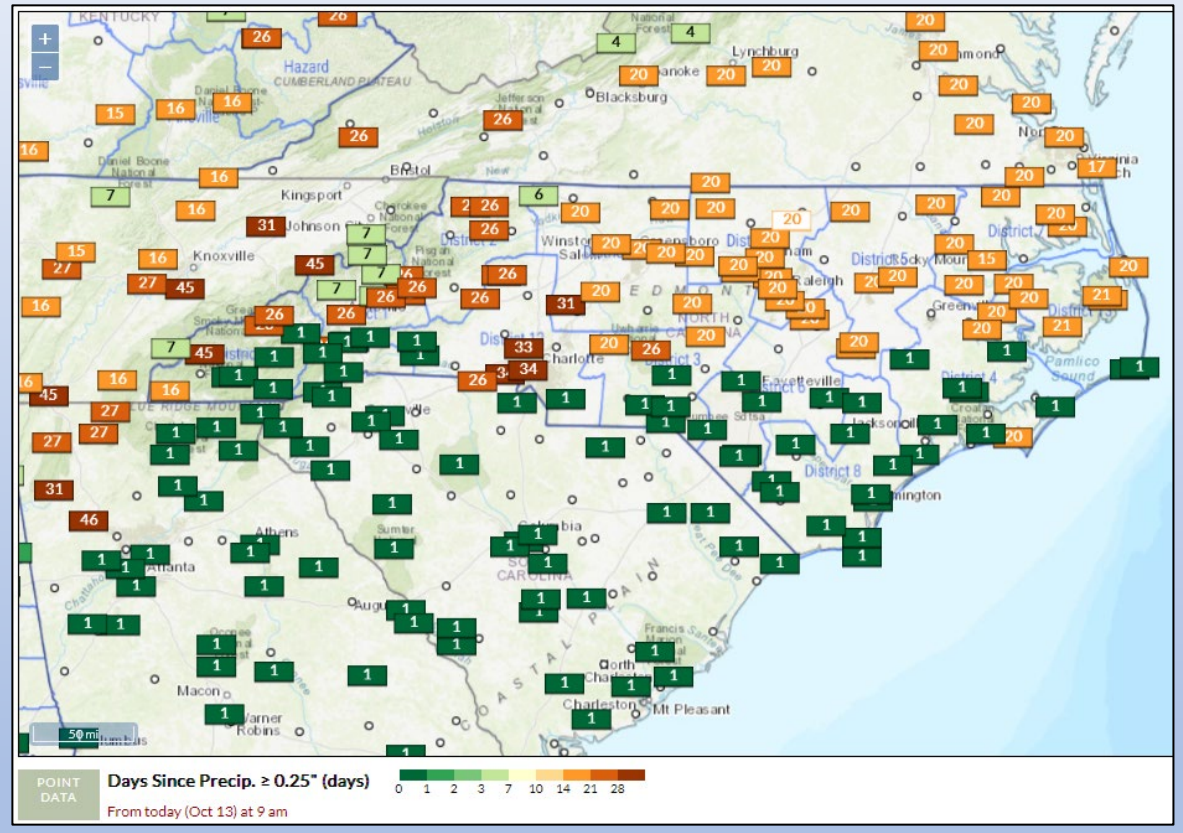
FWIP *(Point accumulation ending at 0800 on 10/13)*





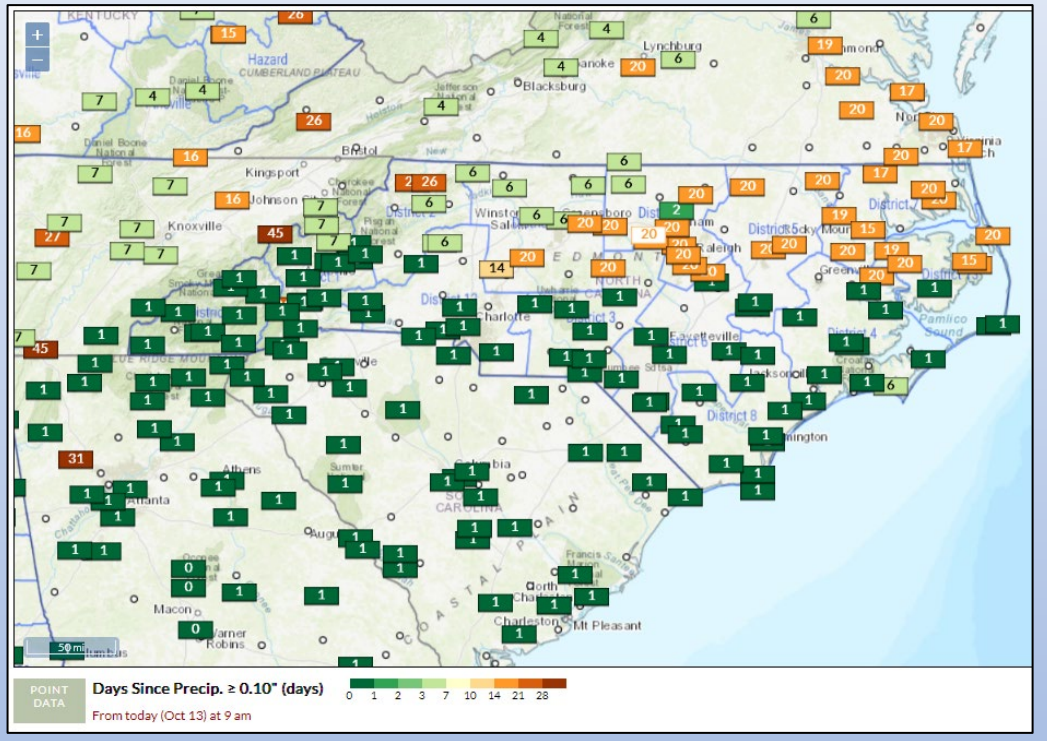
Days Since Wetting Rain ~ Precip ≥ 0.25”

FWIP *(Point calculation ending at 0900 on 10/13)*



Days Since Precip ≥ 0.10”

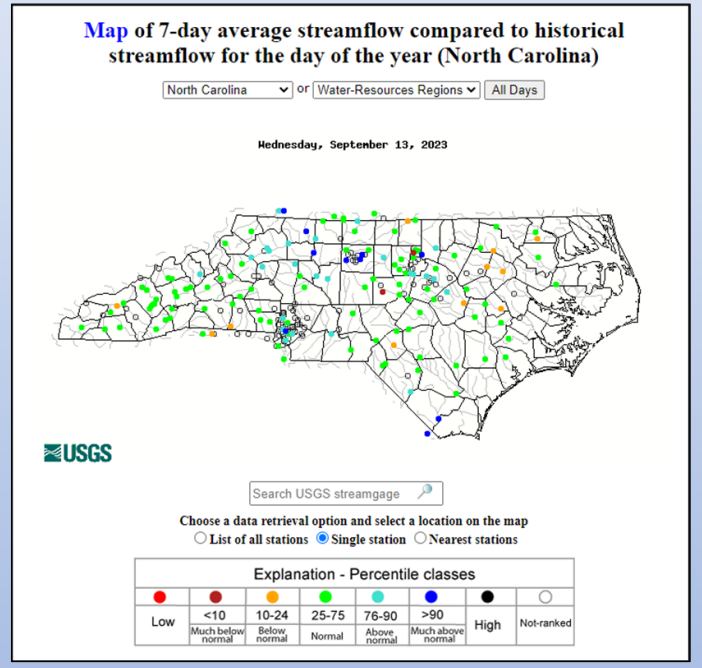
FWIP *(Point calculation ending at 0900 on 10/13)*



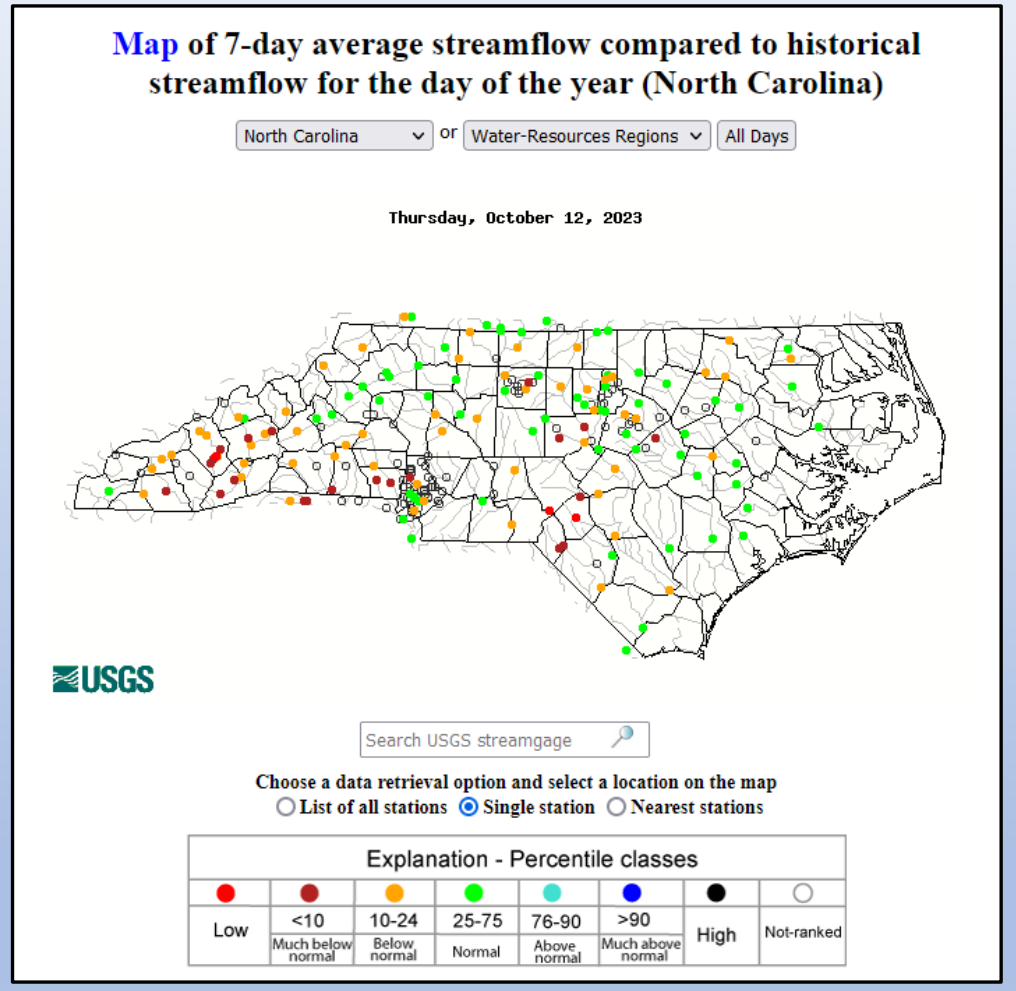
**DSR calculations for several stations may be impacted by potential bucket issues such as debris clogs.*

Streamflow:

- Last Month



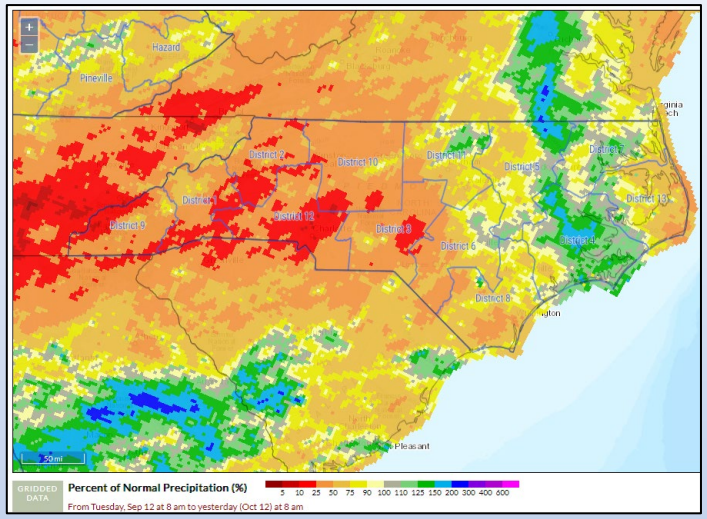
- Current Month



Source: https://waterwatch.usgs.gov/index.php?m=pa07d&r=nc&w=map

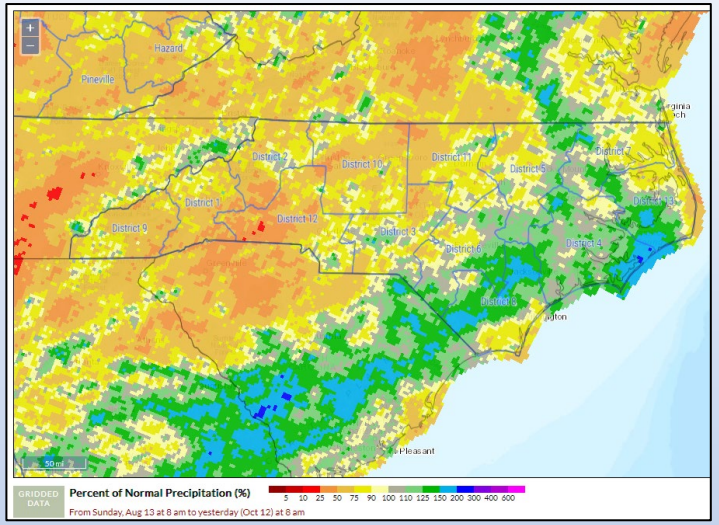
Percent of Normal Precip & SPI, *FWIP* *(Ending 0800 10/12)*

30-Day % of Normal



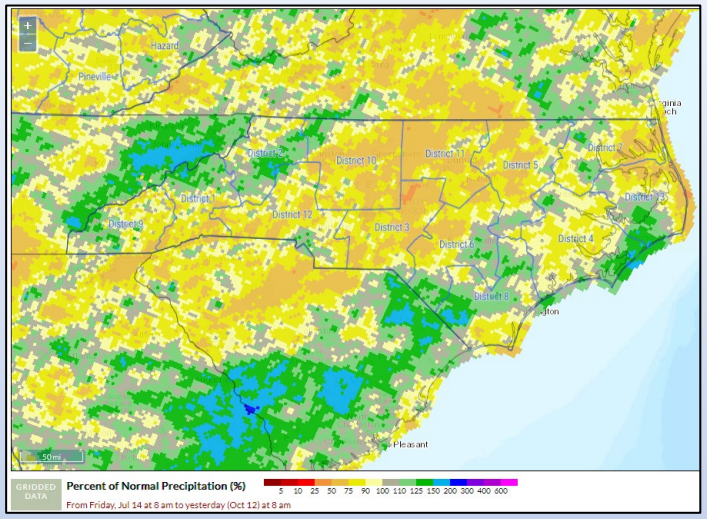
Most pronounced at the 1-Month scale with driest areas ~10% of Normal.

60-Day % of Normal



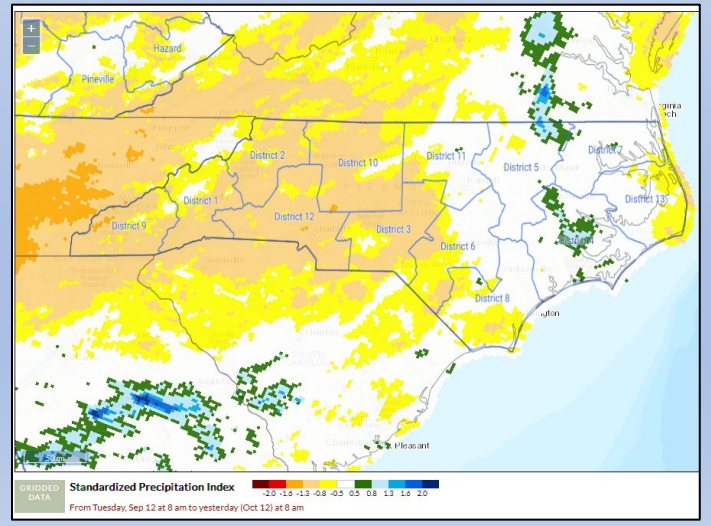
Dry conditions seen at variable time scales.

90-Day % of Normal

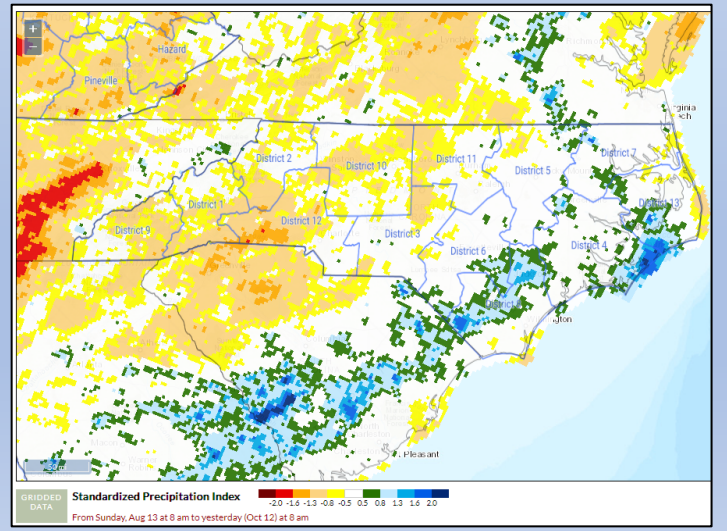


Still ≥ ~50% of Normal category at the 3-Month scale in the driest areas.

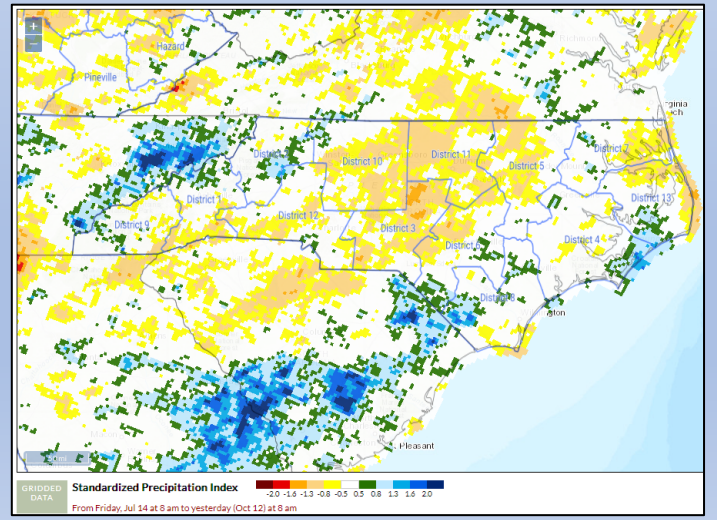
30-Day SPI



60-Day SPI



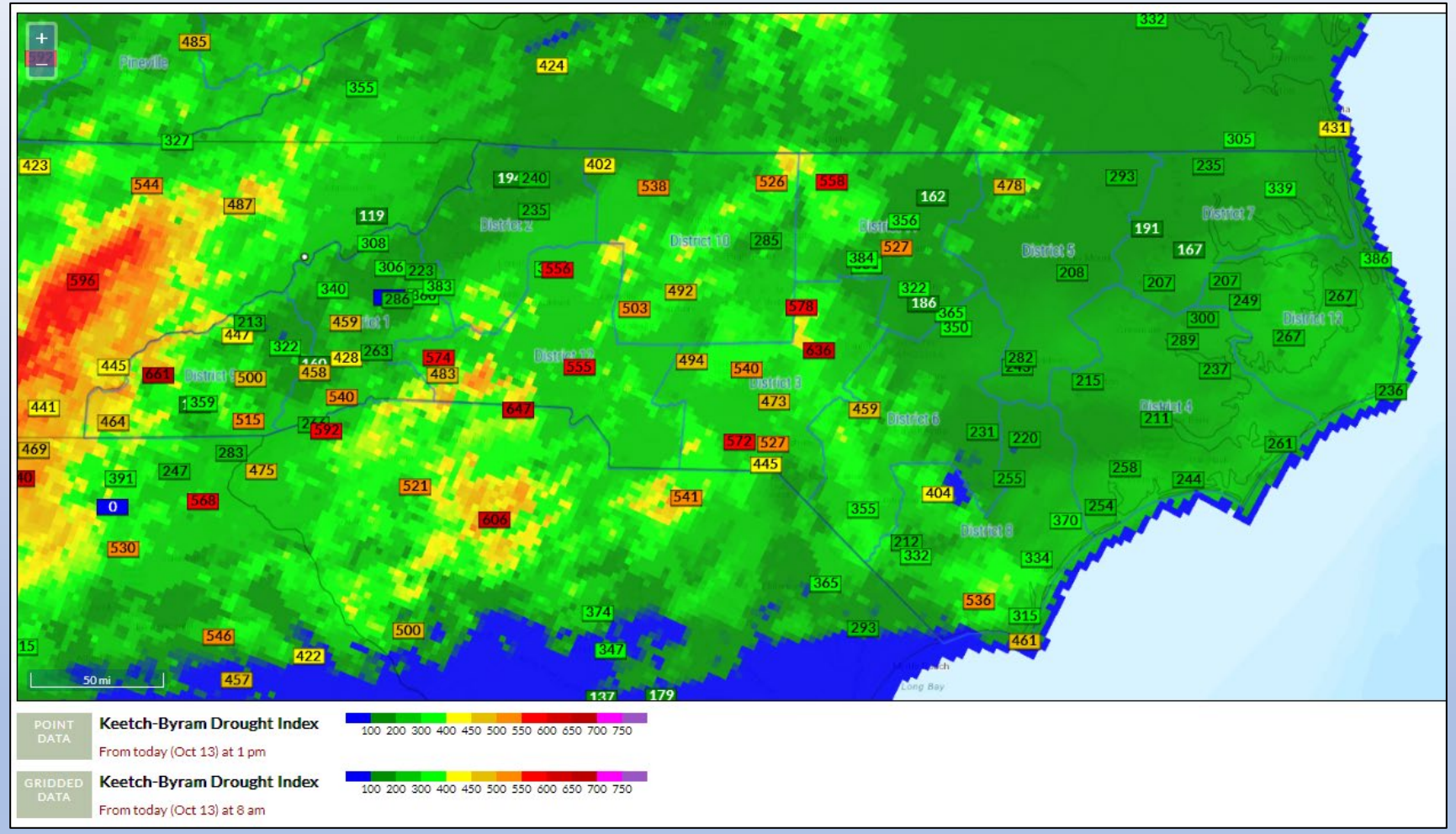
90-Day SPI



Description of Standardized Precipitation Index

KBDI - Gridded & Station Points

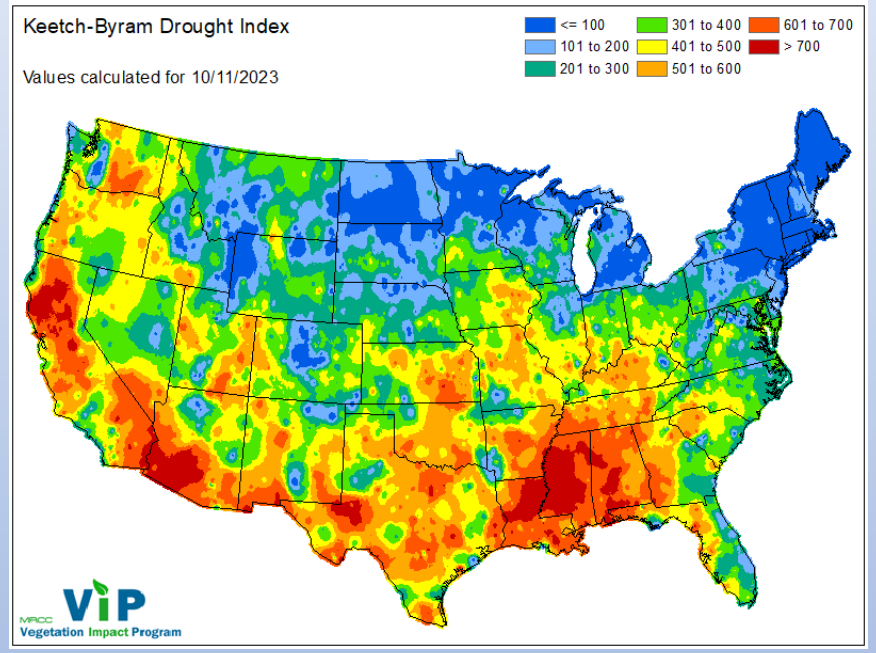
FWIP (Point calculation from WIMS @ 1300 on 10/13/23, SCO created Grid ending 0800 10/13/23)

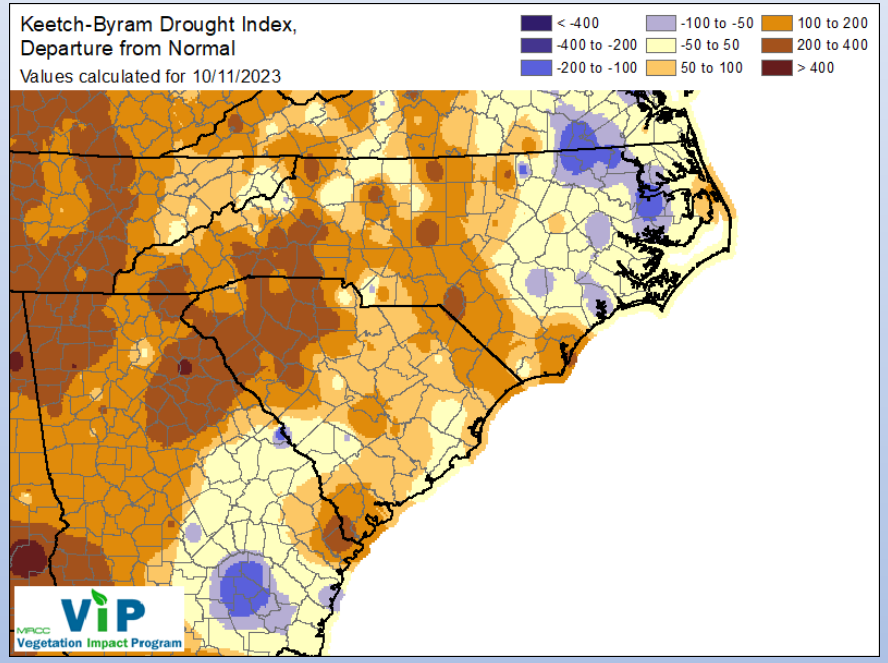


KBDI – Calculated Values & Estimated Departures from Normal

(From 10/11/23)

- *This product is created by the Midwestern Regional Climate Center. See FAQ.*





North Carolina Drought Update

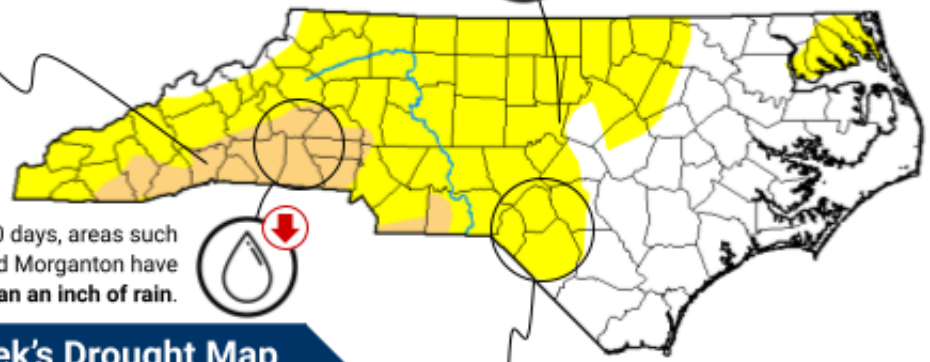
For the assessment period ending October 10, 2023

This Week's Drought Monitor of North Carolina Map

From the US Drought Monitor, authored by Brad Pugh (*NOAA/NWS/NCEP/CPC*) with input from the North Carolina Drought Management Advisory Council (ncdrought.org)

The **City of Hendersonville has advised customers to reduce water usage by 20%**, including limits on car washing and irrigation.

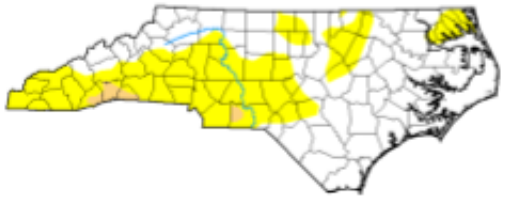
The **water quality storage at Jordan Lake**, from which downstream releases are made, **has fallen to just 70% of its full volume**.



Over the past 30 days, areas such as Hickory and Morganton have had **less than an inch of rain**.

With limited upstream rainfall, **streamflow levels have fallen below normal** across the Sandhills and parts of the southern Coastal Plain over the past week.

Last Week's Drought Map



This infographic was created by NORTH CAROLINA CLIMATE OFFICE

Statewide Condition Summary

What's Changed? Moderate Drought (D1) expanded in the southern Foothills, and Abnormally Dry (D0) conditions now cover the northern Mountains and Piedmont.

What's New? Rain showers last Friday totaled half an inch or less statewide, and much of the Piedmont and Coastal Plain has received little to no accumulating rain over the past two weeks. That dry start to October has signs of dryness appearing across the landscape, including trees dropping leaves early and streamflows running low.

What's Next? Rain is possible ahead of a front moving in on Friday night and Saturday, but totals should again be light, with less than half an inch expected in most areas.

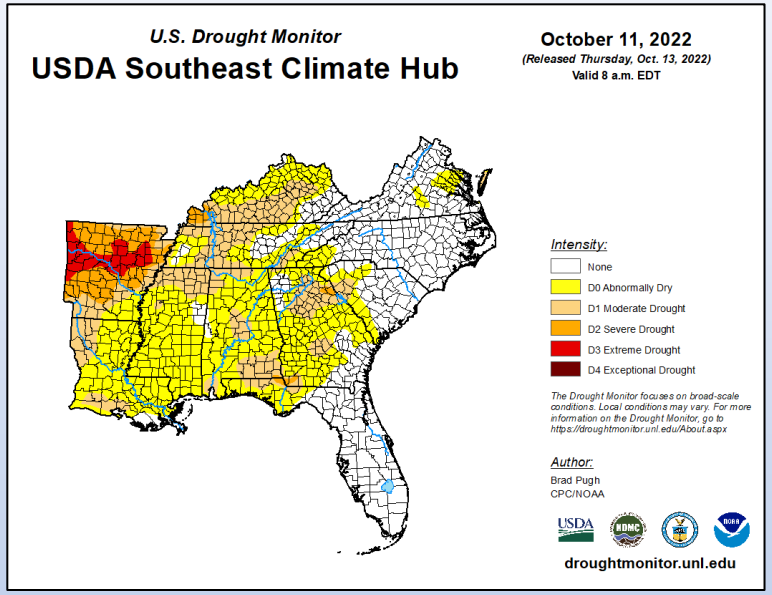
Statewide Coverage By Category

Category	Coverage This Week	Change Since Last Week
D0: Abnormally Dry	52.35%	+12.84%
D1: Moderate Drought	9.26%	+7.70%
D2: Severe Drought	0.00%	0.00%
D3: Extreme Drought	0.00%	0.00%
D4: Exceptional Drought	0.00%	0.00%

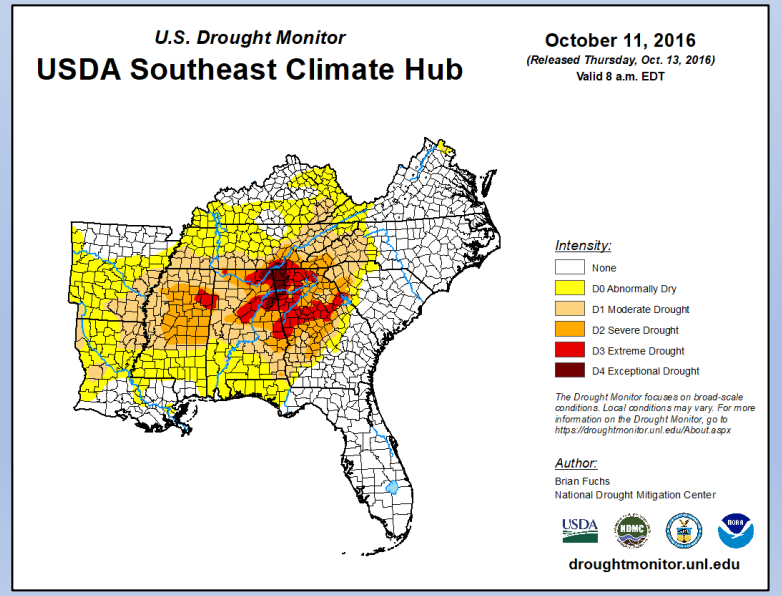
Drought Monitor (USDM)

- "D0" Abnormally Dry Designation now for ~52% of State (12% increase from last week)
- "D1" Moderate Drought Designation now ~9% of State (7.7% increase from last week)
- *The USDM map is released every Thursday morning, with data valid through Tuesday at 7am Eastern.*

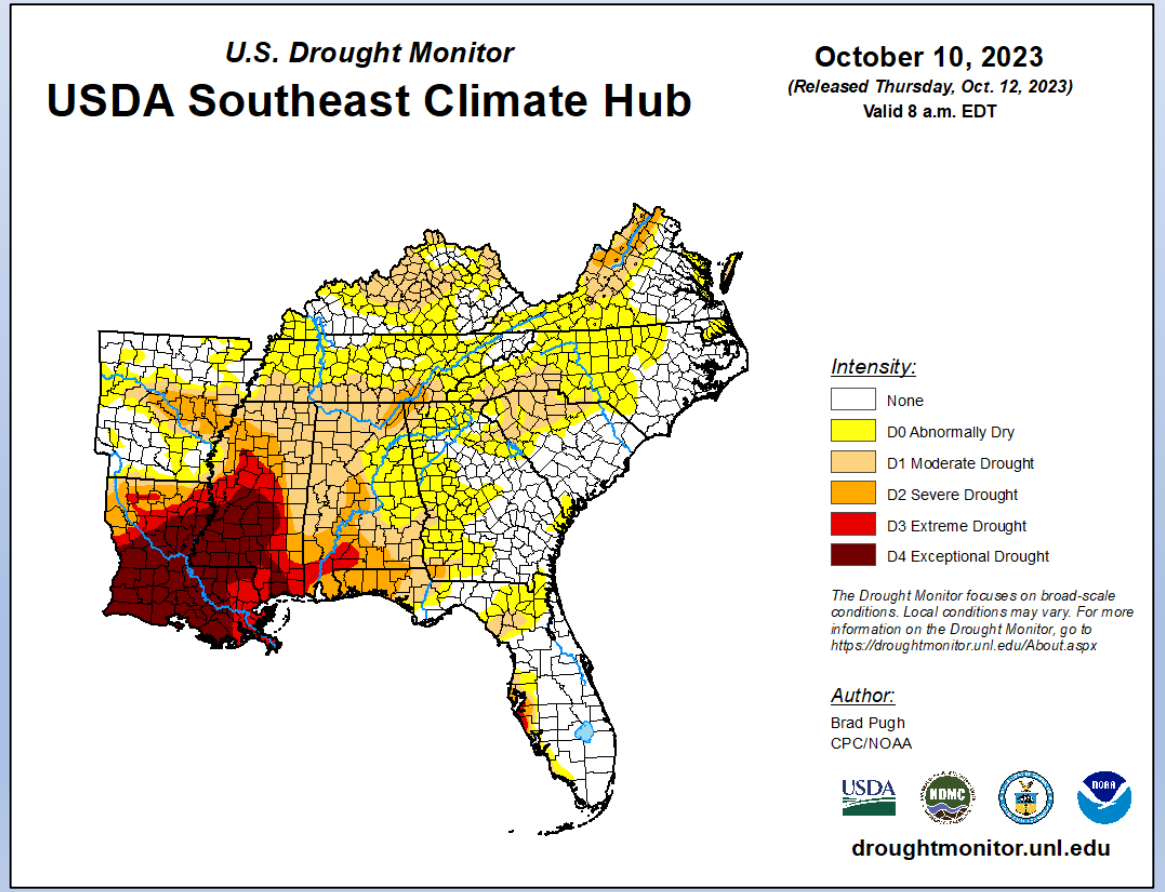
Oct - 2022:



Oct - 2016:



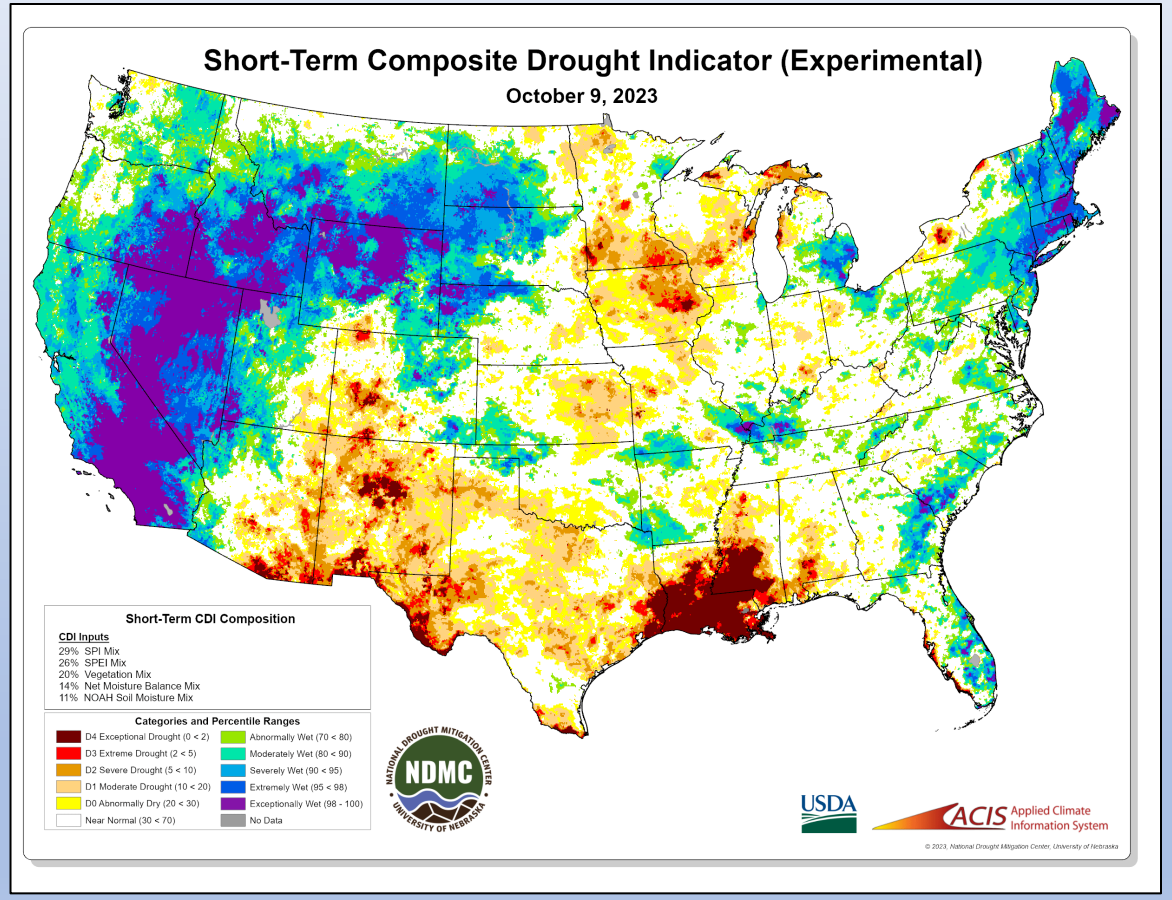
Current Week:



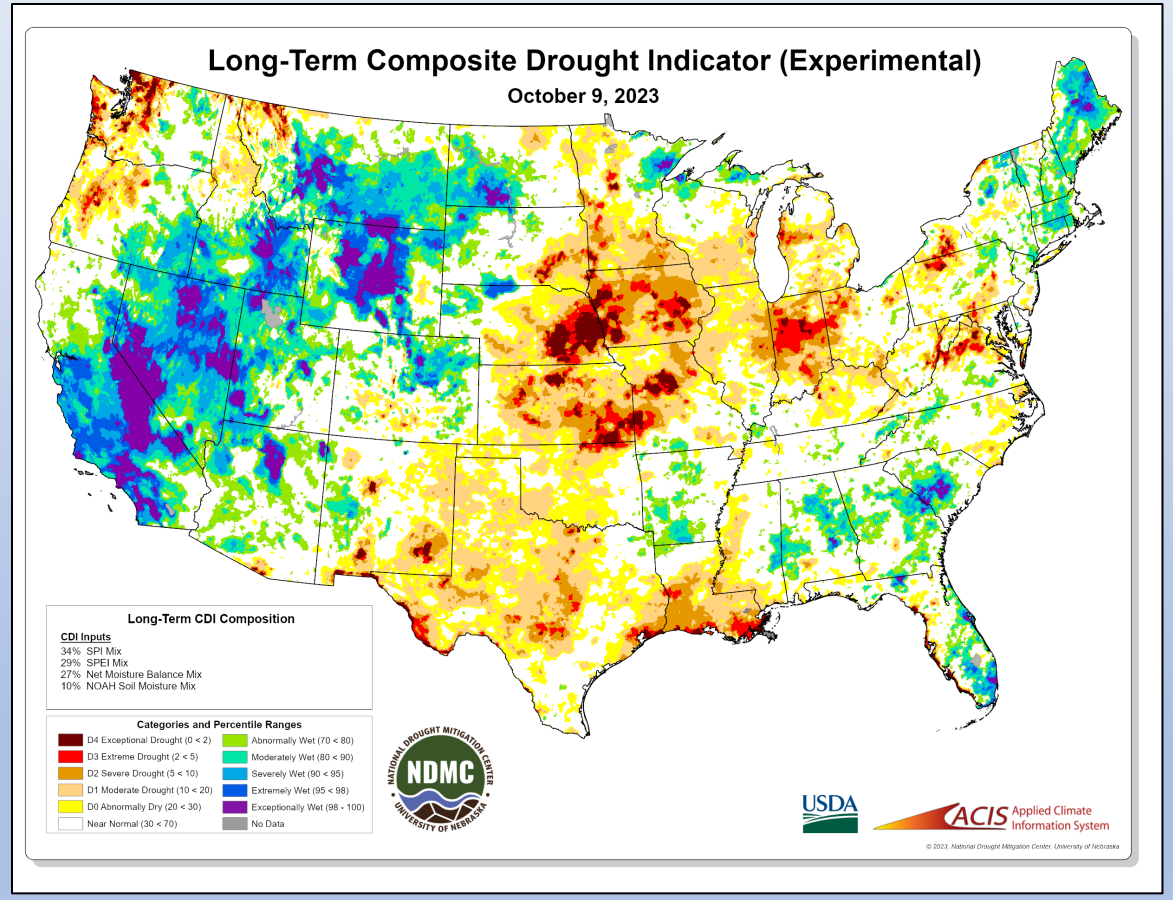
Sources: https://droughtmonitor.unl.edu/Maps/CompareTwoWeeks.aspx

Modeled Relative Soil Dryness

NDMC Short-term Drought Blend (10/9/23)



NDMC Long-term Drought Blend (10/9/23)

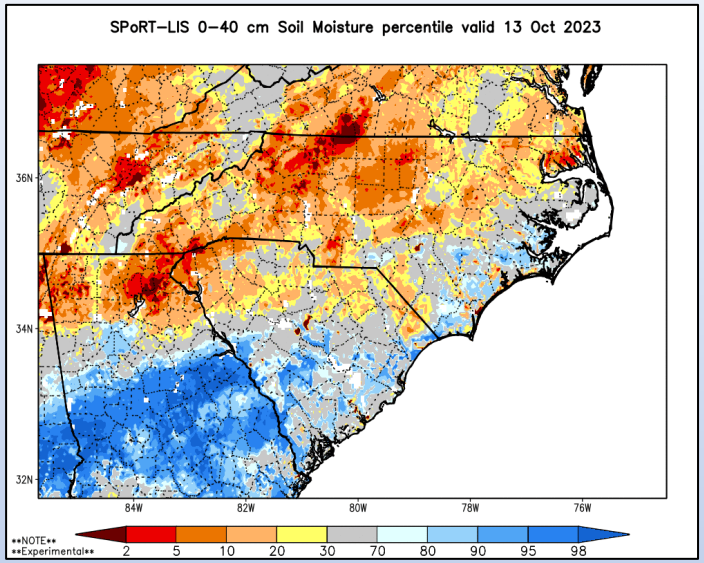


Source: https://ndmcblends.unl.edu/Home.

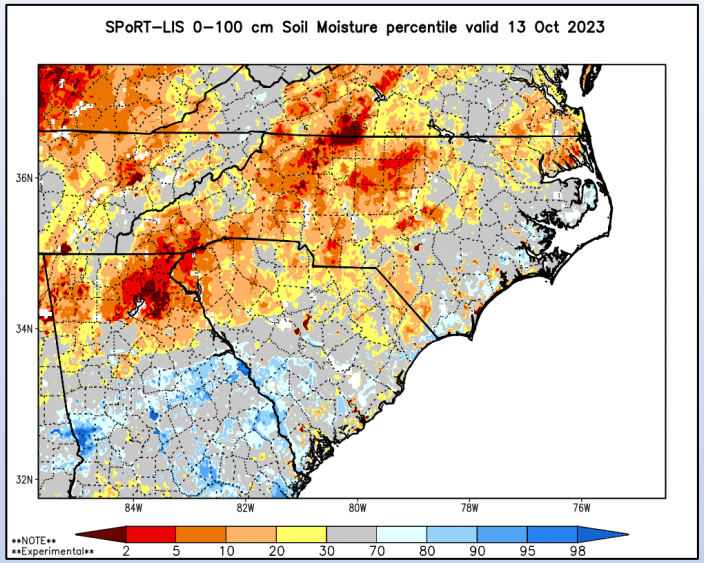
NASA SPoRT-LIS Soil Moisture

10/13/23

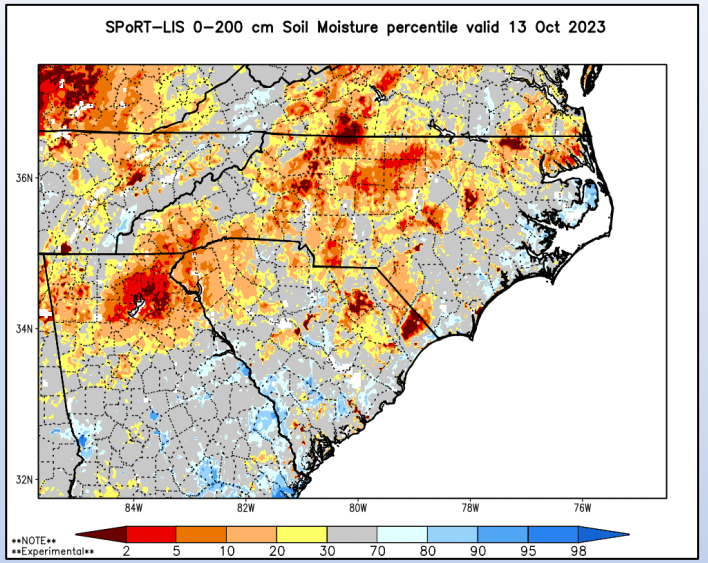
0-40cm Percentile



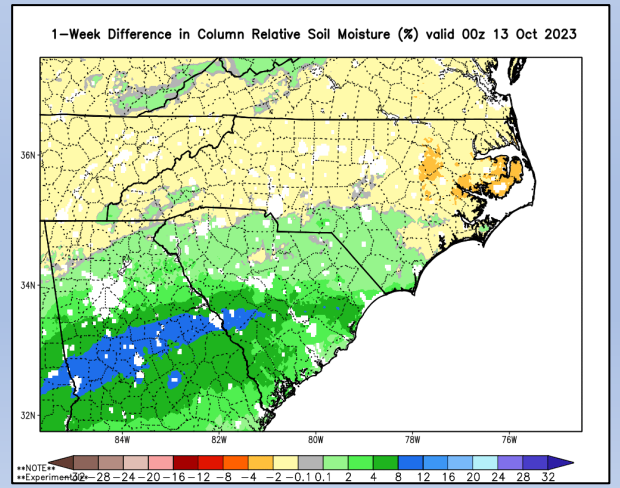
0-100cm Percentile

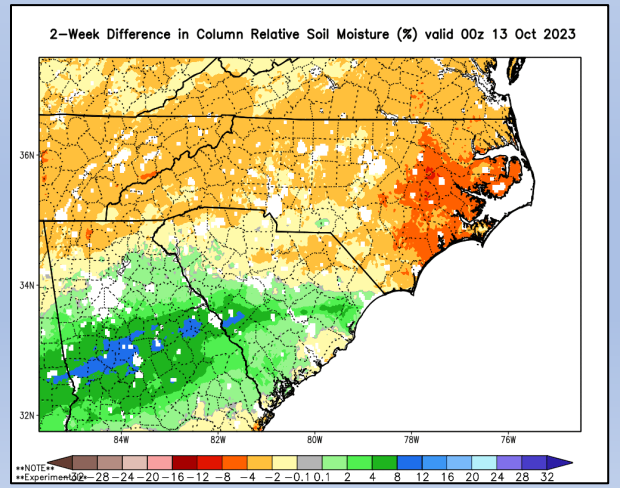


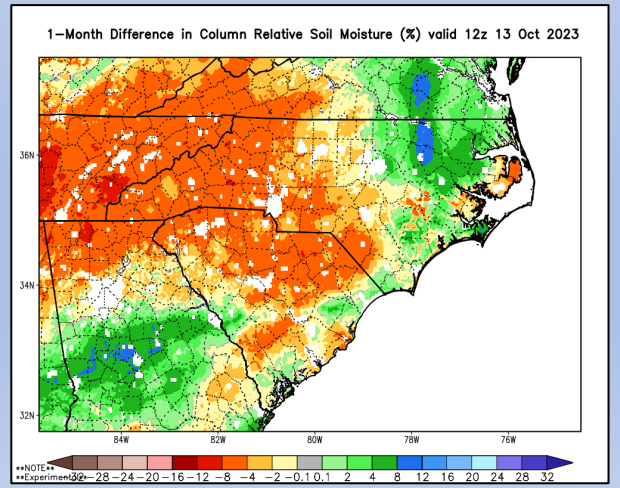
0-200cm Percentile

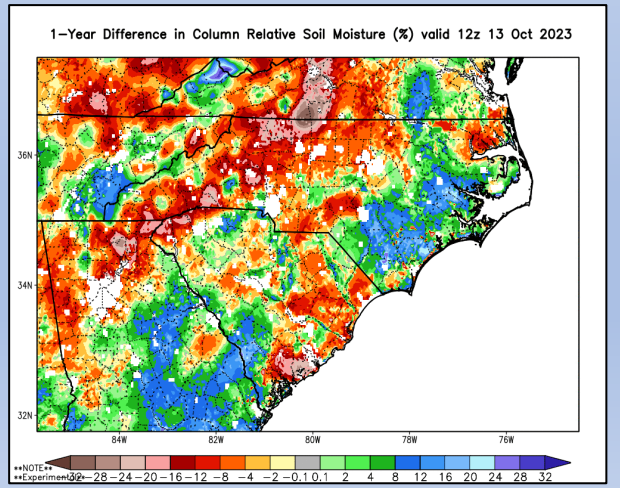


**Modeled dryness continuing to expand, especially shallow.*





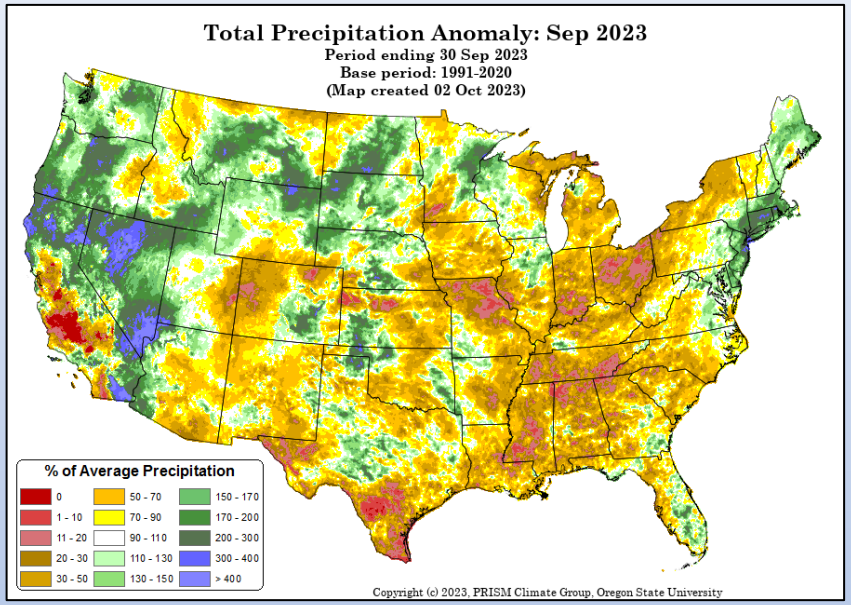


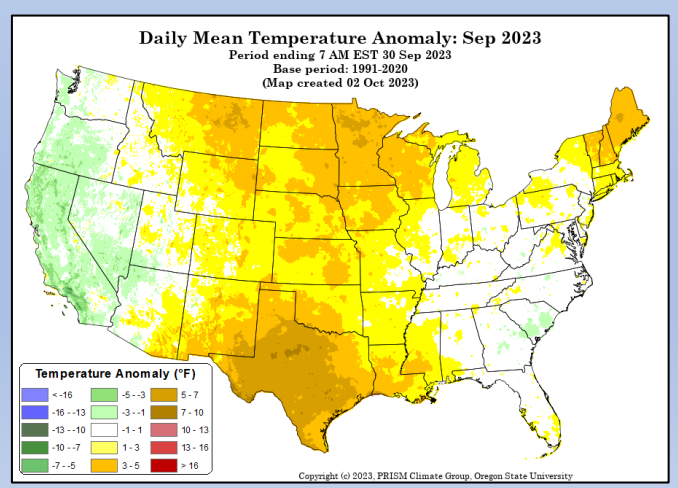


Precip and Temp Anomalies – US Context

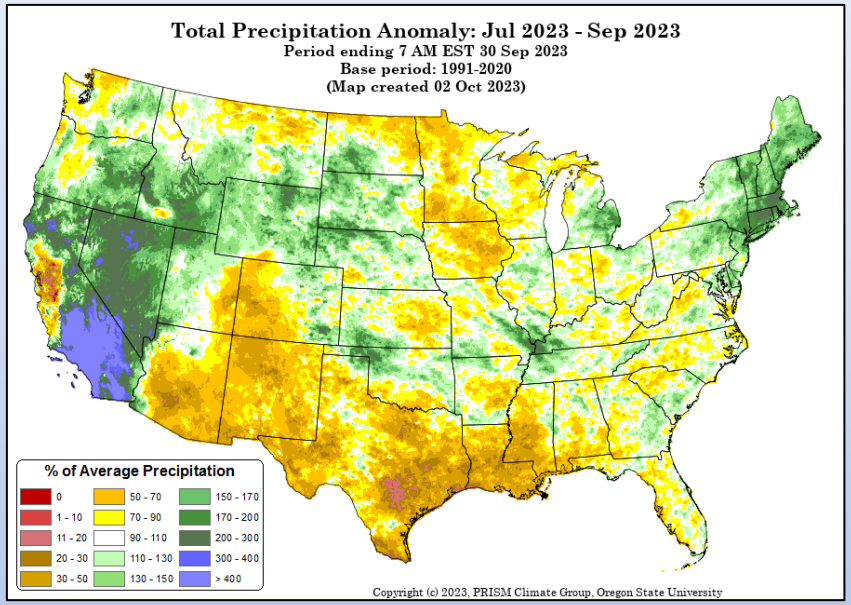
Source: https://prism.oregonstate.edu/mtd/

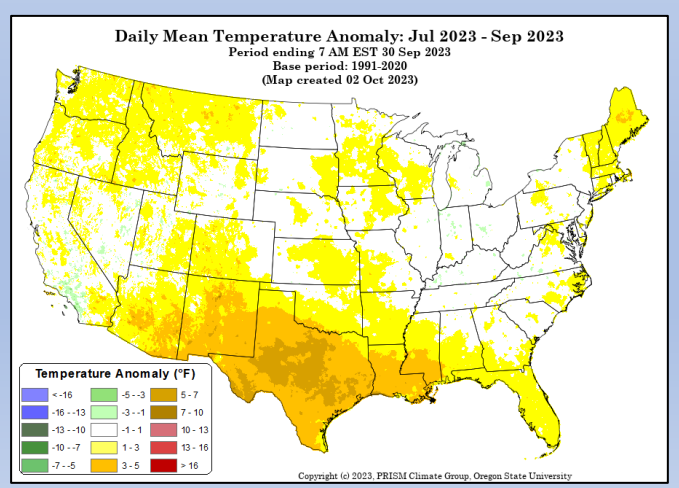
1-Month Comparison (Sept 23’)





3-Month Comparison (July-Sept 23’)



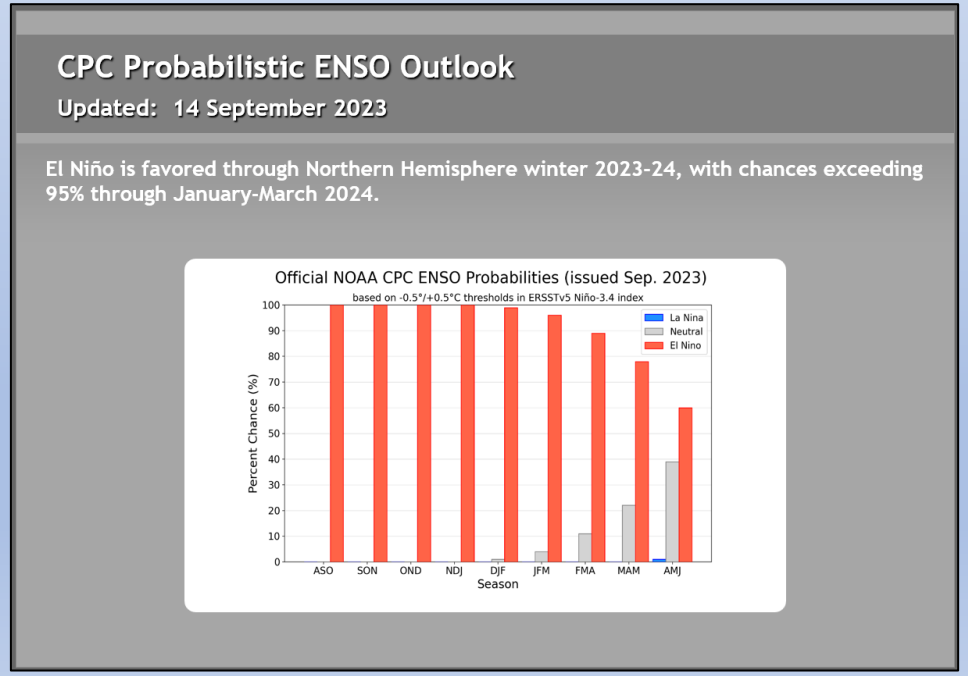


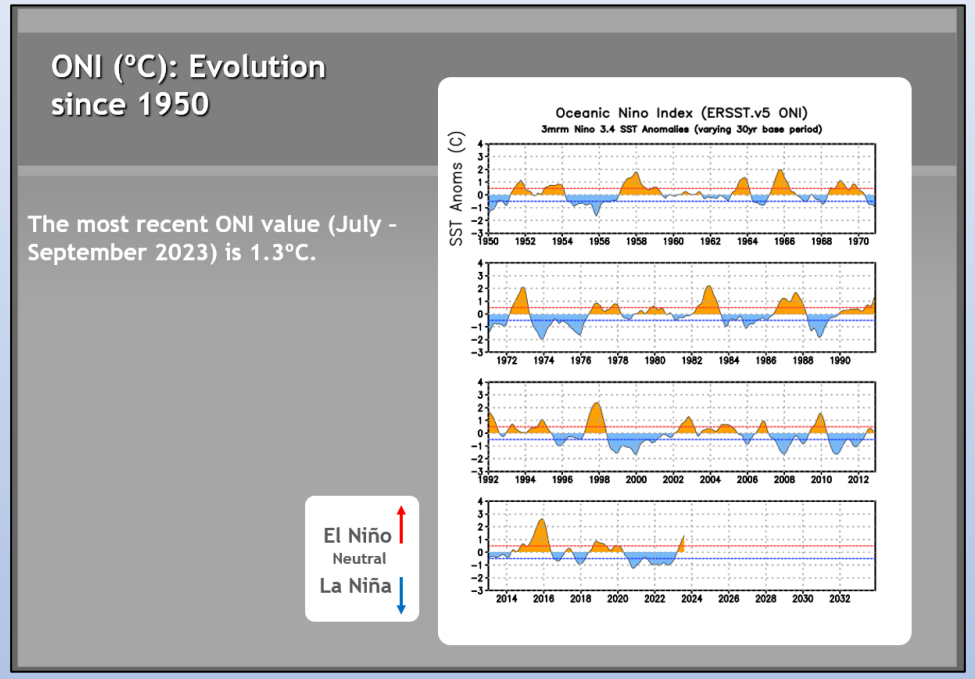
ENSO Notes from the CPC (10/12/23 Update)

ENSO Alert System Status: **El Niño Advisory**

El Niño is anticipated to continue through the Northern Hemisphere spring (with an 80% chance during March-May 2024).

ENSO, or El Nino Southern Oscillation, is a fluctuation in the sea surface temperature (SST) in the equatorial Pacific Ocean. Research has shown that even slight changes in the SST, particularly in area 3.4, can influence weather in North America. Generally, when SSTs are lower than normal, known as La Nina, NC has drier than normal conditions and can have more fire occurrence. However, La Nina also can lead to more tropical activity. El Nino, on the other hand, usually means wetter weather for NC, but less opportunity for tropical landfalls due to increased wind shear. In order to declare a La Nina, the departure from average SST must be at least -0.5^{o} C (line shown in green) for 3 consecutive months. For El Nino, the departure must be at least 0.5^{o} C above average for 3 consecutive months.





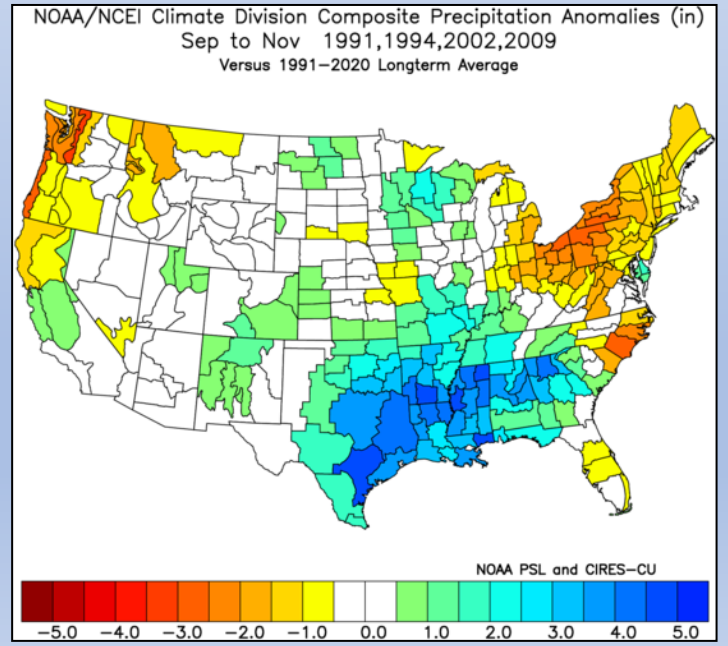
Diagnostic Discussion:
https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml

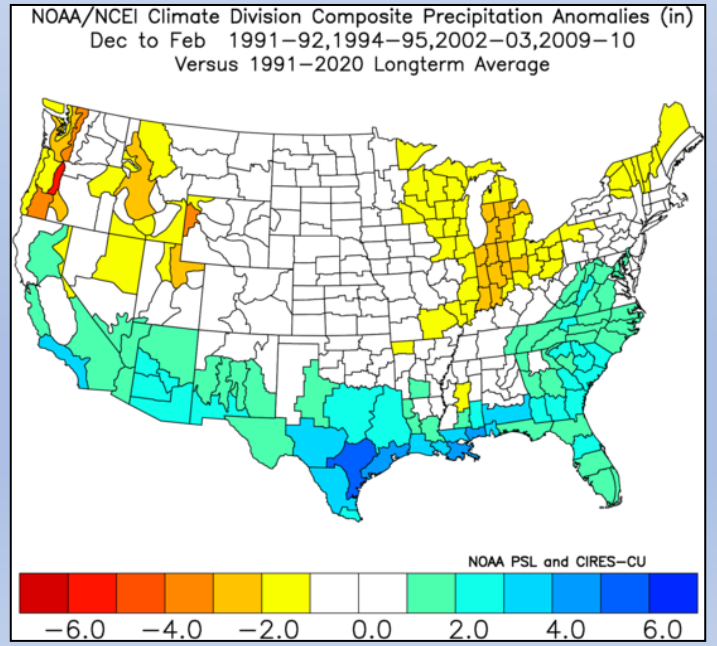
Slide Source: *https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.ppt*

Misc. El Niño Discussion

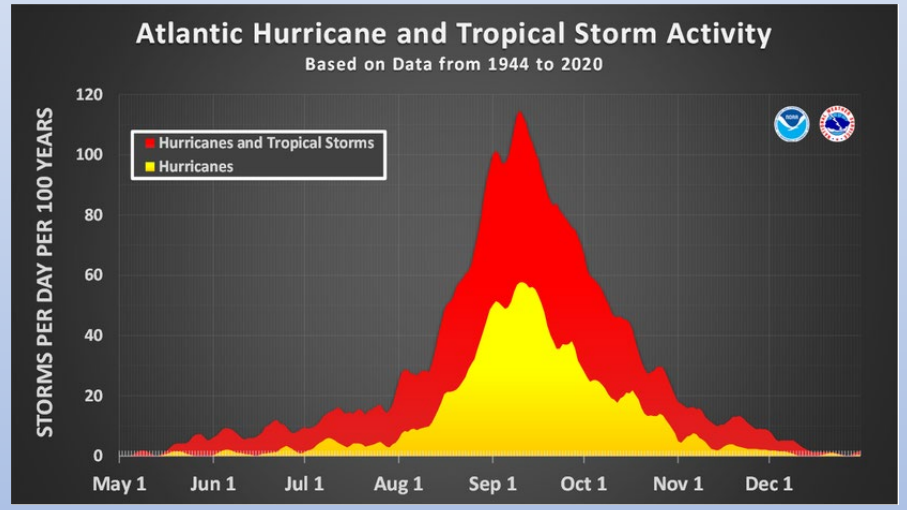
- Influence from an El Niño event generally becomes more pronounced into the winter and has fewer direct impacts in the summer of development.
- We often see warmer & drier conditions develop from summer into fall before the typical transition to a “wet” winter.
- There are no exact/close analogs & the strength of the developing event and exact timing of any potential pattern change is not certain.
- From CPC Diagnostic Discussion: Favoring at least a "strong" event with a 75-85% chance through November-January (≥ 1.5°C for the seasonal average in Niño-3.4). There is a 3 in 10 chance of a "historically strong" event that rivals 2015-16 and 1997-98 (seasonal average ≥ 2.0°C).
- NC SCO provided some insights/examples looking at El Niño events in the +1 to +2°C range within the past ~30 years: 1991-92, 1994-95, 2002-03, and 2009-10.

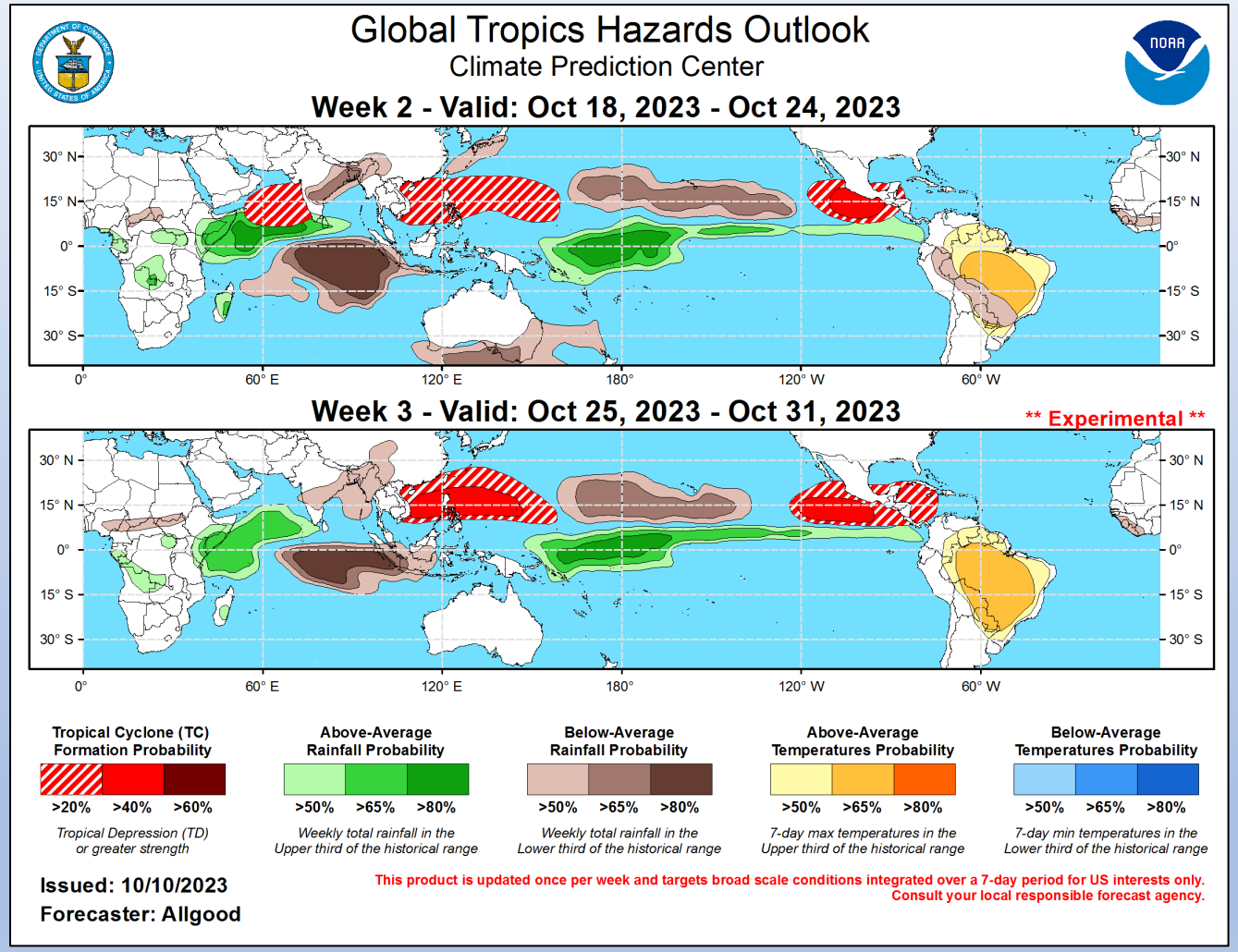
(The graphics show the fall and winter climate division-based precipitation anomalies look like for those four events.)





Tropical Hazards Outlook





https://www.cpc.ncep.noaa.gov/products/precip/CWlink/ghaz/index.php

Fire Danger Related Materials

including Self-Briefing & Situational Awareness Links

Daily WIMS Observations and NFDRS Estimates

Averaged by FDRA SIG Group

This is available on the FWIP at: https://products.climate.ncsu.edu/fwip/nfdrs.php?data=ob&state=NC

- The averaged values are derived from the SIG Station Outputs for a particular FDRA
  (SIG station names shown in bold on the live link above)

- You can toggle the percentiles on/off, displaying below the actual calculated values
  these percentiles are based on analysis of "All Days" for entire calendar year range through 2021 for these stations

Daily Observations for 10/12/23

Averages by FDRA

FDRA	STATION_COUNT	NFDR_DATE	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
Southern Highlands	3	2023-10-12	18.63 24.1%	6.87 21.9%	1.23 27.6%	8.57 52.3%	446.00	18.15 68.8%	26.15 87.5%	19.16 46.0%	22.12 76.3%	202.87	168.00	64.7°F	65.0%	ESE 5.3 mph	0.33 in.	6.7
Central Mountains	3	2023-10-12	12.23 17.1%	6.20 18.3%	0.83 26.3%	3.83 21.8%	408.67	17.70 70.4%	26.14 89.3%	20.20 62.9%	22.20 83.1%	250.00	200.00	68.0°F	63.7%	ESE 1.7 mph	0.32 in.	6.0
Northern Highlands	2	2023-10-12	18.35 29.9%	7.15 26.3%	1.30 34.2%	7.20 45.0%	263.00	16.82 64.0%	24.70 86.5%	20.45 63.1%	22.85 91.2%	250.00	200.00	67.0°F	62.5%	ESE 2.5 mph	0.11 in.	3.0
Blue Ridge Escarpment	3	2023-10-12	19.43 22.9%	10.33 25.2%	1.57 30.4%	5.70 25.7%	397.33	15.91 68.3%	23.96 80.6%	19.90 58.2%	20.25 50.8%	203.23	168.00	73.0°F	53.0%	S 2.3 mph	0.16 in.	4.3
Western Piedmont	3	2023-10-12	7.17 10.0%	4.37 11.9%	0.30 12.3%	1.63 9.4%	477.00	21.38 85.3%	26.42 90.4%	19.84 72.4%	21.27 76.6%	196.47	162.33	72.7°F	61.0%	SE 3.7 mph	0.08 in.	3.3
Sandhills	3	2023-10-12	1.20 7.1%	1.57 6.4%	0.00 11.7%	0.63 9.8%	486.33	25.32 90.2%	31.23 97.3%	18.47 40.5%	21.65 86.8%	250.00	200.00	68.3°F	73.0%	ENE 3.3 mph	0.41 in.	8.0
Eastern Piedmont	4	2023-10-12	5.60 7.1%	2.68 9.2%	0.25 10.9%	2.03 6.2%	230.25	20.67 86.3%	27.12 92.9%	19.53 68.6%	22.27 89.0%	250.00	200.00	70.0°F	67.0%	SE 2.8 mph	0.04 in.	2.5
Southern Coastal	7	2023-10-12	0.00 3.2%	0.00 4.1%	0.00 9.3%	0.00 3.1%	298.71	32.75 98.6%	32.28 98.7%	20.90 71.9%	22.62 88.7%	162.46	166.14	64.0°F	91.9%	ENE 4.3 mph	0.53 in.	9.9
Northern Coastal	4	2023-10-12	7.05 9.2%	4.58 12.8%	0.23 12.2%	1.58 8.1%	255.50	22.58 87.1%	25.99 90.1%	19.74 64.9%	22.39 81.5%	109.33	139.50	67.8°F	75.3%	ENE 1.3 mph	0.04 in.	2.0

Page took 1.91 seconds to load

Daily WIMS Forecast Observations and NFDRS Estimates

Averaged by FDRA SIG Group
This is available on the FWIP at: https://products.climate.ncsu.edu/fwip/nfdrs.php?data=fc

- The averaged values are derived from the SIG Station Outputs for a particular FDRA
  (SIG station names shown in bold on the live link above)

- You can toggle the percentiles on/off, displaying below the actual calculated values
  these percentiles are based on analysis of "All Days" for entire calendar year range through 2021 for these stations

Daily Forecast for 10/13/23 (issued on 10/12/23)

Averages by FDRA

FDRA	STATION_COUNT	NFDR_DATE	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	DUR1	DUR2
Southern Highlands	3	2023-10-13	28.53 47.7%	9.97 28.8%	1.67 38.7%	13.57 64.4%	446.00	16.64 66.3%	23.17 78.1%	20.53 69.9%	22.05 76.3%	205.07	170.33	67.7°F	62.0%	SSE 8.0 mph	0.0	0.0
Central Mountains	3	2023-10-13	25.90 45.5%	11.20 28.9%	2.20 38.8%	9.70 58.2%	408.67	15.19 60.1%	21.91 75.5%	20.89 73.1%	22.27 83.1%	250.00	200.00	71.3°F	51.7%	SSE 7.7 mph	0.0	0.0
Northern Highlands	2	2023-10-13	23.20 40.4%	9.60 34.0%	1.85 47.0%	8.95 53.6%	263.00	15.42 53.8%	22.47 73.0%	20.81 73.3%	22.88 91.2%	250.00	200.00	67.5°F	53.5%	SSE 6.5 mph	0.0	0.0
Blue Ridge Escarpment	3	2023-10-13	26.70 34.9%	13.60 33.0%	2.23 30.4%	8.60 45.4%	397.33	14.71 65.3%	20.85 70.1%	20.49 58.2%	20.69 66.0%	203.90	169.00	72.0°F	51.0%	ESE 4.3 mph	0.0	0.0
Western Piedmont	3	2023-10-13	35.40 46.4%	16.93 30.1%	2.80 32.4%	14.47 54.3%	477.00	14.38 69.1%	22.63 83.8%	20.54 80.8%	21.28 76.6%	193.80	161.67	77.0°F	45.0%	E 4.3 mph	0.0	0.0
Sandhills	3	2023-10-13	26.80 27.8%	20.40 19.5%	4.03 28.7%	5.87 61.1%	486.33	14.31 69.8%	24.10 86.3%	21.07 78.1%	21.58 86.8%	250.00	200.00	76.7°F	43.0%	E 5.3 mph	0.0	0.0
Eastern Piedmont	4	2023-10-13	15.08 10.3%	10.10 14.9%	1.55 20.7%	3.33 6.8%	230.25	14.30 66.7%	23.16 83.8%	20.51 78.5%	22.22 89.0%	250.00	200.00	75.8°F	44.8%	E 3.3 mph	0.0	0.0
Southern Coastal	7	2023-10-13	21.79 16.0%	11.03 16.0%	1.83 22.3%	6.90 17.4%	298.71	15.19 68.4%	24.99 88.3%	23.24 87.3%	22.60 88.7%	153.56	163.29	76.1°F	49.4%	ENE 4.6 mph	0.3	0.0
Northern Coastal	4	2023-10-13	22.75 17.0%	13.65 21.0%	1.93 23.8%	6.23 13.6%	255.50	14.67 69.0%	24.14 85.8%	20.83 75.2%	22.33 81.5%	92.78	135.00	75.5°F	48.0%	NE 4.0 mph	0.0	0.0

Weekly Outlook - FDRA General Fire Danger Forecast Matrix:

- Available on the FWIP within the "Resources for NCFS" page.
- The operation link is: https://products.climate.ncsu.edu/fwip/outlook.php
- The matrix updates daily - please review the tool notes below for more details.
- For the 9 FDRAs in North Carolina

Weekly Outlook

Sandhills FDRA - General Fire Danger Forecast

For planning purposes only; forecast is subject to change

Four or more RED blocks in a day signals the potential for a **Critical Fire Day**

DAY	FRI 13-Oct	SAT 14-Oct	SUN 15-Oct	MON 16-Oct	TUE 17-Oct	WED 18-Oct	THU 19-Oct
Avg. Max. Temp. (°F)	76	73	70	62	65	69	71
Avg. Min. Humidity (%)	48	76	54	54	45	43	43
Avg. 20' Wind Speed (mph)	5	6	9	10	8	5	5
Avg. Wind Direction*	ESE	S	NW	WNW	NW	WNW	SW
Avg. Probability of Precip. (%)	52	59	12	9	6	0	0
Days Since a Wetting Rain**	1.7	0.0	1.0				
Forecast ERC (Fuel Model Z)	25.7	24.5	22.1	26.5	30.7	28.0	32.1
Forecast BI (Fuel Model Z)	30.2	24.7	38.9	37.3	40.4	34.6	34.1
Forecast IC (Fuel Model Z)	4.9	3.1	4.8	5.0	5.8	4.8	5.6
Forecast 100-Hr. FMC	21.1	21.6	21.9	22.1	21.7	21.4	20.8
Forecast 1000-Hr. FMC	21.6	21.6	21.5	21.6	21.7	21.7	21.7
KBDI	486.3						

Data Source:

- Weather forecasts come from the National Weather Service's Digital Forecast Database. The wind speed and direction, and probability of precipitation, are calculated as averages of the 1 am, 7 am, 1 pm, and 7 pm forecasts. The 20-foot wind speed is estimated from the 10-meter forecast using the log wind profile method.
- Days since a wetting rain is calculated using a combination of historical data (to determine the most recent wetting rain event) and forecasted precipitation amounts. These forecasted amounts are only available for the first three days of the forecast period.
- Fire danger forecasts for the next 7 days are issued by National Weather Service through WIMS. KBDI is only available on the first forecast day since the NFDRS Forecast product does not include precipitation amounts, which are used to adjust KBDI from day to day

Values in the table above are averages from 3 stations in this FDRA:

- **Sandhills Research Station** (317040)
- **Rockingham** (318202)
- **Fort Liberty** (318503)

KEY	Low to Moderate Burning Conditions	Burning Conditions Can be High CAUTION	Burning Conditions Can be Critical WATCH OUT!
Avg. Max. Temp.	Less than 50°F	Between 50°F and 60°F	Greater than 60°F
Avg. Min. Humidity	Greater than 40%	Between 30% and 40%	Less than 30%
Avg. 20' Wind Speed	Less than 4 mph	Between 4 mph and 8 mph	Greater than 8 mph
Avg. Wind Direction*	Criticality of wind direction is highly dependent on burn operations and/or structures threatened.		
Days Since a Wetting Rain**	A wetting rain is defined as 0.10" or greater. This is an average of the FDRA stations noted above.		
Energy Release Comp.	Less than 52.4	Between 52.4 and 62	Greater than 62
Burning Index	Less than 45.6	Between 45.6 and 53.3	Greater than 53.3
Ignition Component	Less than 13.6	Between 13.6 and 18.8	Greater than 18.8
100-Hour Fuel Moisture	Greater than 17.4%	Between 16% and 17.4%	Less than 16%
1000-Hour Fuel Moisture	Greater than 18.2%	Between 17.2% and 18.2%	Less than 17.2%
KBDI	Less than 397	Between 397 and 500	Greater than 500

Other factors to consider when determining fire danger: **sky conditions**, **precipitation amount**, **number of days since rain**, and **season**

Tool Summary:

The forecast matrix was created using **standard NFDRS and weather forecast data:**

- Weather conditions and NFDRS outputs are forecasted over the next 7 days by NWS for SIG stations in each FDRA.
- Weather variable ranges and breakpoints were defined by FDRA stakeholders and relate to Pocket Card notes.
- Maximum temperatures in the Critical range are color-coded with shades of red to help visually distinguish daily variations. The brightest red color corresponds to temperatures of 100°F or greater.

Fire danger forecast indices and component values are grouped into three categories based on historical percentiles, assessed using the FF+ All Days filter through 2021:

- Low to Moderate (0 to 74th percentile); shown in blue-green
- High (75th to 89th percentile); shown in yellow
- Very High to Extreme (90th+ percentile); shown in red and labeled as Critical

Dead fuel moisture forecast values are grouped into three categories based on historical percentiles, assessed using the FF+ All Days filter through 2021:

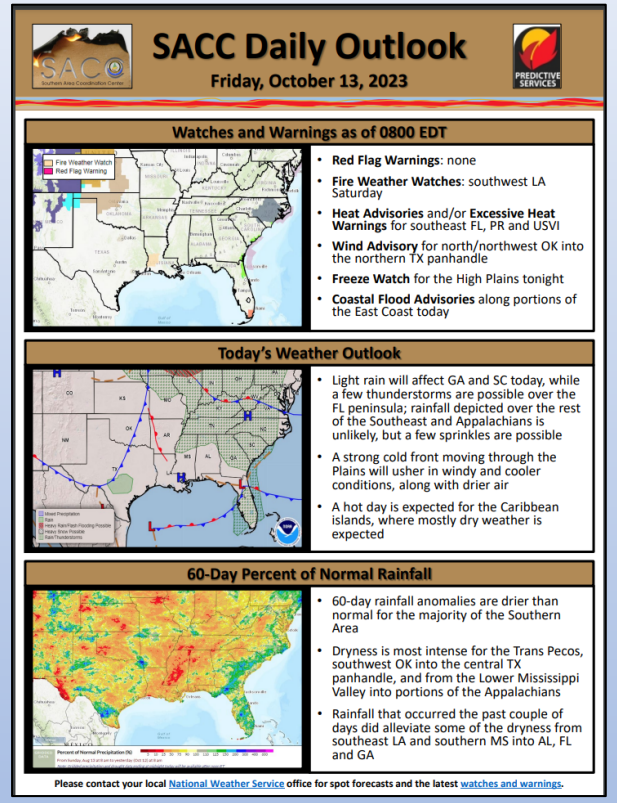
- Low to Moderate (26th to 100th percentile); shown in blue-green
- High (11th to 25th percentile); shown in yellow
- Very High to Extreme (0 to 10th percentile); shown in red and labeled as Critical

Other Notes:

- Read the key and notes for each FDRA, included on the outlook matrix page.
- Forecasts are variable and can change significantly over a forecast cycle and across the landscape.
- This is another tool for gaining better situational awareness, and should be used for general planning purposes only.
- The outlook matrix is refreshed when an FDRA is selected, using the most recent forecast data available at that time. The 7th day may drop off or display partial data prior to the afternoon/evening forecast update.
- Daily updates to NFDRS forecasts occur around **1530** daily, while general weather forecasts are updated around **1730** daily.

Sandhills FDRA: 10/13/23 AM Run

Southern Area Daily Outlook Page:



SACC Daily Outlook

Friday, October 13, 2023

Watches and Warnings as of 0800 EDT

- **Red Flag Warnings**: none
- **Fire Weather Watches**: southwest LA Saturday
- **Heat Advisories** and/or **Excessive Heat Warnings** for southeast FL, PR and USVI
- **Wind Advisory** for north/northwest OK into the northern TX panhandle
- **Freeze Watch** for the High Plains tonight
- **Coastal Flood Advisories** along portions of the East Coast today

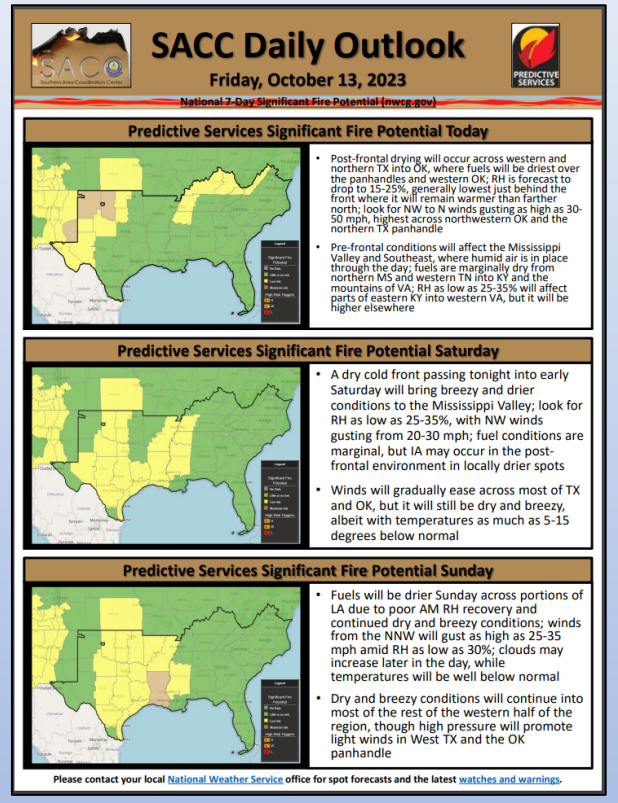
Today's Weather Outlook

- Light rain will affect GA and SC today, while a few thunderstorms are possible over the FL peninsula; rainfall depicted over the rest of the Southeast and Appalachians is unlikely, but a few sprinkles are possible
- A strong cold front moving through the Plains will usher in windy and cooler conditions, along with drier air
- A hot day is expected for the Caribbean islands, where mostly dry weather is expected

60-Day Percent of Normal Rainfall

- 60-day rainfall anomalies are drier than normal for the majority of the Southern Area
- Dryness is most intense for the Trans Pecos, southwest OK into the central TX panhandle, and from the Lower Mississippi Valley into portions of the Appalachians
- Rainfall that occurred the past couple of days did alleviate some of the dryness from southeast LA and southern MS into AL, FL and GA

Please contact your local National Weather Service office for spot forecasts and the latest watches and warnings.



SACC Daily Outlook

Friday, October 13, 2023

National 7-Day Significant Fire Potential (nwcg.gov)

Predictive Services Significant Fire Potential Today

- Post-frontal drying will occur across western and northern TX into OK, where fuels will be driest over the panhandles and western OK; RH is forecast to drop to 15-25%, generally lowest just behind the front where it will remain warmer than farther north; look for NW to N winds gusting as high as 30-50 mph, highest across northwestern OK and the northern TX panhandle
- Pre-frontal conditions will affect the Mississippi Valley and Southeast, where humid air is in place through the day; fuels are marginally dry from northern MS and western TN into KY and the mountains of VA; RH as low as 25-35% will affect parts of eastern KY into western VA, but it will be higher elsewhere

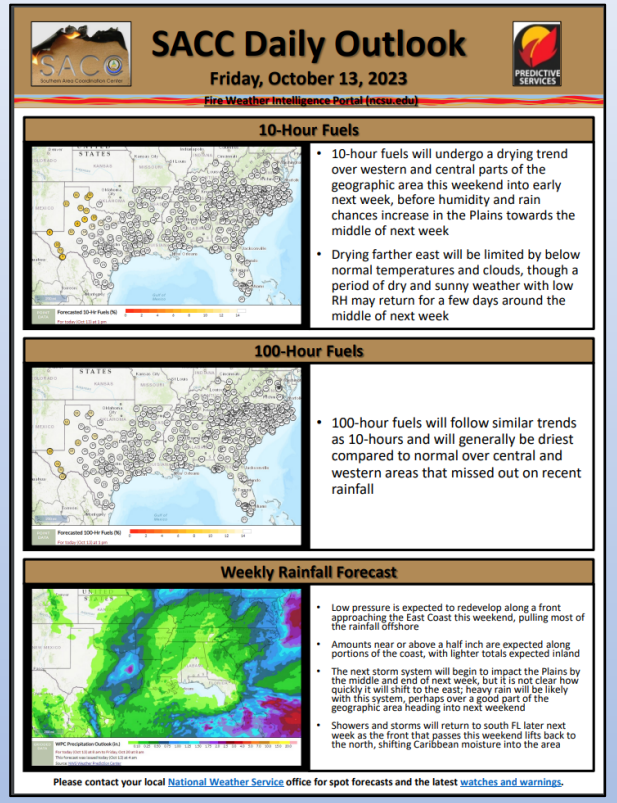
Predictive Services Significant Fire Potential Saturday

- A dry cold front passing tonight into early Saturday will bring breezy and drier conditions to the Mississippi Valley; look for RH as low as 25-35%, with NW winds gusting from 20-30 mph; fuel conditions are marginal, but IA may occur in the post-frontal environment in locally drier spots
- Winds will gradually ease across most of TX and OK, but it will still be dry and breezy, albeit with temperatures as much as 5-15 degrees below normal

Predictive Services Significant Fire Potential Sunday

- Fuels will be drier Sunday across portions of LA due to poor AM RH recovery and continued dry and breezy conditions; winds from the NNW will gust as high as 25-35 mph amid RH as low as 30%; clouds may increase later in the day, while temperatures will be well below normal
- Dry and breezy conditions will continue into most of the rest of the western half of the region, though high pressure will promote light winds in West TX and the OK panhandle

Please contact your local National Weather Service office for spot forecasts and the latest watches and warnings.



SACC Daily Outlook

Friday, October 13, 2023

Fire Weather Intelligence Portal (ncsu.edu)

10-Hour Fuels

- 10-hour fuels will undergo a drying trend over western and central parts of the geographic area this weekend into early next week, before humidity and rain chances increase in the Plains towards the middle of next week
- Drying farther east will be limited by below normal temperatures and clouds, though a period of dry and sunny weather with low RH may return for a few days around the middle of next week

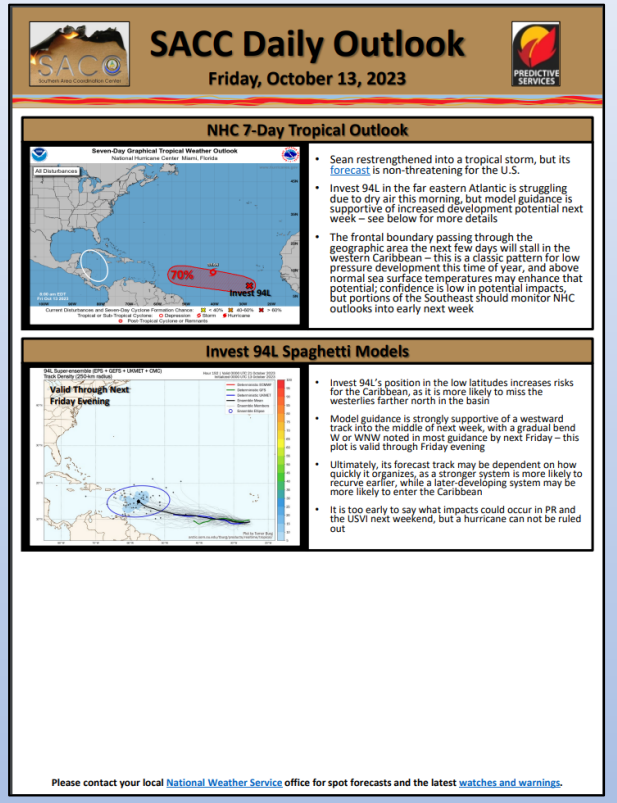
100-Hour Fuels

- 100-hour fuels will follow similar trends as 10-hours and will generally be driest compared to normal over central and western areas that missed out on recent rainfall

Weekly Rainfall Forecast

- Low pressure is expected to redevelop along a front approaching the East Coast this weekend, pulling most of the rainfall offshore
- Amounts near or above a half inch are expected along portions of the coast, with lighter totals expected inland
- The next storm system will begin to impact the Plains by the middle and end of next week, but it is not clear how quickly it will shift to the east; heavy rain will be likely with this system, perhaps over a good part of the geographic area heading into next weekend
- Showers and storms will return to south FL later next week as the front that passes this weekend lifts back to the north, shifting Caribbean moisture into the area

Please contact your local National Weather Service office for spot forecasts and the latest watches and warnings.



SACC Daily Outlook

Friday, October 13, 2023

NHC 7-Day Tropical Outlook

- Sean restrengthened into a tropical storm, but its forecast is non-threatening for the U.S.
- Invest 94L in the far eastern Atlantic is struggling due to dry air this morning, but model guidance is supportive of increased development potential next week – see below for more details
- The frontal boundary passing through the geographic area the next few days will stall in the western Caribbean – this is a classic pattern for low pressure development this time of year, and above normal sea surface temperatures may enhance that potential; confidence is low in potential impacts, but portions of the Southeast should monitor NHC outlooks into early next week

Invest 94L Spaghetti Models

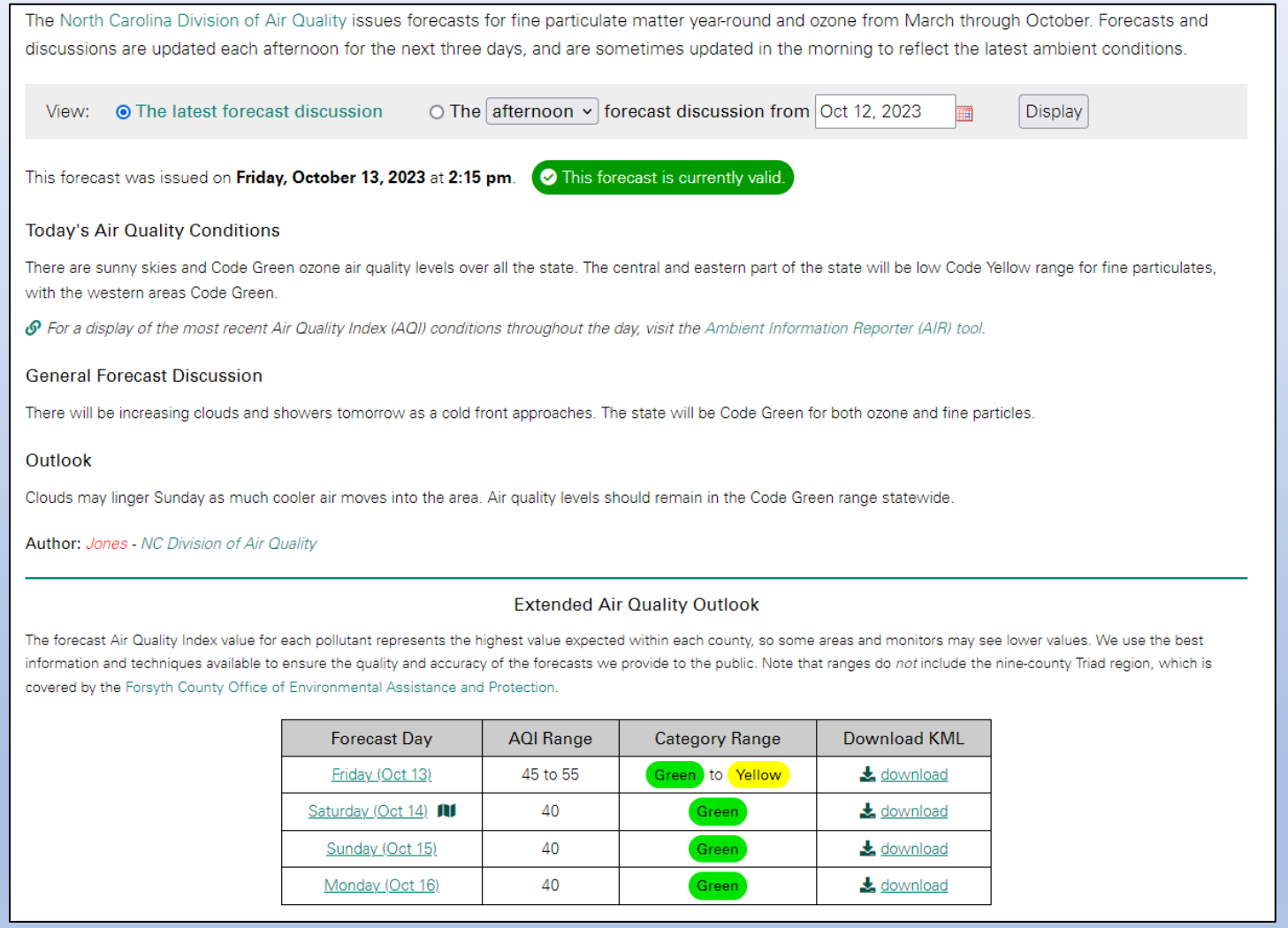
- Invest 94L's position in the low latitudes increases risks for the Caribbean, as it is more likely to miss the westerlies farther north in the basin
- Model guidance is strongly supportive of a westward track into the middle of next week, with a gradual bend W or WNW noted in most guidance by next Friday – this plot is valid through Friday evening
- Ultimately, its forecast track may be dependent on how quickly it organizes, as a stronger system is more likely to recurve earlier, while a later-developing system may be more likely to enter the Caribbean
- It is too early to say what impacts could occur in PR and the USVI next weekend, but a hurricane can not be ruled out

Please contact your local National Weather Service office for spot forecasts and the latest watches and warnings.

Product is generally updated weekdays unless increased activity in the Geographic Area (10/13 Outlook shown)

https://gacc.nifc.gov/sacc/resources/predictive/sacc-daily-outlook.pdf

NC DAQ Air Quality Forecast - *Three Day Outlook*



The North Carolina Division of Air Quality issues forecasts for fine particulate matter year-round and ozone from March through October. Forecasts and discussions are updated each afternoon for the next three days, and are sometimes updated in the morning to reflect the latest ambient conditions.

View: The latest forecast discussion The afternoon forecast discussion from Oct 12, 2023 Display

This forecast was issued on **Friday, October 13, 2023** at **2:15 pm**. This forecast is currently valid.

Today's Air Quality Conditions

There are sunny skies and Code Green ozone air quality levels over all the state. The central and eastern part of the state will be low Code Yellow range for fine particulates, with the western areas Code Green.

For a display of the most recent Air Quality Index (AQI) conditions throughout the day, visit the Ambient Information Reporter (AIR) tool.

General Forecast Discussion

There will be increasing clouds and showers tomorrow as a cold front approaches. The state will be Code Green for both ozone and fine particles.

Outlook

Clouds may linger Sunday as much cooler air moves into the area. Air quality levels should remain in the Code Green range statewide.

Author: *Jones - NC Division of Air Quality*

Extended Air Quality Outlook

The forecast Air Quality Index value for each pollutant represents the highest value expected within each county, so some areas and monitors may see lower values. We use the best information and techniques available to ensure the quality and accuracy of the forecasts we provide to the public. Note that ranges do *not* include the nine-county Triad region, which is covered by the Forsyth County Office of Environmental Assistance and Protection.

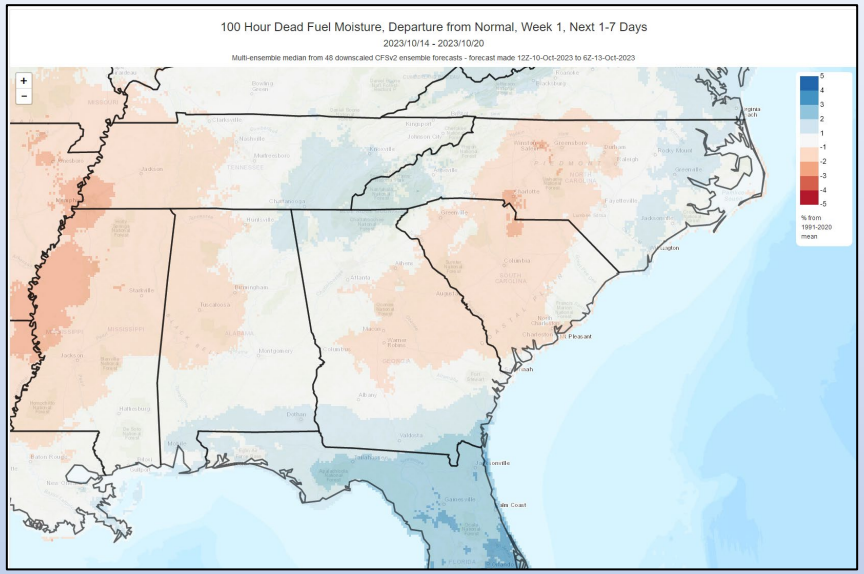
Forecast Day	AQI Range	Category Range	Download KML
Friday (Oct 13)	45 to 55	Green to Yellow	download
Saturday (Oct 14)	40	Green	download
Sunday (Oct 15)	40	Green	download
Monday (Oct 16)	40	Green	download

From: ***https://airquality.climate.ncsu.edu/discussion/?view=latest***
DAQ Air Quality Portal: ***https://airquality.climate.ncsu.edu/***

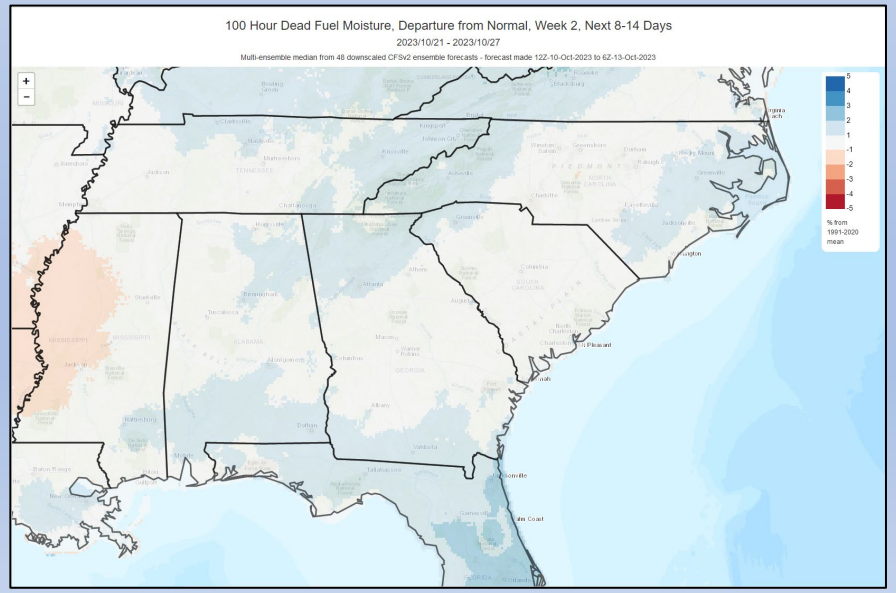
Modeled Departure from Normal by Week: 100-hr Fuels

Output relies on experimental forecast outputs and is subject to change

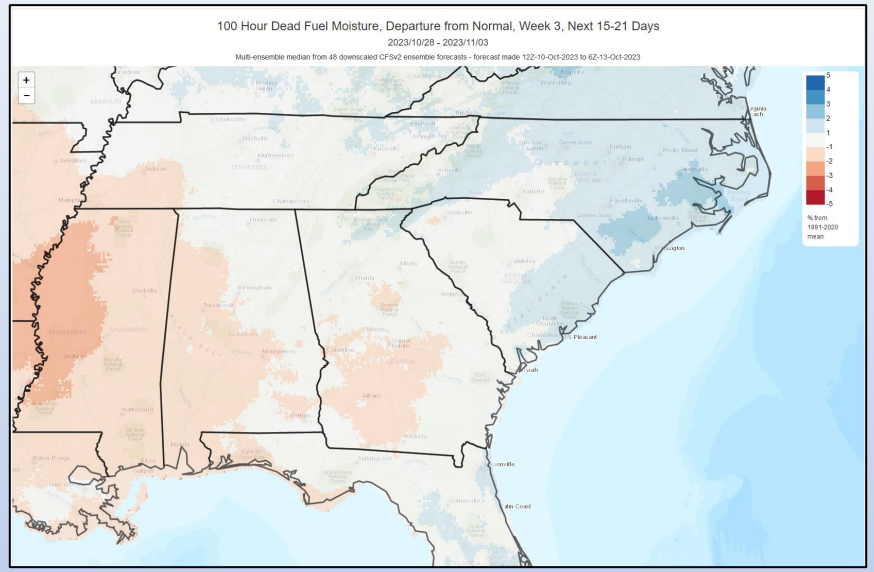
Week-1



Week-2



Week-3

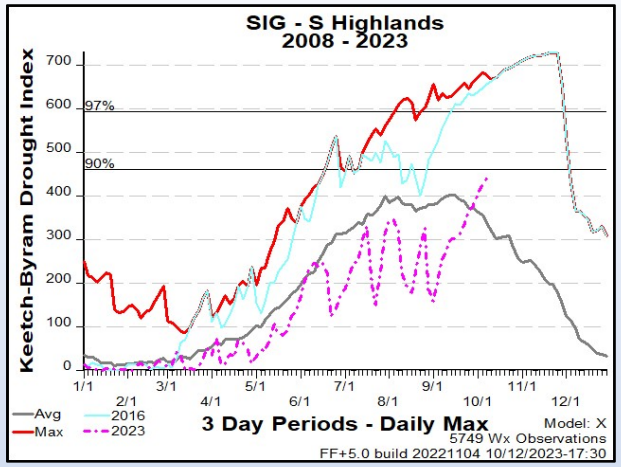


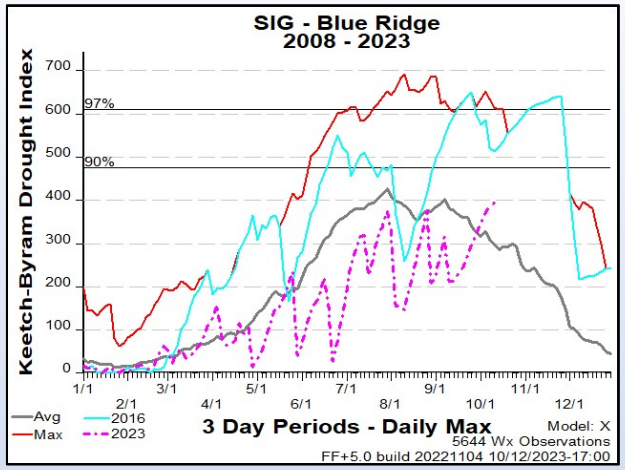
This output can provide insight into general drying trends.

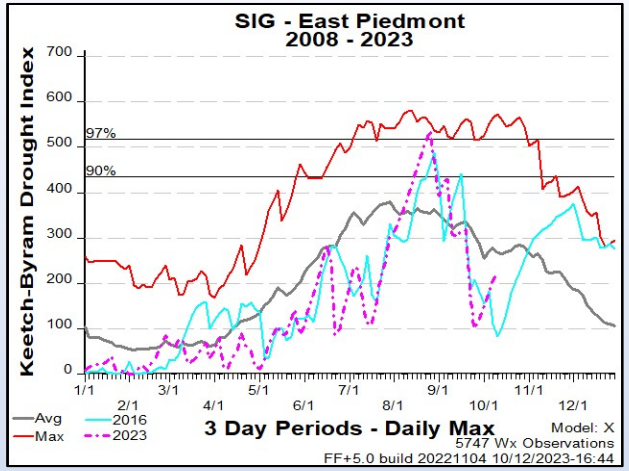
Note modeled departure from normal (increase in fuel dryness) in Week-1 with near normal forecast for Week-2 & 3, likely an interaction of cooler predicted temps, possible precip influences and better overnight RH recovery.

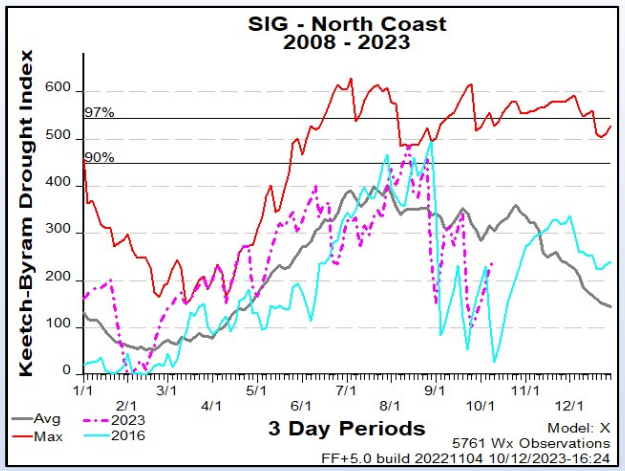
Important to note that there is significant forecast uncertainty as you go further out in time, especially in early fall of an El Niño Transition Year.

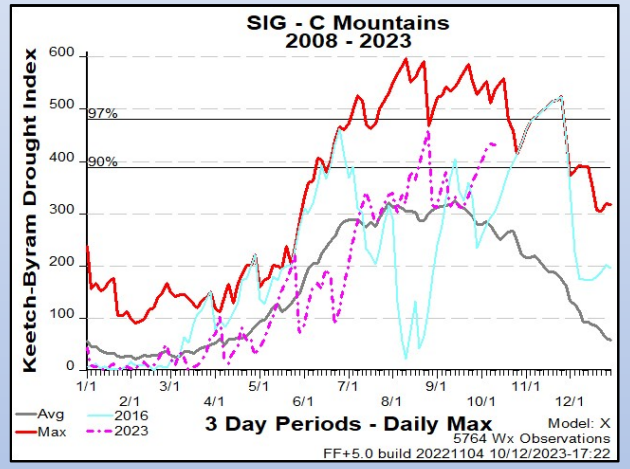
From: https://climatetoolbox.org/tool/Climate-Mapper , 100-hr Map Link

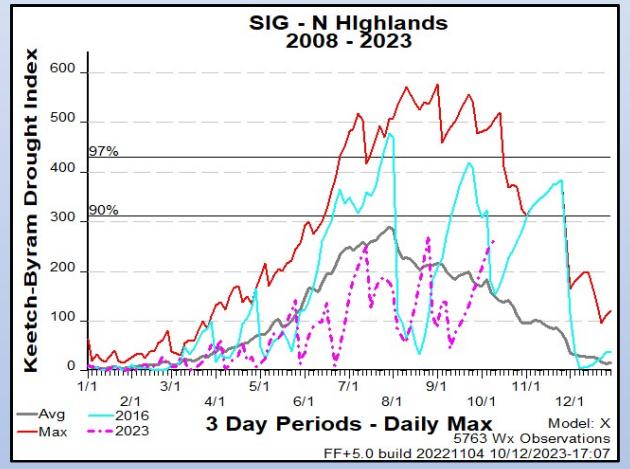


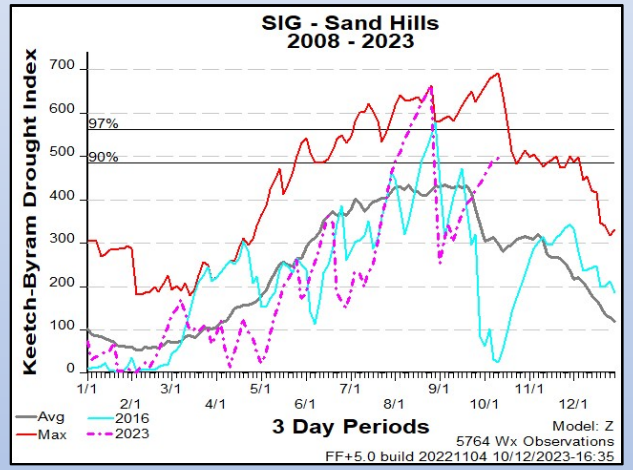


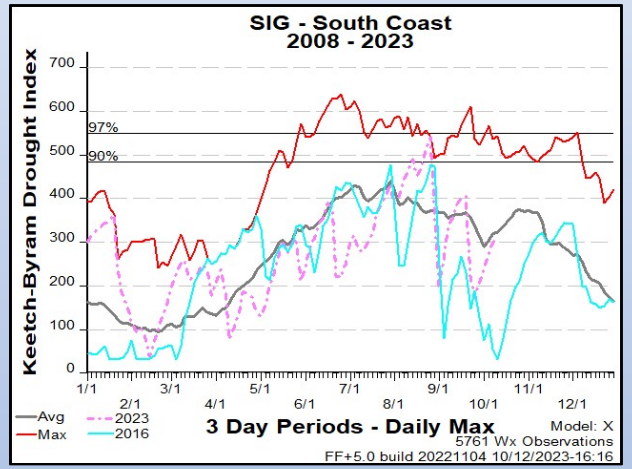


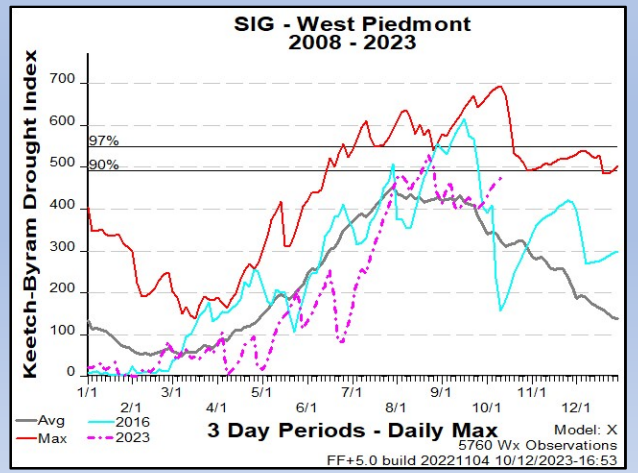






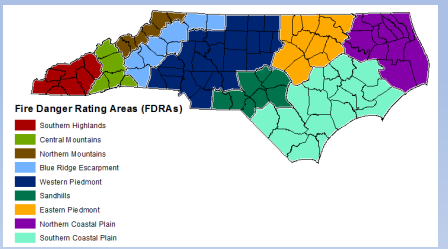


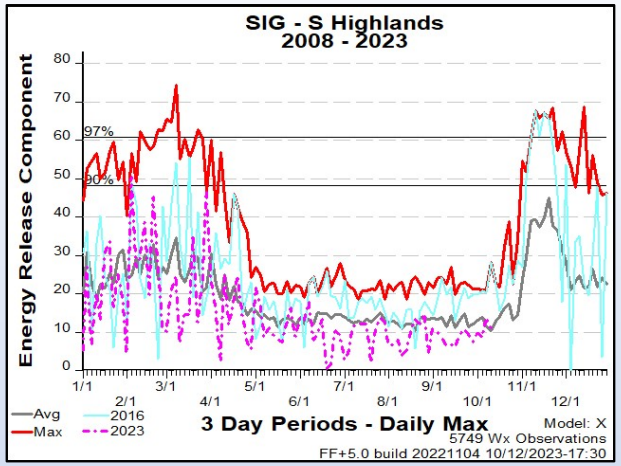


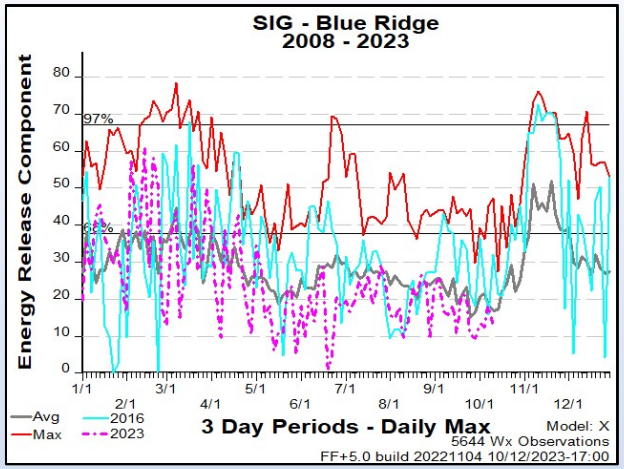


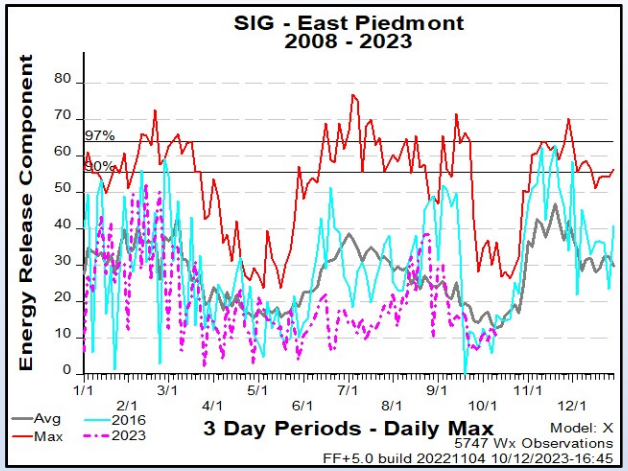
FDRA Outputs from FF+ Run: KBDI

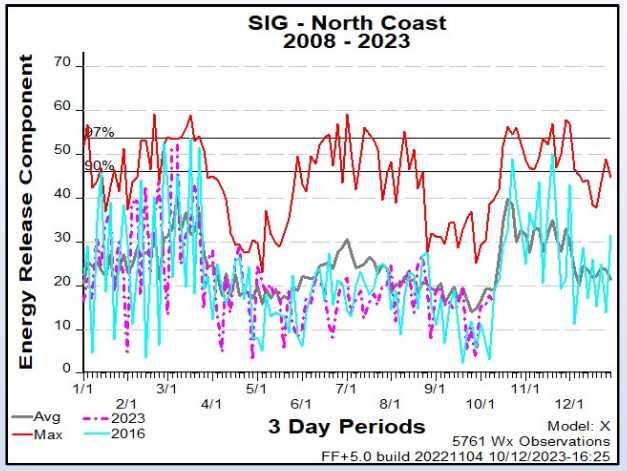
(2008-2023 Data, ending 10/12/23)

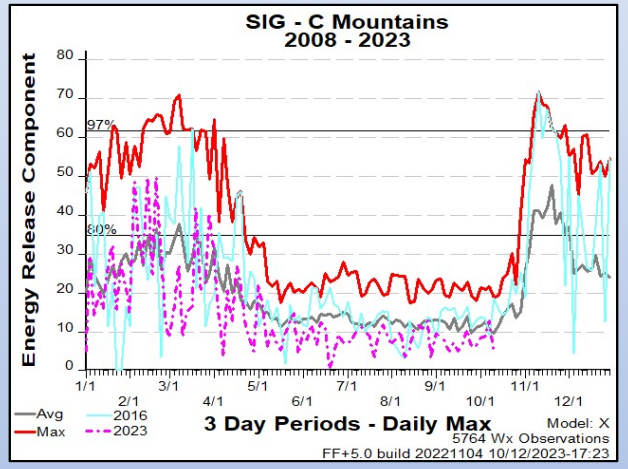


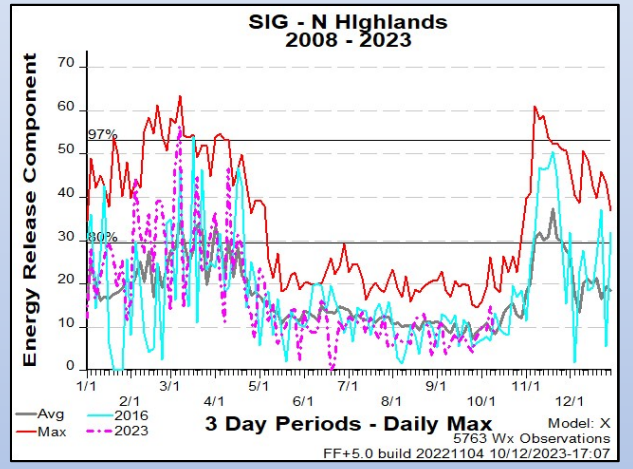


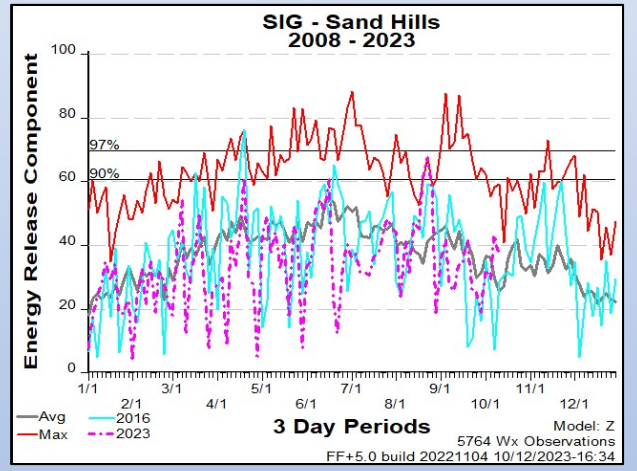


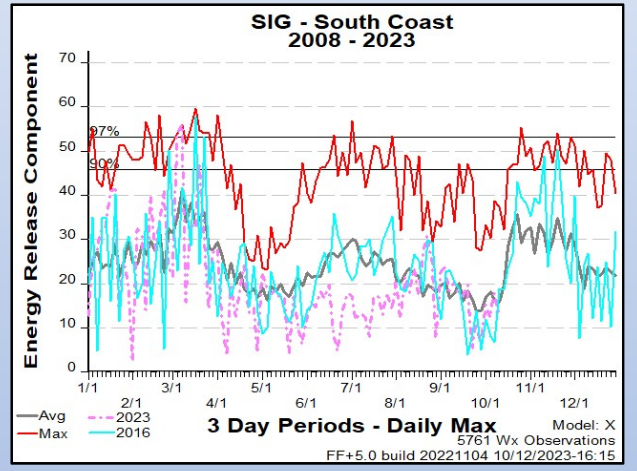


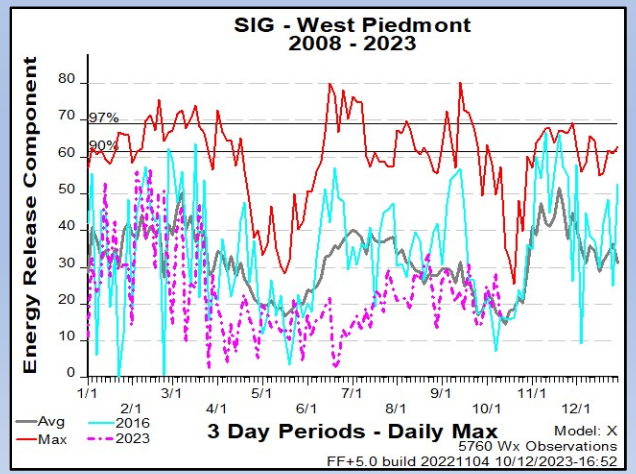






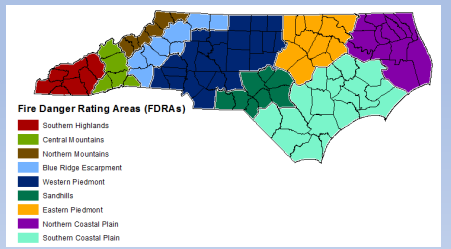


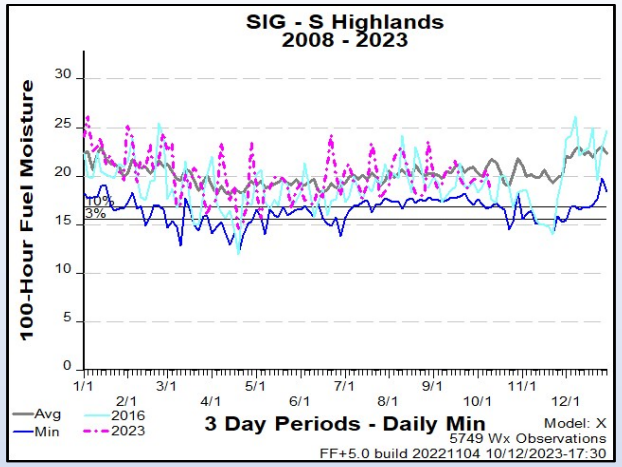


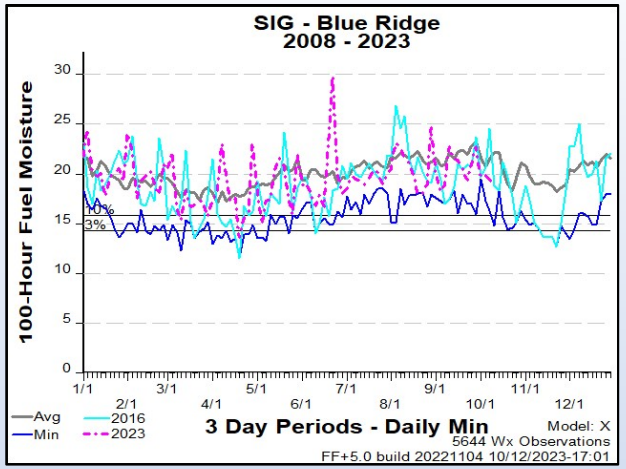


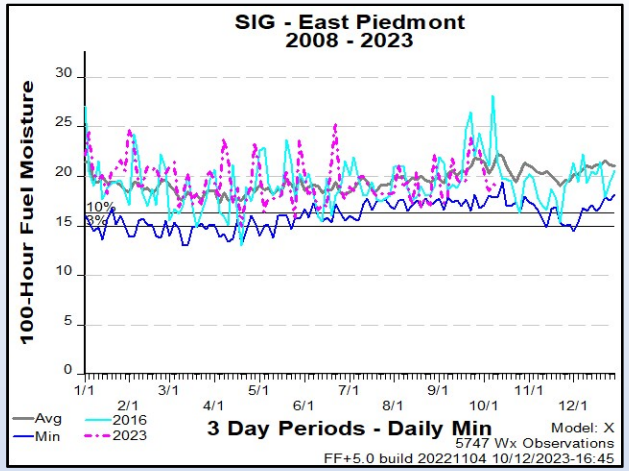
FDRA Outputs from FF+ Run: ERC

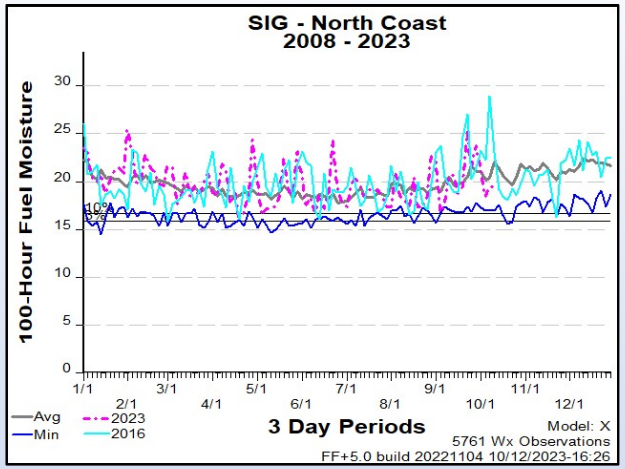
(2008-2023 Data, ending 10/12/23)

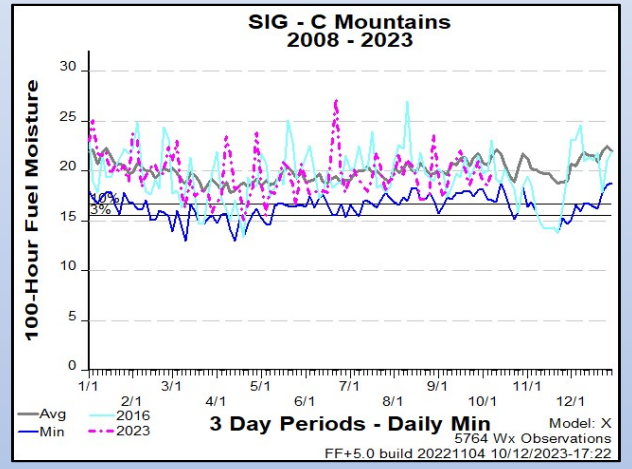


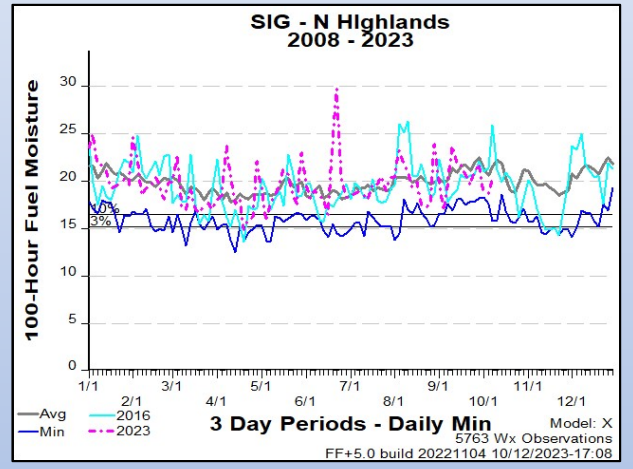


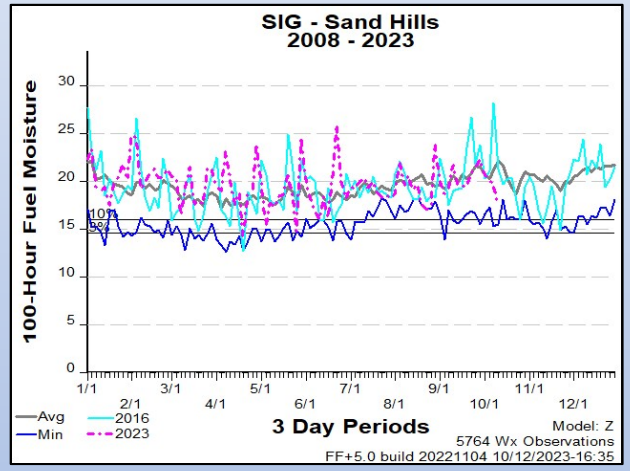


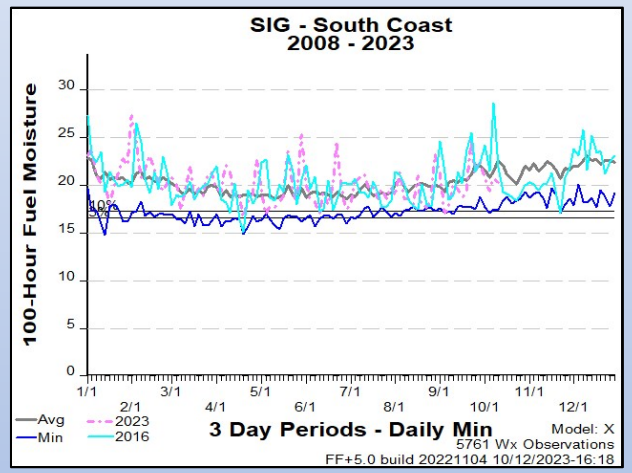


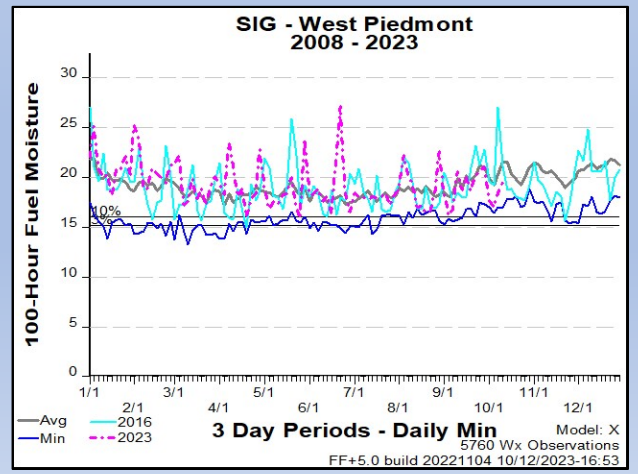






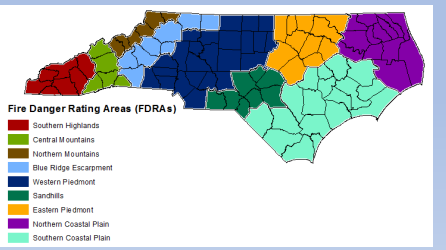


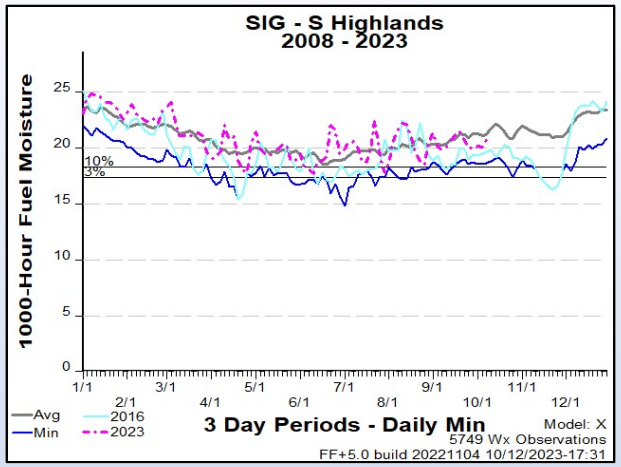


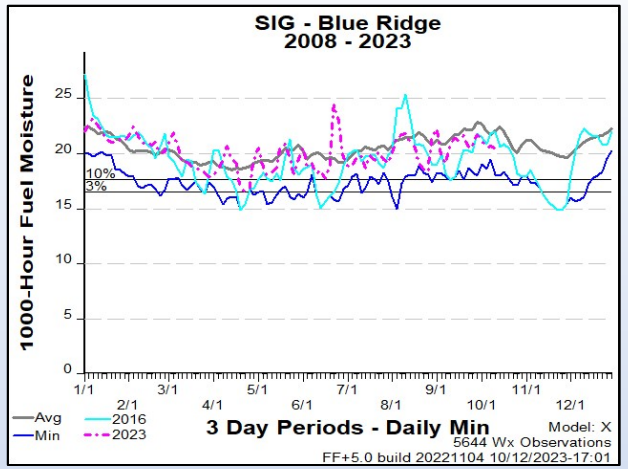


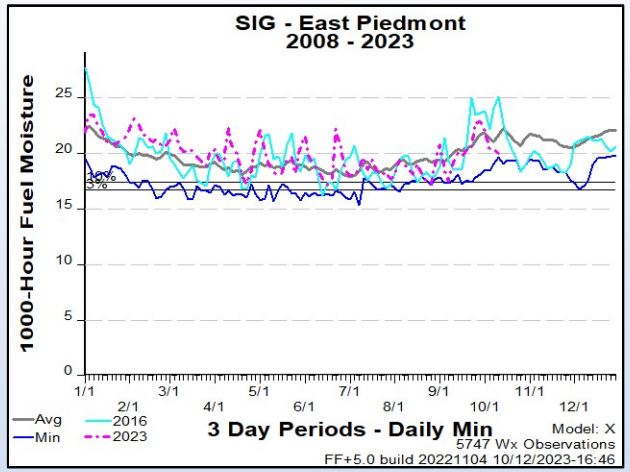
FDRA Outputs from FF+ Run: 100-Hr

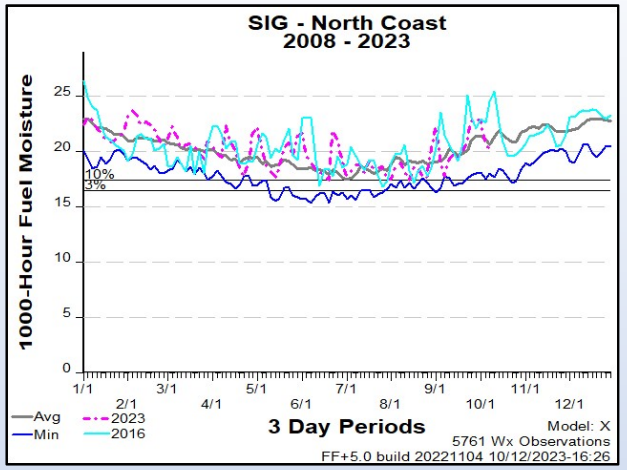
(2008-2023 Data, ending 10/12/23)

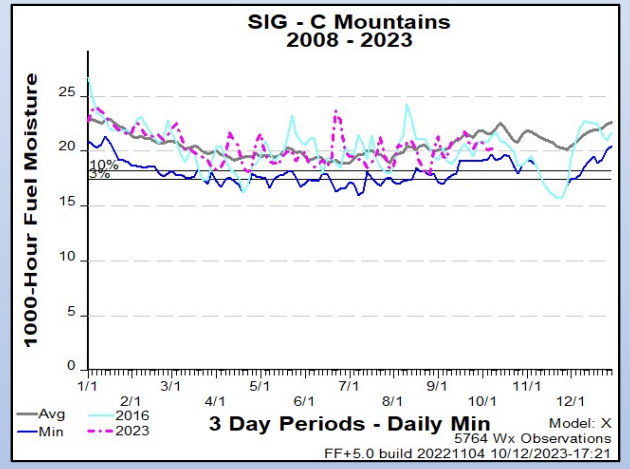


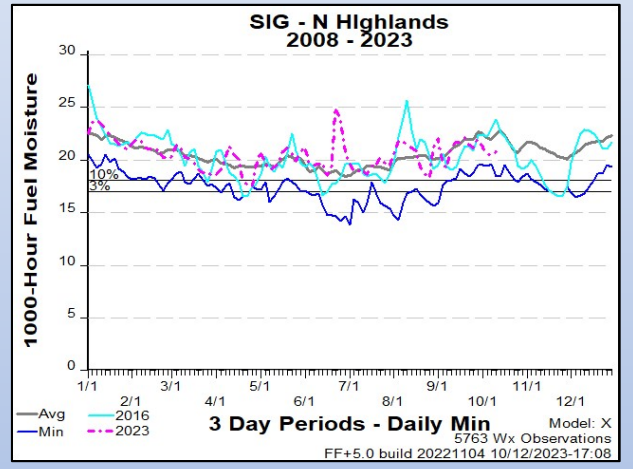


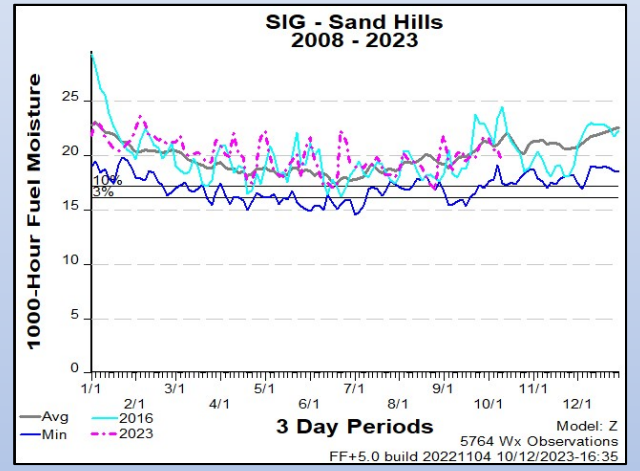


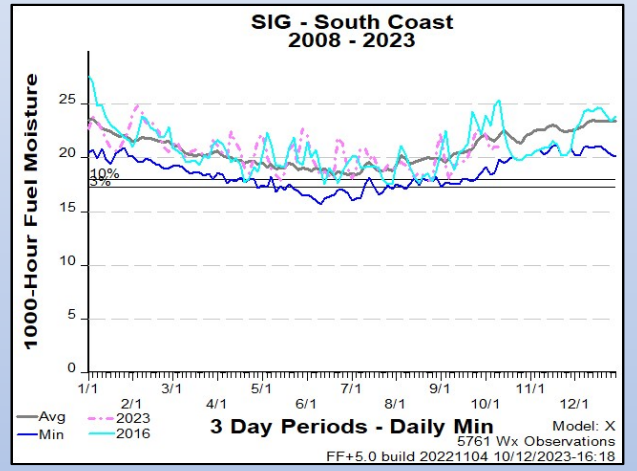


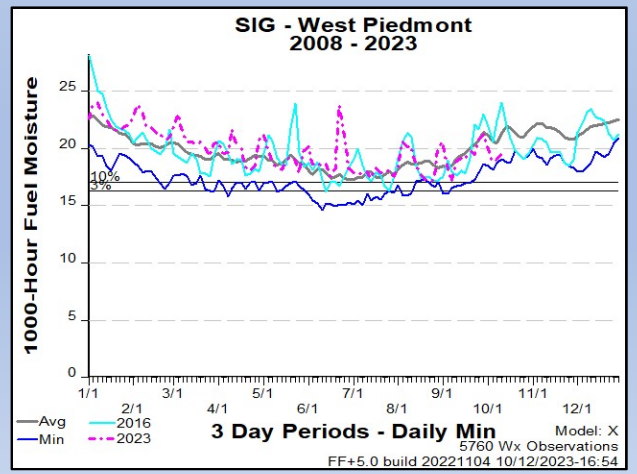






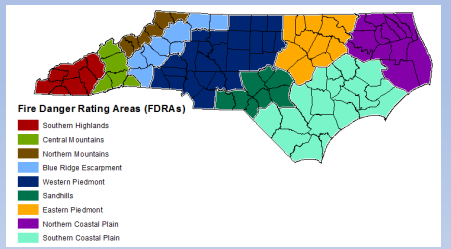






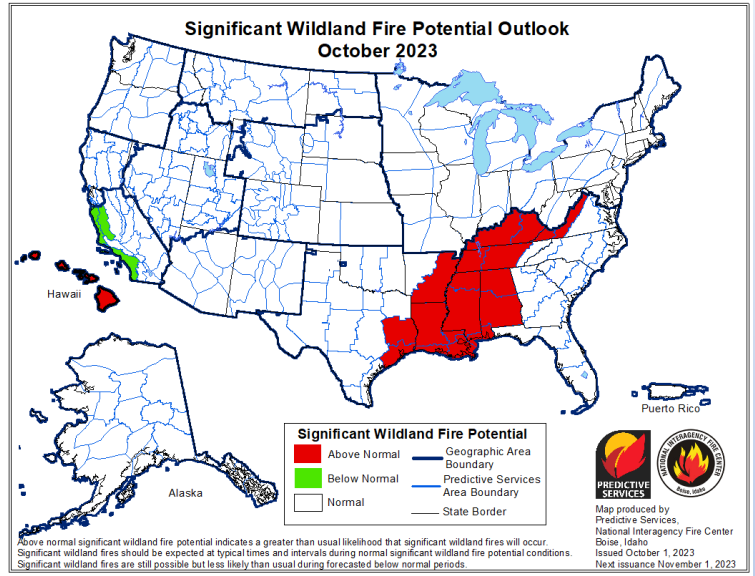
FDRA Outputs from FF+ Run: 1000-Hr

(2008-2023 Data, ending 10/12/23)

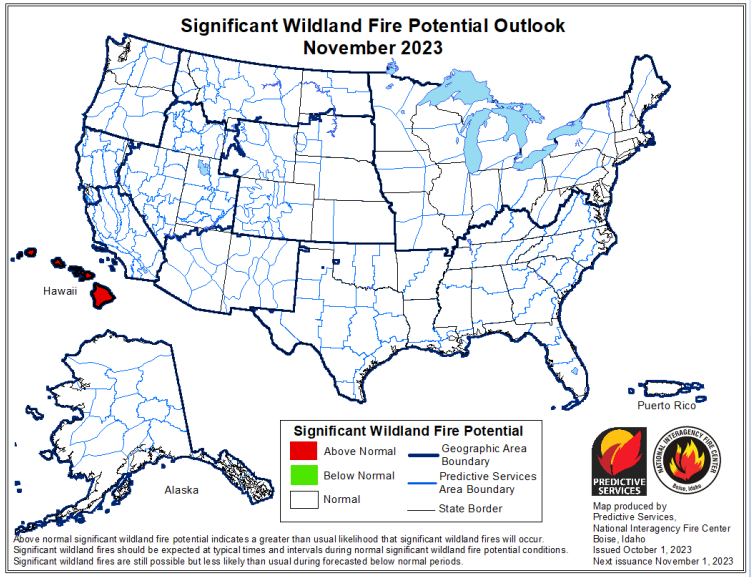


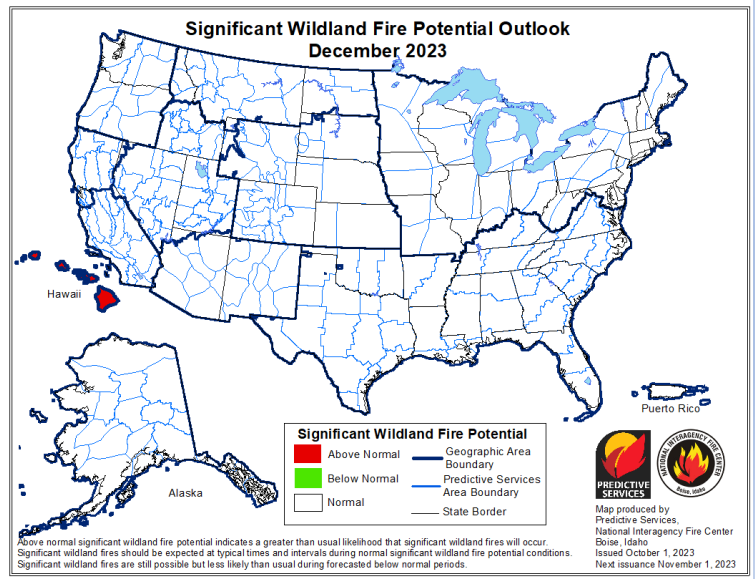
Significant Wildland Fire Potential Outlook:

Updated 10/1/23 – Next Update on 11/1/23

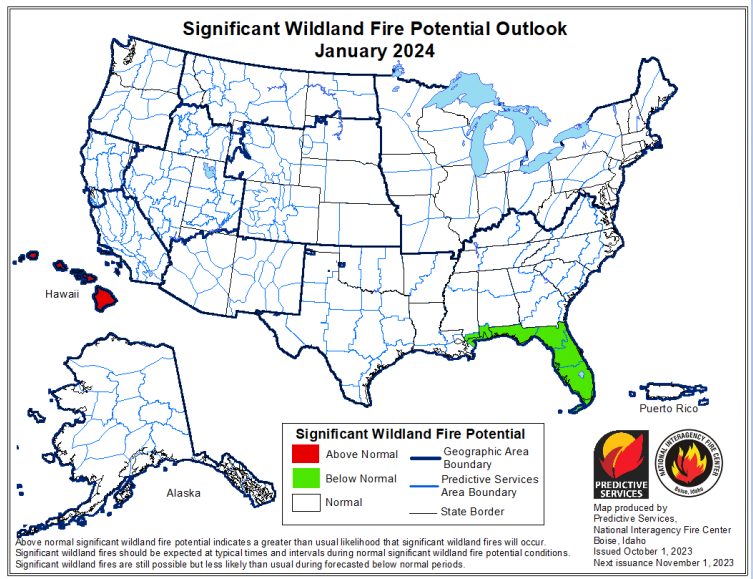


***Forecast uncertainty may lead to an expansion of "Above Normal" Fire Potential for November, especially in the Southern Appalachians and Piedmont areas of the Southeast if abnormally dry conditions continue.**





A significant fire is one that requires resources from outside the district (other than aviation). IA potential is based more on shorter term weather factors. Just a few days of dry weather can increase IA activity considerably as we have seen this year.



Climate Discussion:

- The Climate Prediction Center forecasts a continuing El Niño this fall/winter.
  - Influence from an El Niño event generally becomes more pronounced into the winter and has fewer direct impacts in the summer and early Fall of development.
  - We often see warmer & drier conditions develop from summer into fall before the typical transition to a "wet" winter.
  - There are still no close analogs at this point for NC & the strength of the developing event and exact timing of any potential pattern change is not clear or certain.
- For the October-November-December Period from the CPC 3-Month Outlook:
  - Slightly above normal temperatures are generally favored.
  - Slightly above normal precipitation continues to be favored.
- Still much uncertainty this far out in time.

Drought/Weather Discussion:

- KBDI values continue to trend near or above the 90th percentile for western FDRAs, (FWIP Percentile Map).
  - *Remember that these values are based upon point data averaging for "SIG" RAWS Stations in a particular FDRA & rainfall is variable over the landscape.*
- Subsidence impacts (abnormally gusty winds, low RH, etc.) from passing tropical systems should also considered this time of year.
- ~52% of State in "D0" Abnormally Dry and ~9% of State in "D1" Moderate Drought Conditions as of last USDM update.
- The US Seasonal Drought Outlook released on September 30th for Oct-Dec continues to favor larger-scale drought free conditions for NC.
- If drought conditions were to significantly expand/intensify in combination with seasonal leaf-drop and dormancy of live vegetation, overall initial attack activity and mop-up demands would be expected to increase for those areas.

Fire Activity Discussion:

- September activity was near normal in state-wide context, near the 10-yr avg in acres and incidents for the month.
- IA Activity has increased during periods of lower RH's, higher temps/winds aligning with decline in moisture of live fuels, especially in already noted dry areas.
- October "209" Fires:
  - None at time of report
- Predictive Services Four Month Significant WF Potential Outlook:
  - Normal Activity generally favored statewide for October, November, December, January.
  - There is significant forecast uncertainty more than 7-10 days out.
  - If leaf-drop and live fuel dormancy coincide with continued widespread dry conditions:
    - Would create enhanced fire danger conditions.
    - Would also necessitate more intensive holding and mopup measures due to already receptive dry duff and ground fuels.

Fuels/Indices Discussion:

- Relative greenness & generally good RH recovery have helped hold the state in a "normal" pattern of fire activity over the past month.
- Fire activity and acreage traditionally build as we progress into leaf-drop and live fuel dormancy through October into November.
  - More air flow and solar heating due to lack of shading/wind interception & seasonal weather patterns
  - Fuels become more receptive
  - Increase in debris burning, campfires and resulting escapes
- Limited areas experienced their first frost/freeze events over the past weekend – more are likely after next significant front (see CPC Outlook Slide).
- ERC values will seasonally increase once modeled "green" fuels transition to dormancy in FDRAs using FM-X (see FDRA-ERC Output Slide).
- Limited rainfall & drought conditions are impacting many areas of the state:
  - Some locations are nearing three weeks+ without significant wetting rain (see Slide #12)
  - KBDI values are near or slightly over the 90th percentile for the year for western FDRAs (see FDRA-KBDI Output Slide).
  - 100-hr & 1000-hr fuel moistures have generally trended below normal (drier) due to the lack of significant rain events (see FDRA Fuel Slides).
- Abnormally dry conditions have continued to expand west since last month (see drought slides).
  - Duff/Organic consumption and smoldering is of concern for any fires occurring in abnormally dry areas.
  - Reburn remains a concern following needle cast/leaf-drop on both wildfires and prescribed burns.
- Leaf-Drop:
  - Fall leaf color has been noted mostly from 4,500' elevation + with corresponding minor levels of leaf-drop so far.
  - Drought impacted locations with more sensitive species are likely to see an earlier than usual leaf-drop.
- Our heaviest rain events this time of year are generally tropical related, especially for the coastal districts (most recently TS Ophelia).
  - Any significant storm could greatly alter fuel and drought conditions for areas currently being impacted.