

Weekly Fire Danger Assessment NCFS - Region **ONE**

For Time Period:

Friday (4/7/23) to Thursday (4/13/23)

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

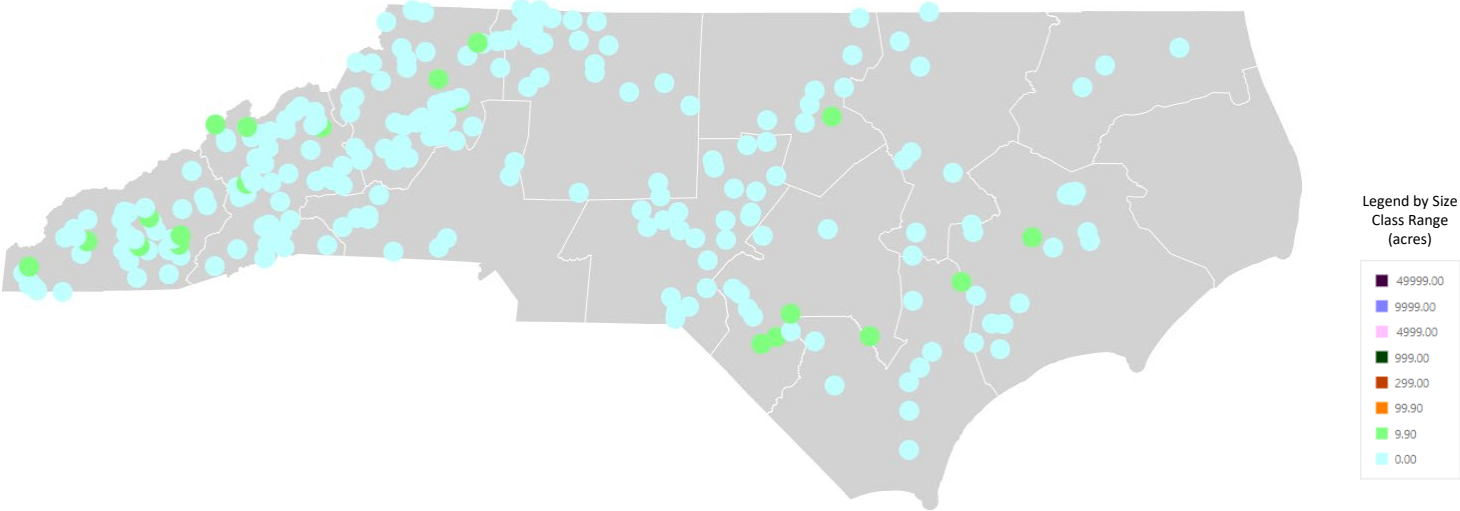
Past 7-Days Signal 14 Activity

NCFS - Region 1			
Previous 7-Day Fire Activity (Does Not Include Federal Ownerships)			
Data Source:	Signal 14 Regional Activity Summary Report (Signal 14 is a snapshot in time)		
Date Range:	3/30 - 4/5, 2023		
Type	Number	Acres	
Wildfires:	21	68.5	
Prescribed Fires (State & Private Lands):	13	1,680	

fiResponse Incident Location Map (for general context)

Date Range: 3/30 – 4/5, 2023

Report: Business Intelligence Module, Response Trends Map

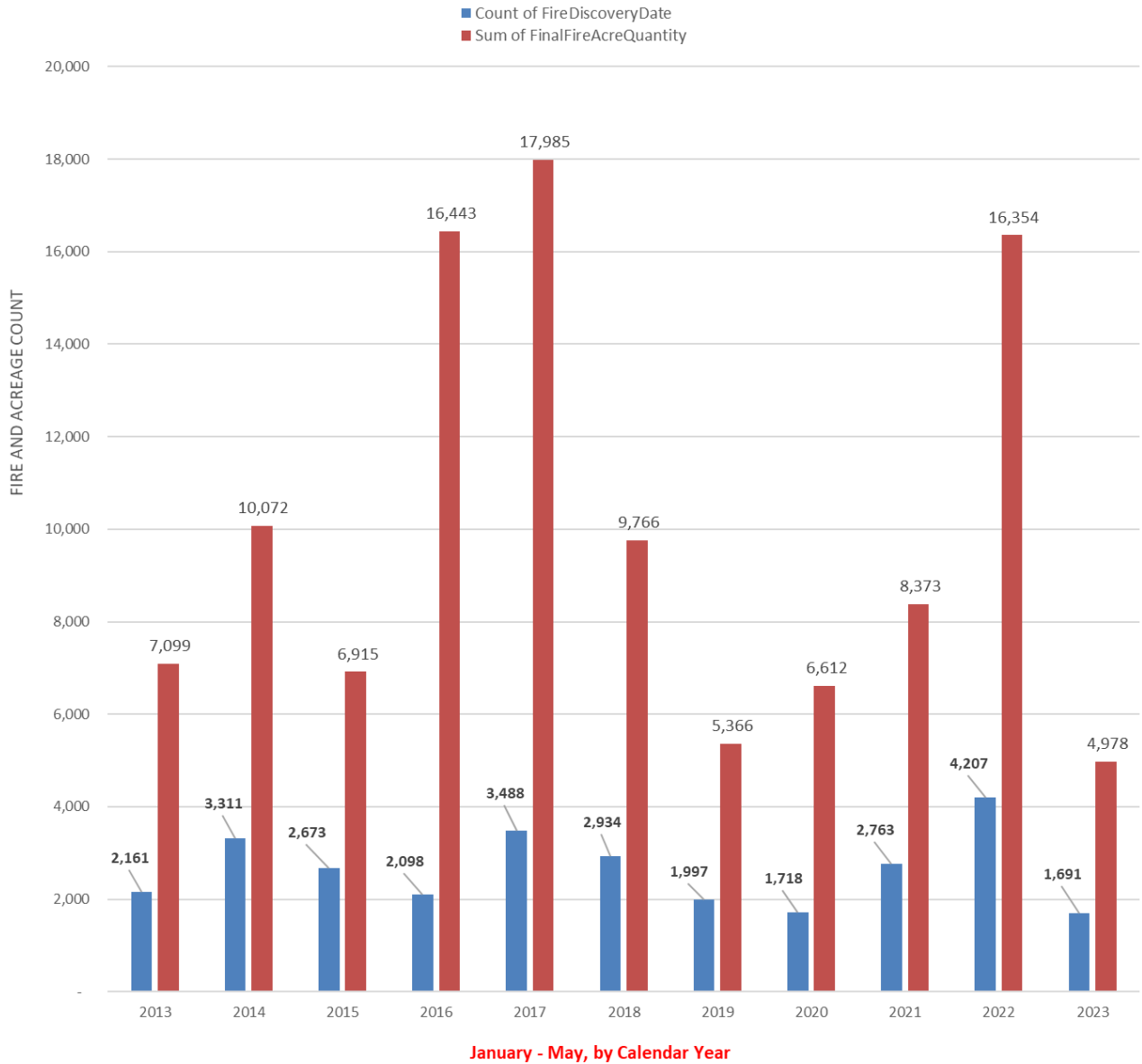


STATEWIDE FIRE COUNT & ACRES BY CALENDAR YEAR (CY 2013 - 2023)

ANALYSIS PERIOD: JANUARY - MAY, FOR EACH CY

DATA SOURCE: FARS EXTRACT ON 4/5/23

(DOES NOT INCLUDE FEDERAL FIRES OR ACRES)



*Note: 2023 YTD data shown should **not** be considered the Authoritative/Final Reported Values for the time period. (CY 2023 data only includes finalized fires within reporting system up to time of extract.)*

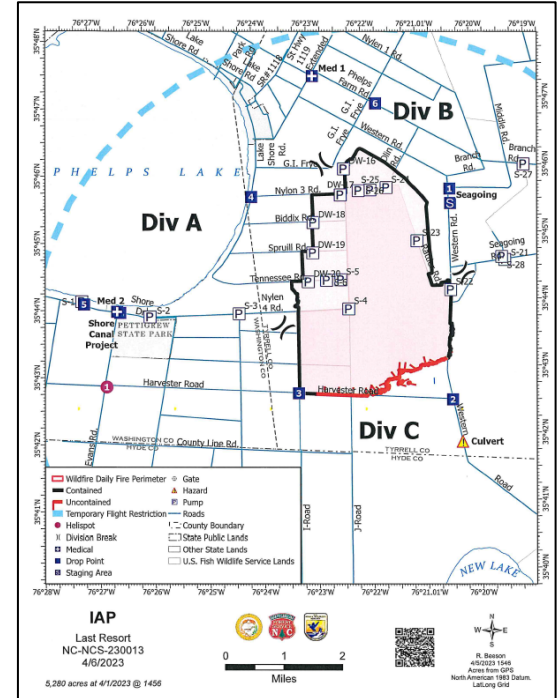
Current and Forecasted Fire Danger Conditions by FDRA

R1

Regional Comments for this Week – R1

Last Resort Fire, AM Update:

- Started 3/24/23
- 5,280 acres
- 70% Containment
- Over 200 Million gallons of water pumped
- IMT3 with approximately 68 Personnel Assigned



From Today's Southern Area Fire Environment Outlook Discussion

- After potentially heavy rain the next few days, **most areas will experience rapid drying the next week** as expansive high pressure brings abnormally low RH to much of the Eastern U.S.

Important notes for next slide group:

A. Current ERC, KBDI, 100-Hr & 1000-Hr Graphics:

- These are extracts from FF+ using weekly observation data downloaded from WIMS.

B. 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.

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

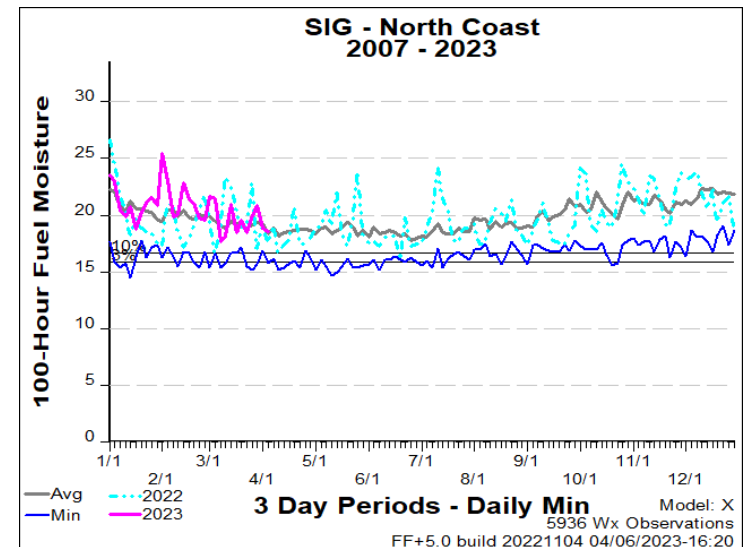
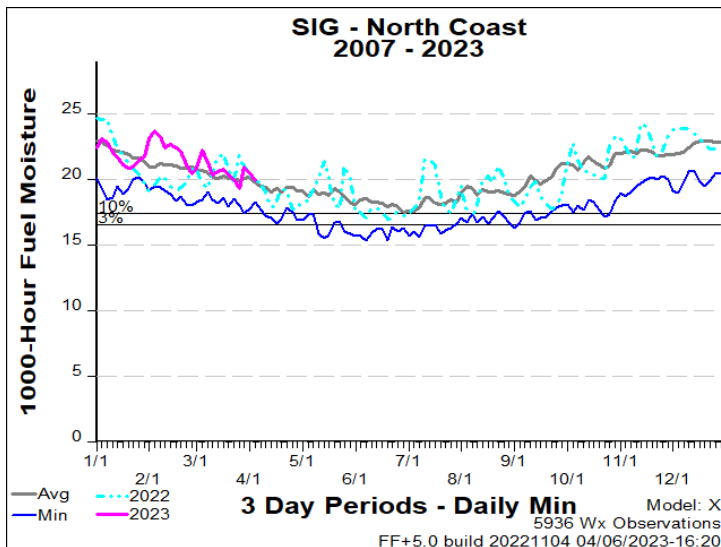
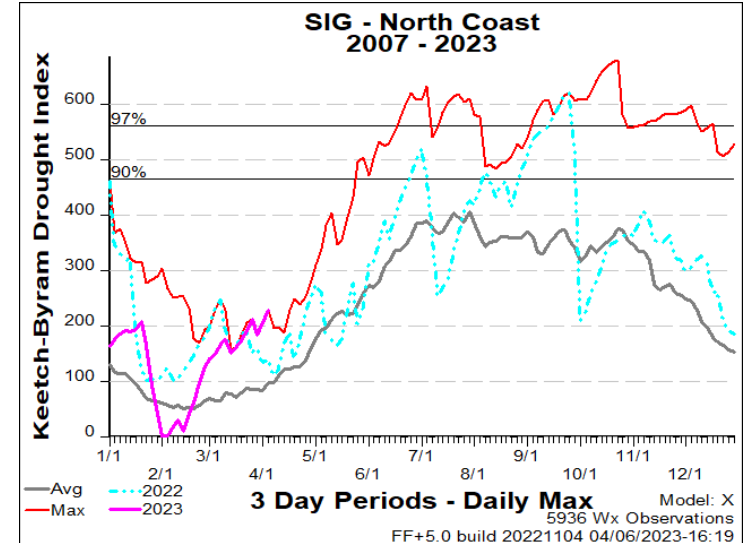
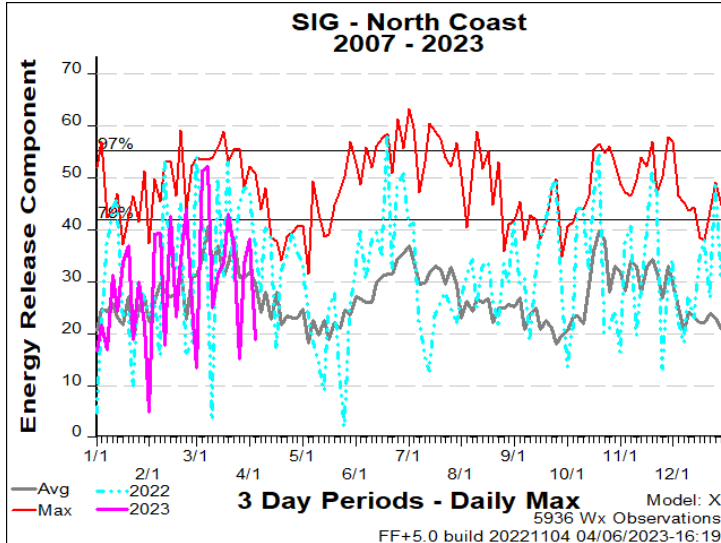
Dead fuel moisture forecast values are grouped into three categories based on historical percentiles, assessed using the FF+ All Days filter through 2021:

- 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.

Region Specific – North Coast



Weekly Outlook

Northern Coastal 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 07-Apr	SAT 08-Apr	SUN 09-Apr	MON 10-Apr	TUE 11-Apr	WED 12-Apr	THU 13-Apr
Avg. Max. Temp. (°F)	57	52	57	62	68	75	79
Avg. Min. Humidity (%)	77	80	56	49	40	40	43
Avg. 20' Wind Speed (mph)	10	12	15	11	7	6	6
Avg. Wind Direction*	NE	NE	NE	NE	NE	WSW	SW
Avg. Probability of Precip. (%)	77	83	30	8	8	7	9
Days Since a Wetting Rain**	0.0	0.0	0.3				
Forecast ERC (Fuel Model X)	17.9	7.8	12.6	16.9	18.6	25.1	27.0
Forecast BI (Fuel Model X)	60.7	34.8	46.9	46.5	36.5	45.3	42.4
Forecast IC (Fuel Model X)	3.9	1.2	2.4	2.8	2.7	4.6	4.7
Forecast 100-Hr. FMC	20.0	21.8	23.3	23.1	22.0	20.5	19.2
Forecast 1000-Hr. FMC	22.3	22.3	22.4	22.3	22.4	22.5	22.5
KBDI	251.5						

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.

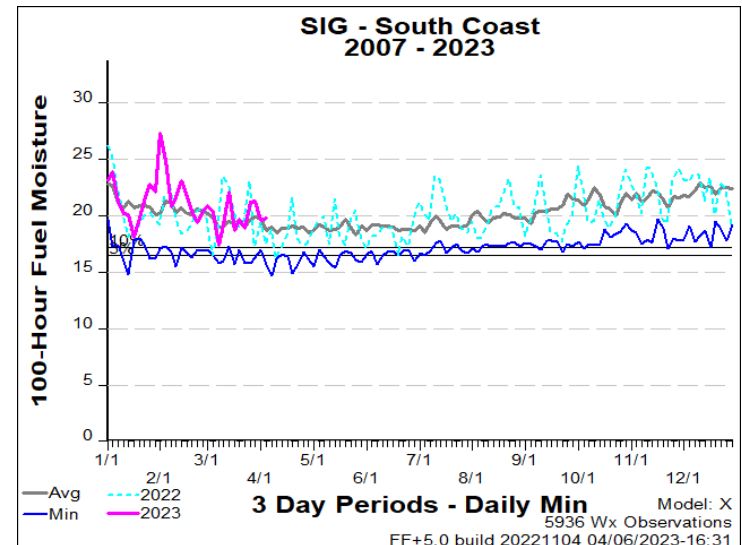
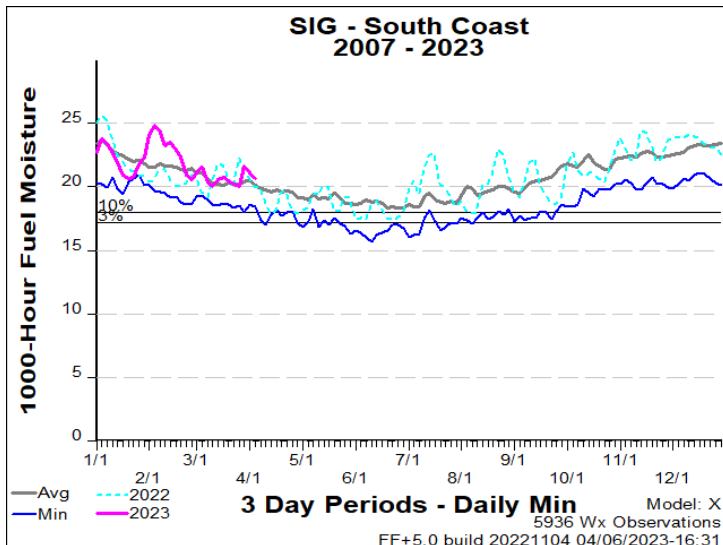
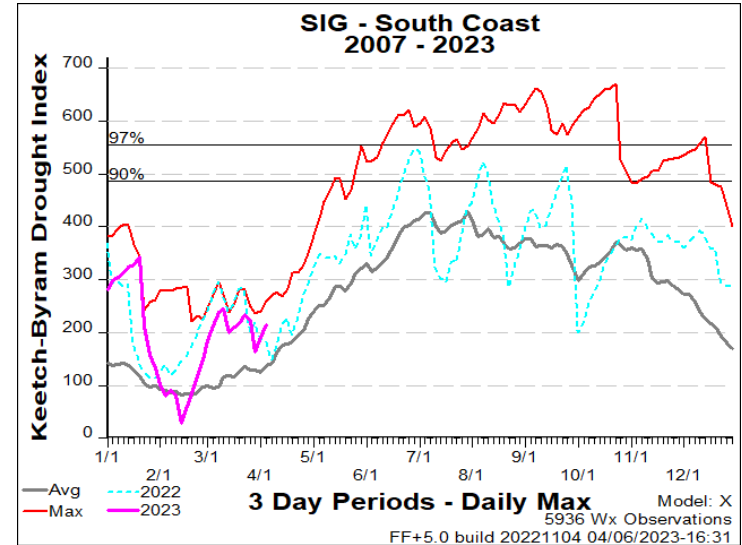
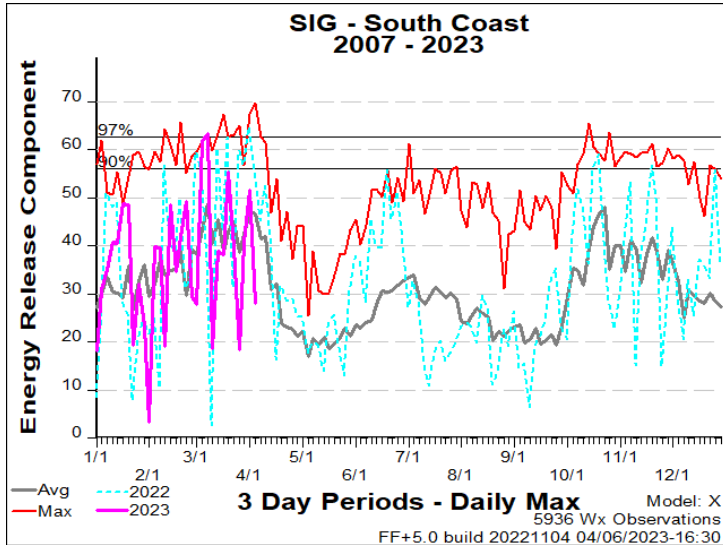
Values in the table above are averages from 4 stations in this FDRA:

- Elizabeth City (311503)
- Greens Cross (313001)
- Pocosin Lakes (315201)
- Fairfield (317901)

KEY	Low to Moderate Burning Conditions	Burning Conditions Can be High CAUTION	Burning Conditions Can be Critical WATCH OUT!
Avg. Max. Temp.	Less than 45°F	Between 45°F and 55°F	Greater than 55°F
Avg. Min. Humidity	Greater than 40%	Between 35% and 40%	Less than 35%
Avg. 20' Wind Speed	Less than 10 mph	Between 10 mph and 15 mph	Greater than 15 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 39.3	Between 39.3 and 48	Greater than 48
Burning Index	Less than 78	Between 78 and 96.8	Greater than 96.8
Ignition Component	Less than 9.3	Between 9.3 and 12.8	Greater than 12.8
100-Hour Fuel Moisture	Greater than 17.7%	Between 16.8% and 17.7%	Less than 16.8%
1000-Hour Fuel Moisture	Greater than 18.5%	Between 17.5% and 18.5%	Less than 17.5%
KBDI	Less than 365	Between 365 and 463	Greater than 463

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

Region Specific – South Coast



Weekly Outlook

Southern Coastal 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 07-Apr	SAT 08-Apr	SUN 09-Apr	MON 10-Apr	TUE 11-Apr	WED 12-Apr	THU 13-Apr
Avg. Max. Temp. (°F)	65	52	58	65	70	75	78
Avg. Min. Humidity (%)	77	83	57	46	39	39	42
Avg. 20' Wind Speed (mph)	9	13	16	12	7	5	6
Avg. Wind Direction*	E	NE	NE	NE	NE	SSW	S
Avg. Probability of Precip. (%)	75	96	44	10	10	12	15
Days Since a Wetting Rain**	0.4	0.0	0.0				
Forecast ERC (Fuel Model X)	20.1	5.2	8.1	19.1	20.2	21.4	22.8
Forecast BI (Fuel Model X)	64.8	27.9	35.1	53.8	44.0	41.6	47.6
Forecast IC (Fuel Model X)	4.0	0.7	1.6	3.9	3.7	4.1	5.3
Forecast 100-Hr. FMC	19.1	21.0	23.3	23.8	22.0	20.7	19.7
Forecast 1000-Hr. FMC	22.5	22.6	22.6	22.6	22.6	22.8	22.8
KBDI	254.9						

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 7 stations in this FDRA:

- Finch's Station (317501)
- Beaufort (317801)
- New Bern (319004)
- Turnbull Creek (319302)
- Hofmann Forest (319507)
- Whiteville (319701)
- Sunny Point (319803)

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 65°F	Greater than 65°F
Avg. Min. Humidity	Greater than 40%	Between 35% and 40%	Less than 35%
Avg. 20' Wind Speed	Less than 5 mph	Between 5 mph and 10 mph	Greater than 10 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 36.4	Between 36.4 and 47.2	Greater than 47.2
Burning Index	Less than 68.3	Between 68.3 and 89.5	Greater than 89.5
Ignition Component	Less than 7.9	Between 7.9 and 12	Greater than 12
100-Hour Fuel Moisture	Greater than 18.2%	Between 17.3% and 18.2%	Less than 17.3%
1000-Hour Fuel Moisture	Greater than 19%	Between 18% and 19%	Less than 18%
KBDI	Less than 385	Between 385 and 486	Greater than 486

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

Outlook Summary Table – R1

Summary Table by FDRA using count of colored blocks in a day's forecast.

Forecast Subject to Change

Key: 4+ Red Blocks on a Day = "Critical" Day Potential; Red Color
4+ Yellow or Combo of Yellow/Red = "High" Day Potential; Yellow Color
6+ Blue-Green Blocks = "Low to Mod" Potential Day; Blue-green Color

Date	Day of Week	FDRA Matrix Summary - NCFS Region 1	
		North Coast	South Coast
7-Apr	Fri	Low/Mod	Low/Mod
8-Apr	Sat	Low/Mod	Low/Mod
9-Apr	Sun	Low/Mod	Low/Mod
10-Apr	Mon	Low/Mod	Low/Mod
11-Apr	Tues	Low/Mod	Low/Mod
12-Apr	Wed	Low/Mod	Low/Mod
13-Apr	Thurs	Low/Mod	Low/Mod

Wakefield NWS (Fire Weather Planning Forecast Discussion):

National Weather Service WAKEFIELD VA
423 PM EDT Thu Apr 6 2023

.DISCUSSION...

A strong cold front will bring showers and thunderstorms to the local area into tonight, with cooler weather expected from Friday through Saturday. Rain is likely across far southern Virginia and northeast North Carolina for much of Friday into Saturday. Dry and cool conditions are expected for Sunday, with a slow warming trend and continued dry conditions next week.

Newport/Morehead City NWS (Fire Weather Planning Forecast Discussion):

National Weather Service Newport/Morehead City NC
406 AM EDT Thu Apr 6 2023

.DISCUSSION...

Southerly flow will continue across Eastern NC through this evening. Within this regime, low clouds, will be a concern tonight into this morning. A cold front will then move south across Eastern NC early Friday morning. This will bring a stark wind shift with it, with winds quickly shifting around to a north or northeasterly direction. Winds will quickly increase behind the front as well, and be gusty through much of the upcoming weekend. Additionally, periods of rain will develop behind the front, with a widespread 1 to 2 inches of rain expected.

Wilmington NWS (Fire Weather Planning Forecast Discussion):

National Weather Service Wilmington NC
302 PM EDT Thu Apr 6 2023

.DISCUSSION...

A cold front will drop south through the Eastern Carolinas on Thursday night into Friday followed by a period of wet and cooler weather into the upcoming Easter weekend as front stalls to the south. Dry high pressure will build back in late in the weekend through early next week.

NC DAQ Air Quality Forecast - *Next Three Days*

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 forecast discussion from

This forecast was issued on **Thursday, April 6, 2023 at 2:22 pm.** ✔ This forecast is currently valid.

Today's Air Quality Conditions

Low Code Yellow daily average fine particulate concentrations are being observed today in some areas of the Piedmont, with Code Green elsewhere. Ozone concentrations are Code Green statewide.

[↻](#) 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

Friday and Saturday's weather will usher in a major airmass change for the area as a broad cold front drapes across the state from the north. By Friday afternoon, much cooler air will be in place statewide as the front becomes somewhat stationary to the south. Combined with high pressure over the upper Midwest nosing in and persistent northeasterly surface winds, strong cold air damming conditions will be in place. Aloft, isentropic lifting of Gulf of Mexico moisture over the region will promote widespread rain and clouds through Saturday night. Code Green air quality is expected both days.

Outlook

On Sunday, the rain will depart in the morning as upper-level winds shift more westerly. At the surface, northeasterly winds will continue to bring cool, clean air to the region. Air quality should remain in the Code Green range.

Author: *Kreuser - NC Division of Air Quality*

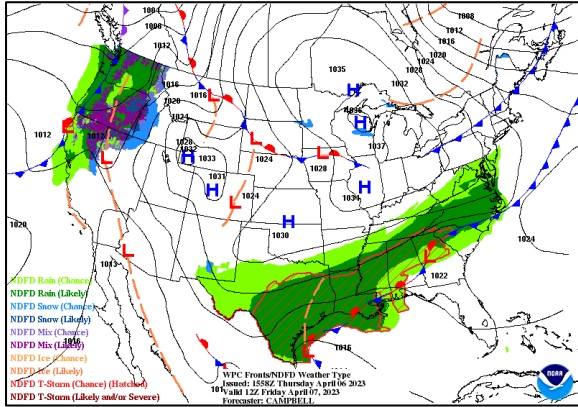
Extended Air Quality Outlook

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](#).

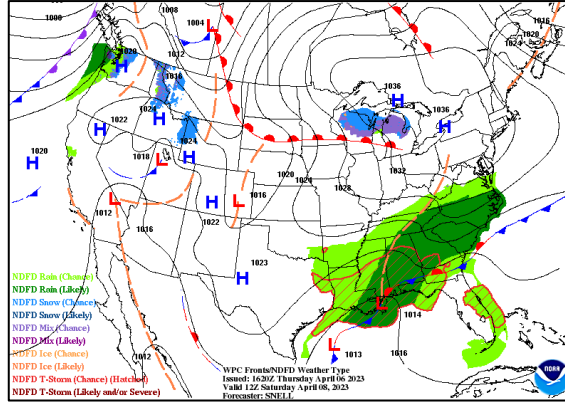
Forecast Day	AQI Range	Category Range
Thursday (Apr 6)	45 to 51	Green to Yellow
Friday (Apr 7) 🌧️	30	Green
Saturday (Apr 8)	25	Green
Sunday (Apr 9)	35	Green

WPC Forecasted Surface Fronts & Sea-Level Pressures

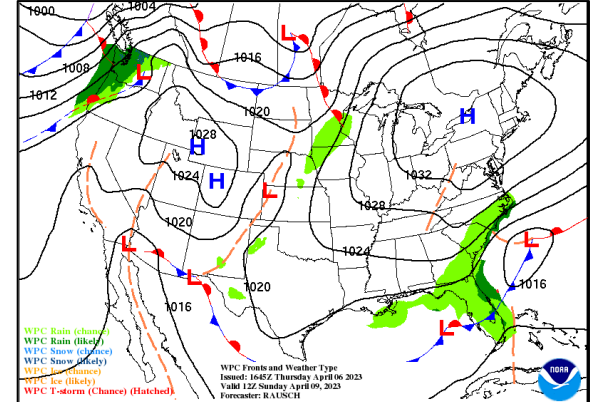
Friday - 800 am



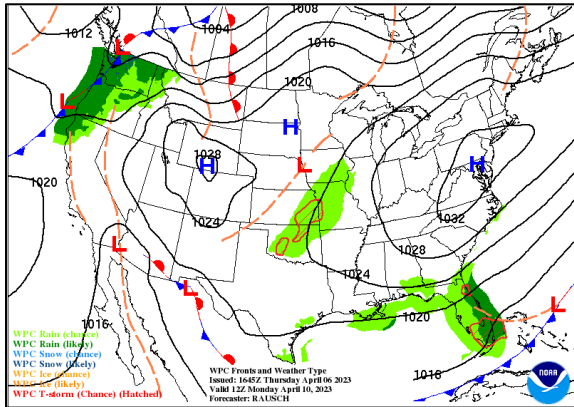
Saturday - 800 am



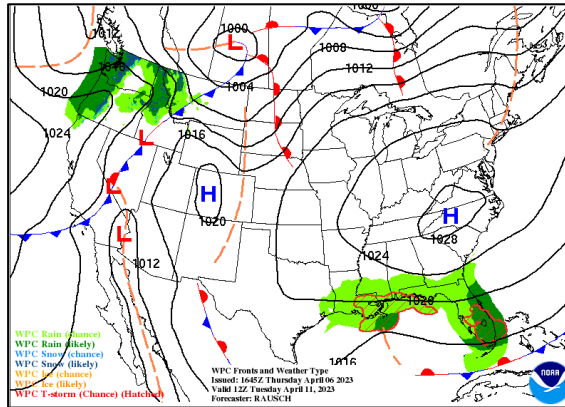
Sunday - 800 am



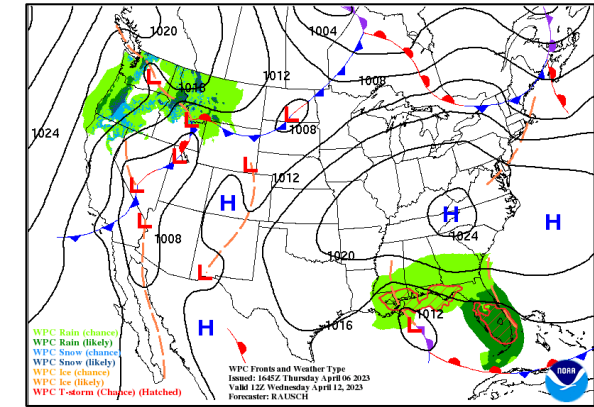
Monday - 800 am



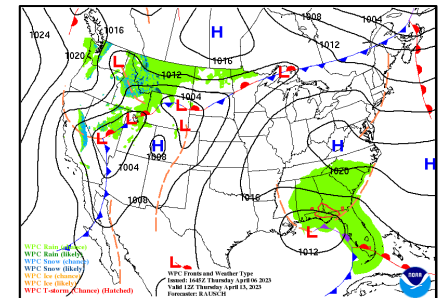
Tuesday - 800 am



Wednesday - 800 am

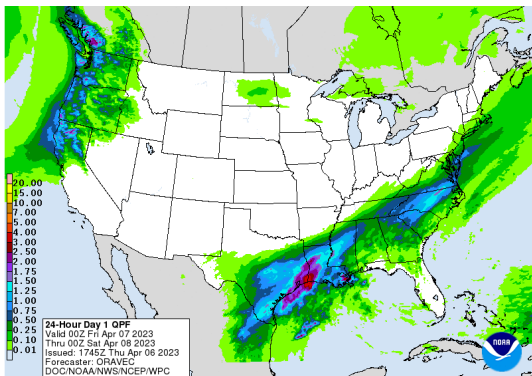


Thursday - 800 am

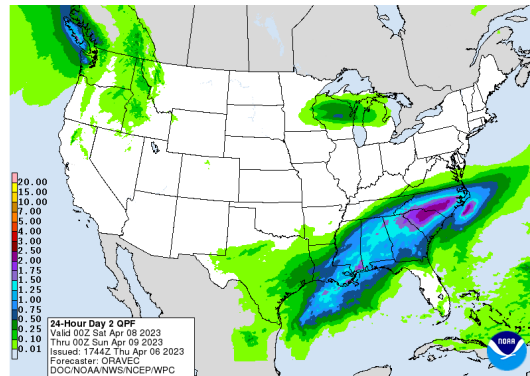


Quantitative Precipitation Forecast, 7-Day

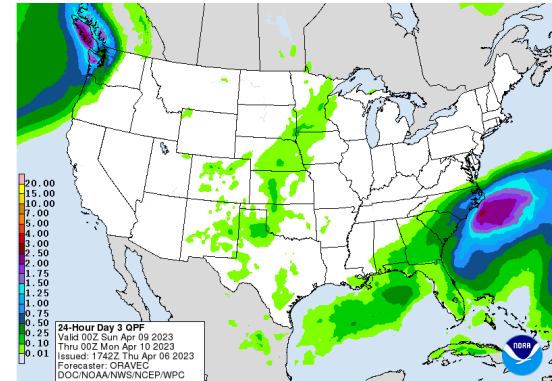
Day - 1



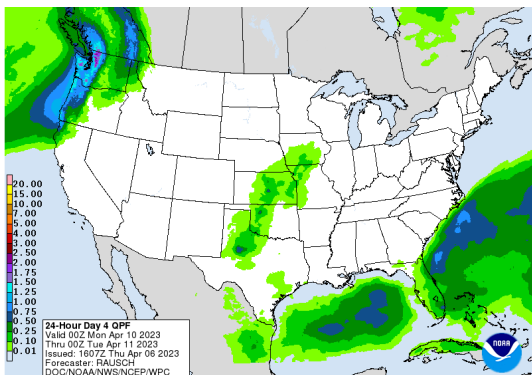
Day - 2



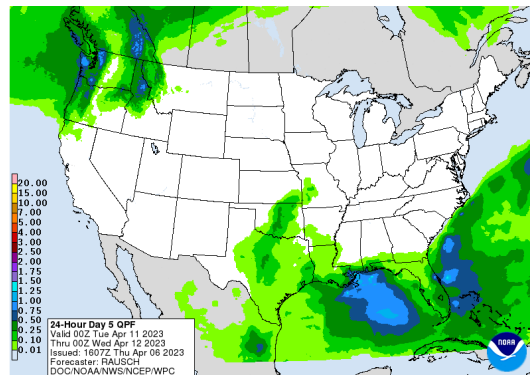
Day - 3



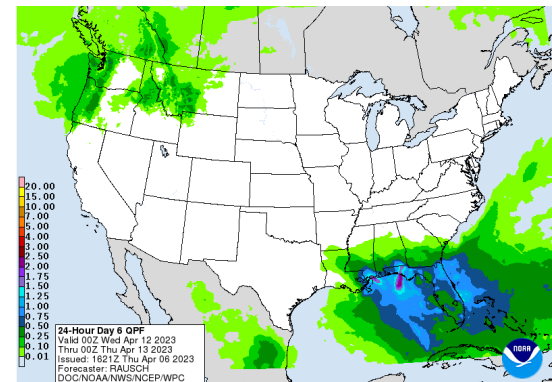
Day - 4



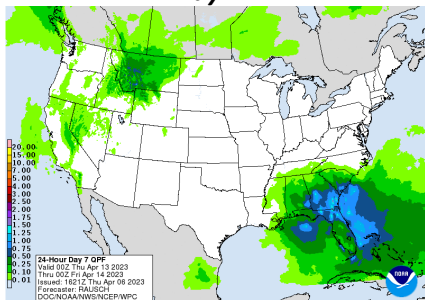
Day - 5



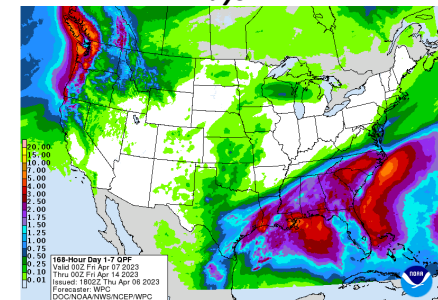
Day - 6



Day - 7



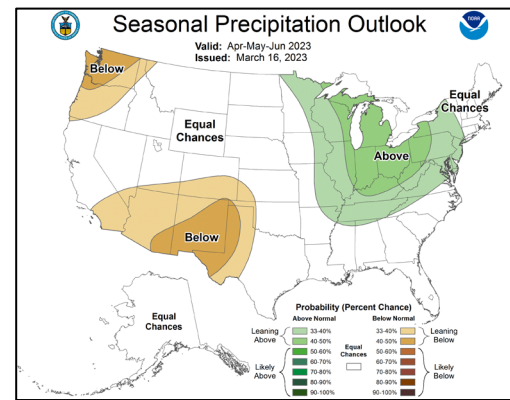
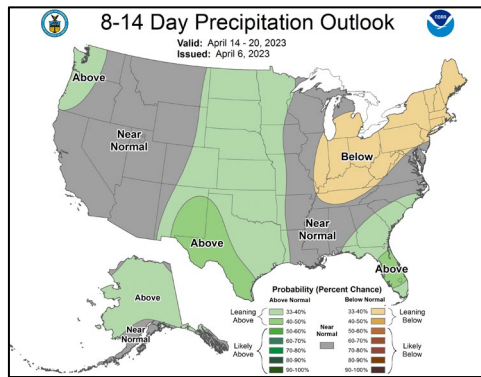
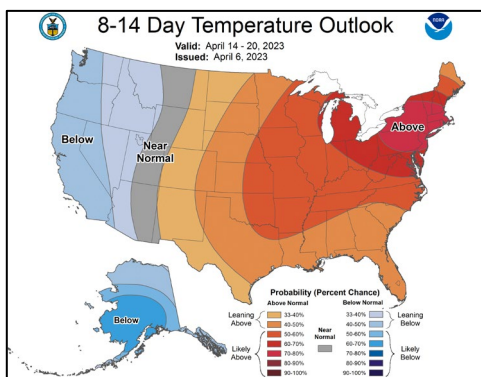
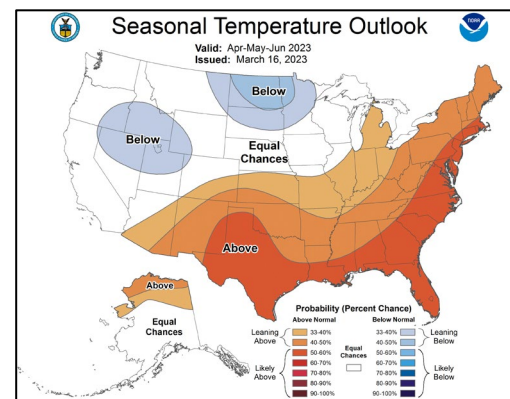
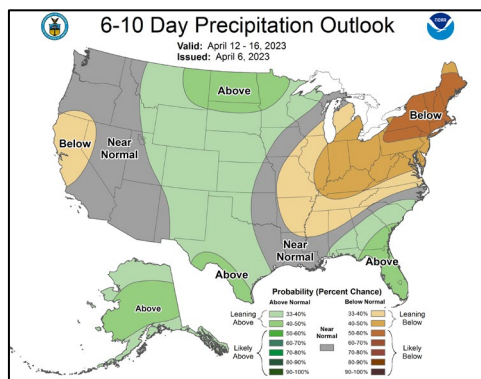
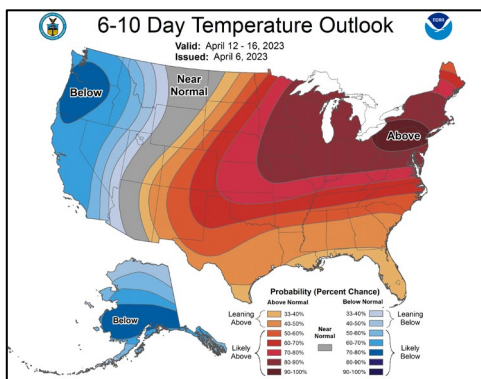
Days 1 - 7



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

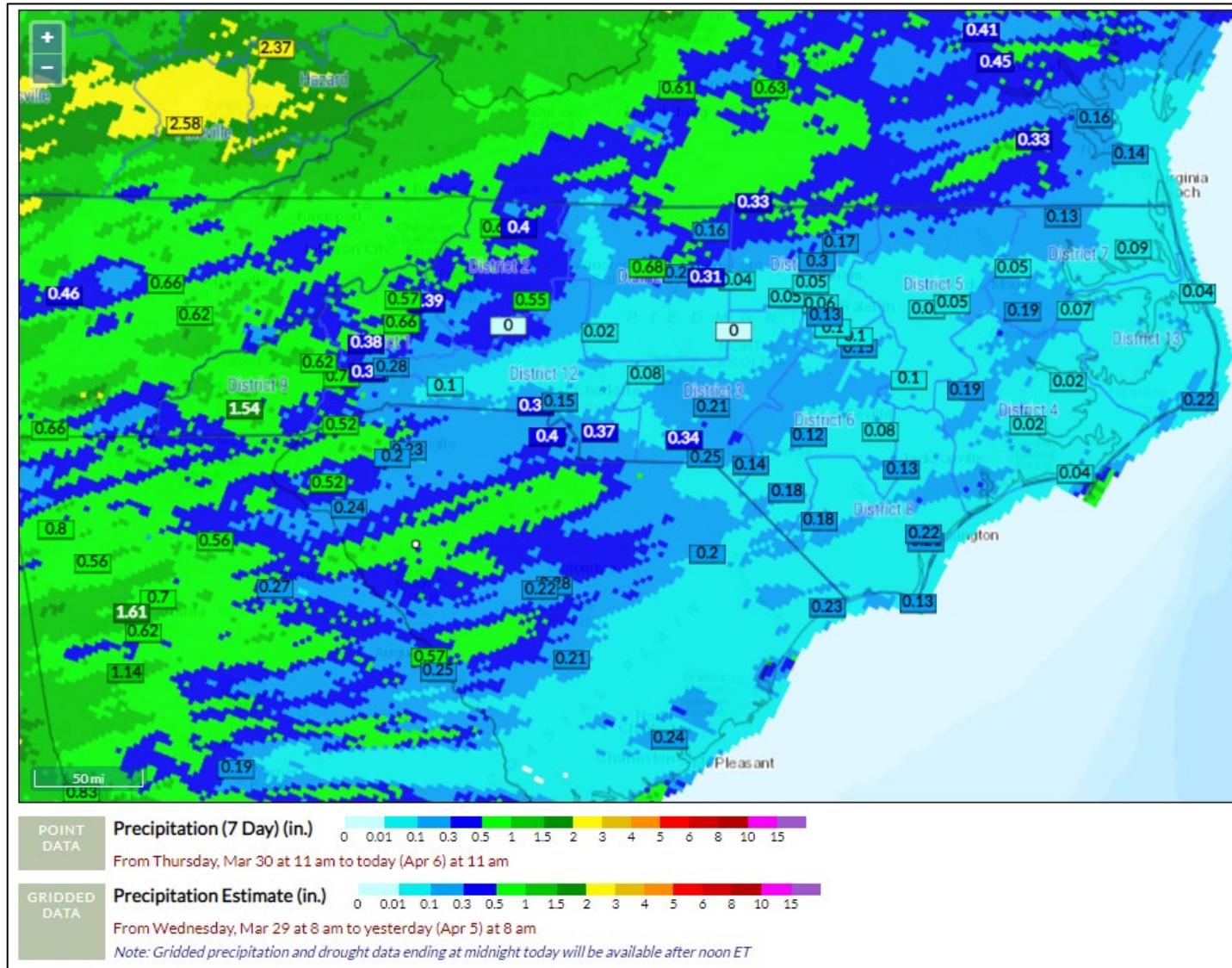
Temp & Precip Outlook

6-10 Day, 8-14 Day & Seasonal (Apr/May/June)



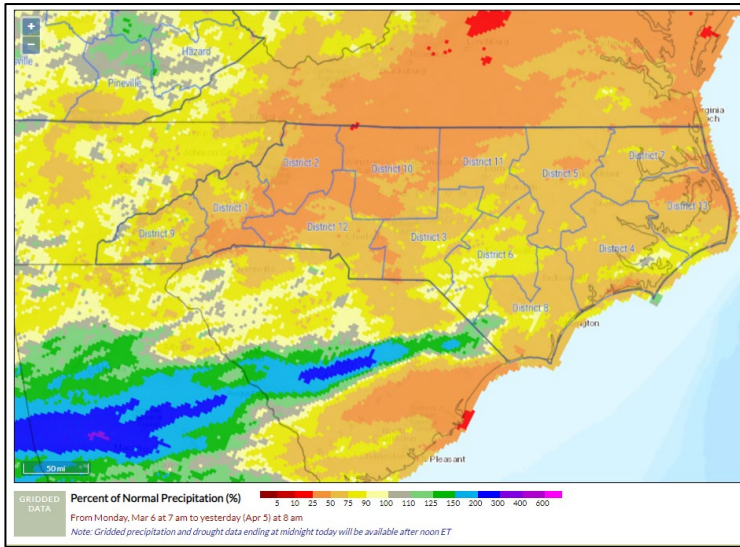
7 Day Precipitation Totals

FWIP (Point accumulation ending at 1100 on 4/6, Grid ending 0800 4/5)

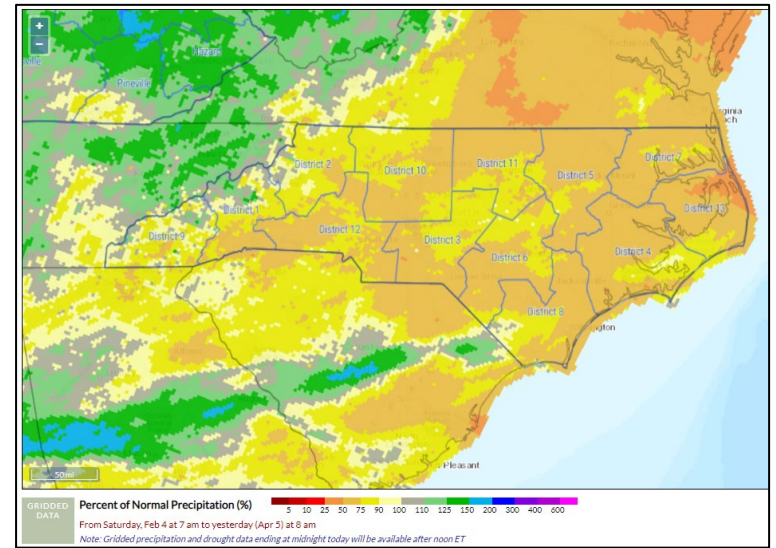


Percent of Normal Precip, FWIP (Ending 0800 4/5)

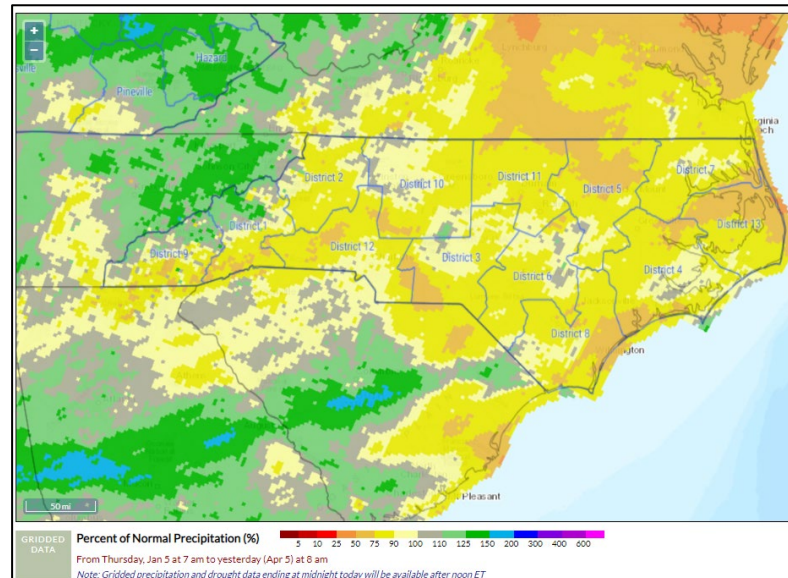
30-Day % of Normal



60-Day % of Normal

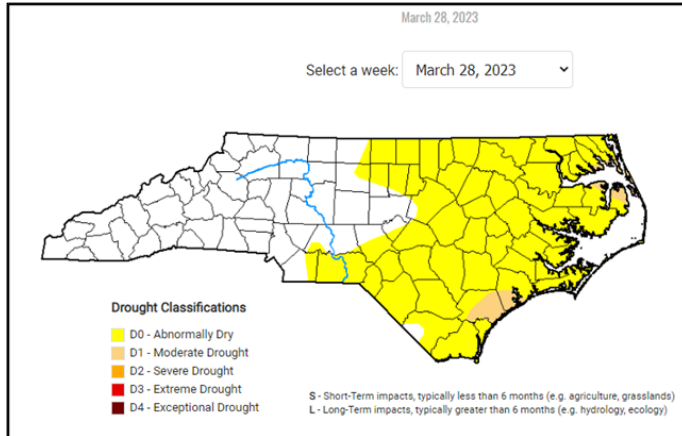


90-Day % of Normal

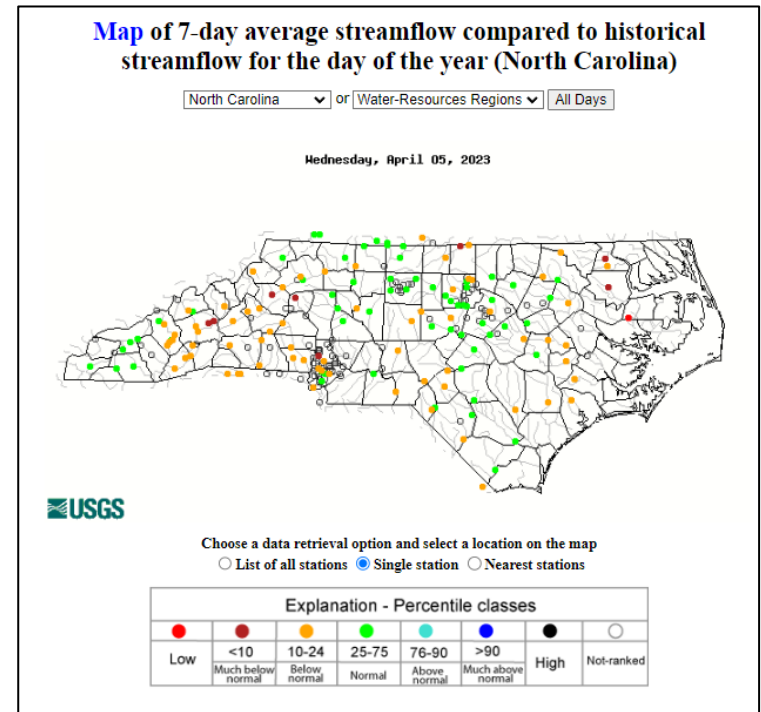
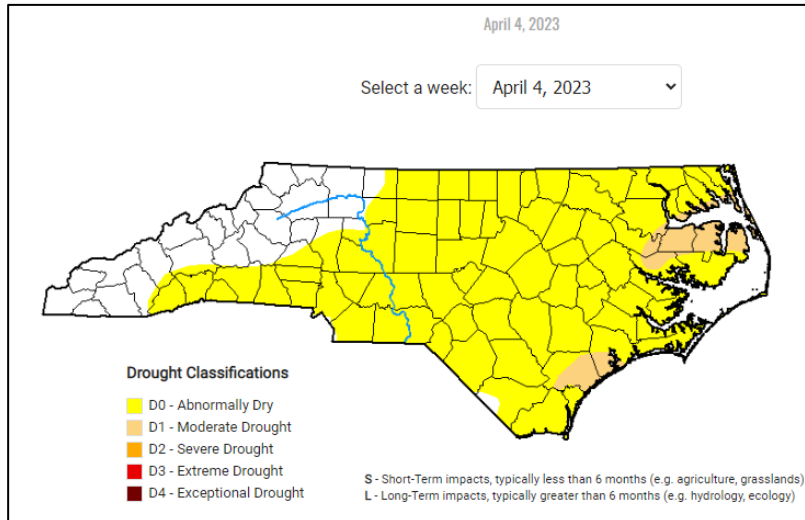


Drought Situation

Previous Week:



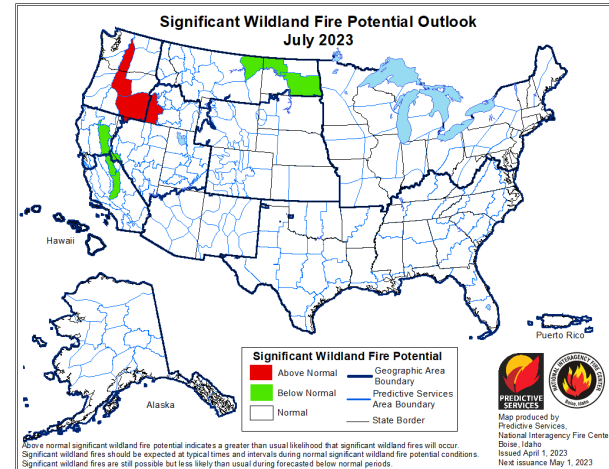
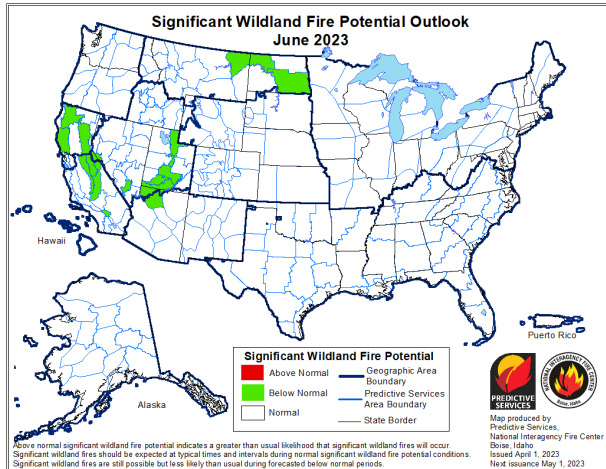
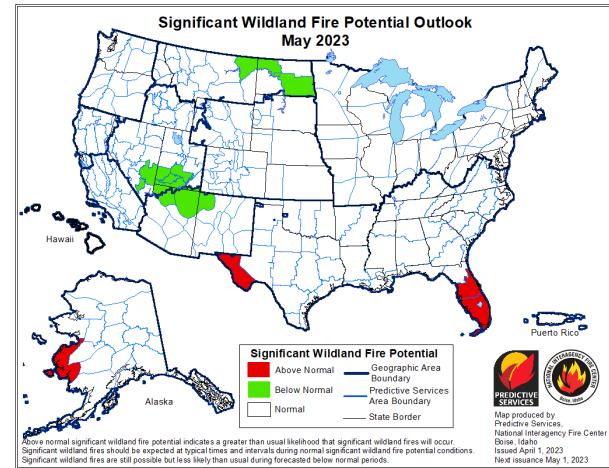
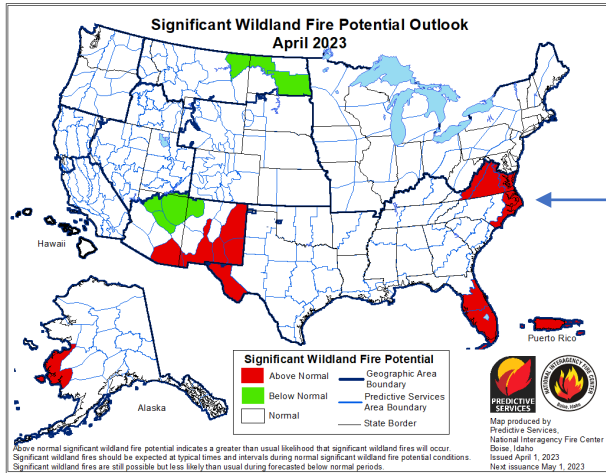
Current Week:



- D-0 Abnormally Dry Conditions Expansion (~75% of State)
- D-1 Moderate Drought in Several Counties. (~5% of State)
- 7-Day Stream flow averages continue to decline, note decline in both East and West.
- Example: 7-Day average for the Van Swamp gage in Washington County at < 3rd Percentile of flow yesterday (see above)

Significant Wildland Fire Potential Outlook:

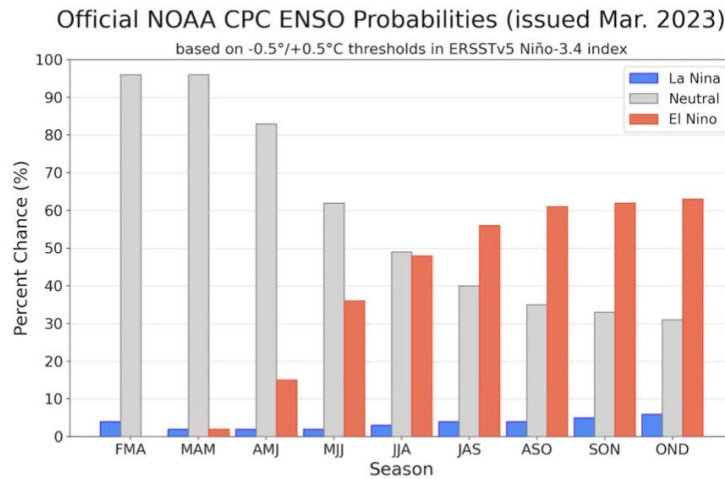
Updated 4/1/23 – Next Update on 5/1/23



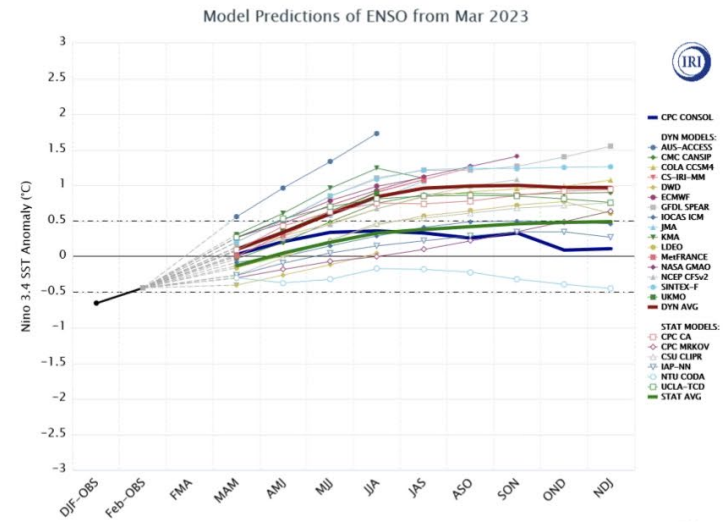
A significant fire is one that requires resources from outside the district (other than aviation). IA potential is based more on shorter term weather factors. Just a few days of dry weather can increase IA activity considerably as we have already seen this year.

ENSO Note

ENSO (El Niño-Southern Oscillation)



La Niña has ended, and ENSO-neutral conditions are expected to continue through the Northern Hemisphere spring and early summer 2023. There is a chance of El Niño forming during the summer, with at least a 60% chance by the August-October period.

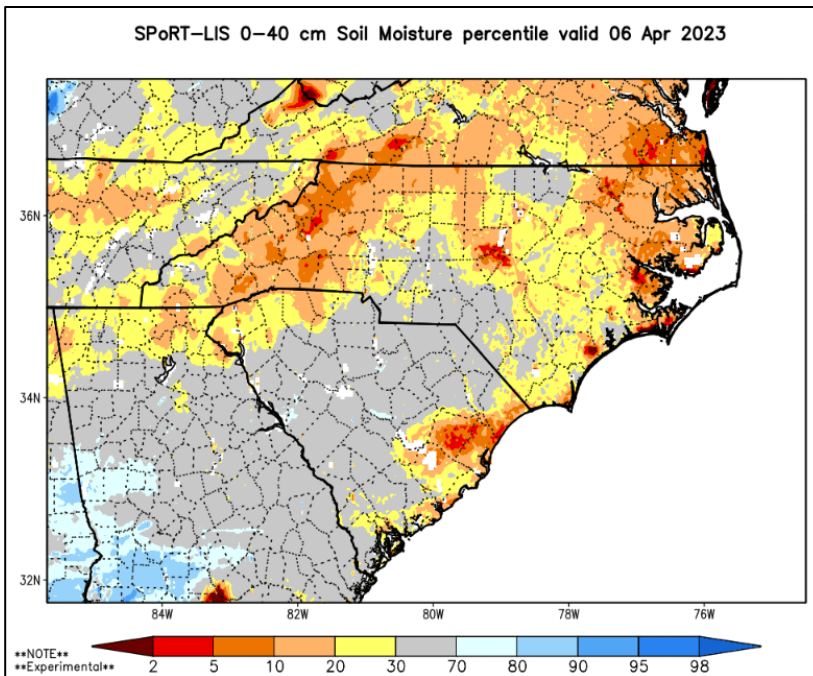


https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-sst_table

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

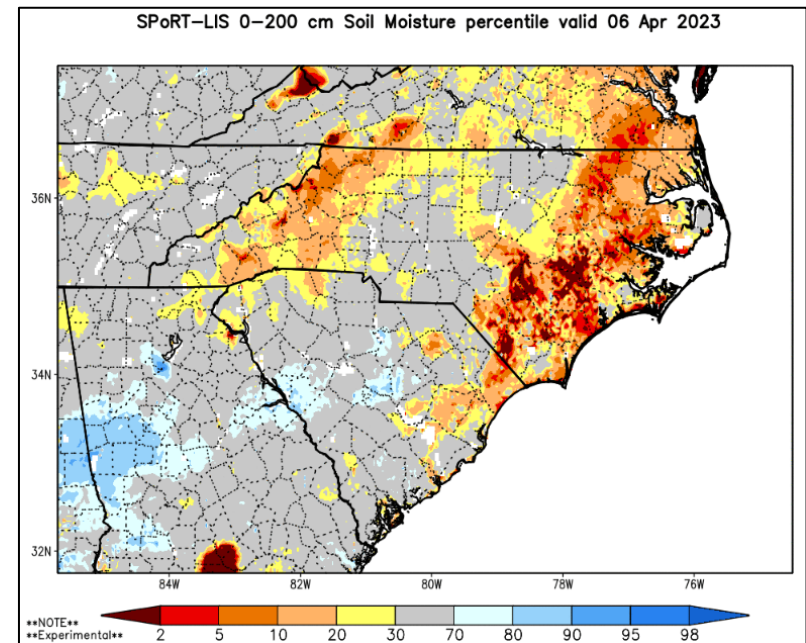
SPoRT Relative Soil Dryness

0-40 cm Depth



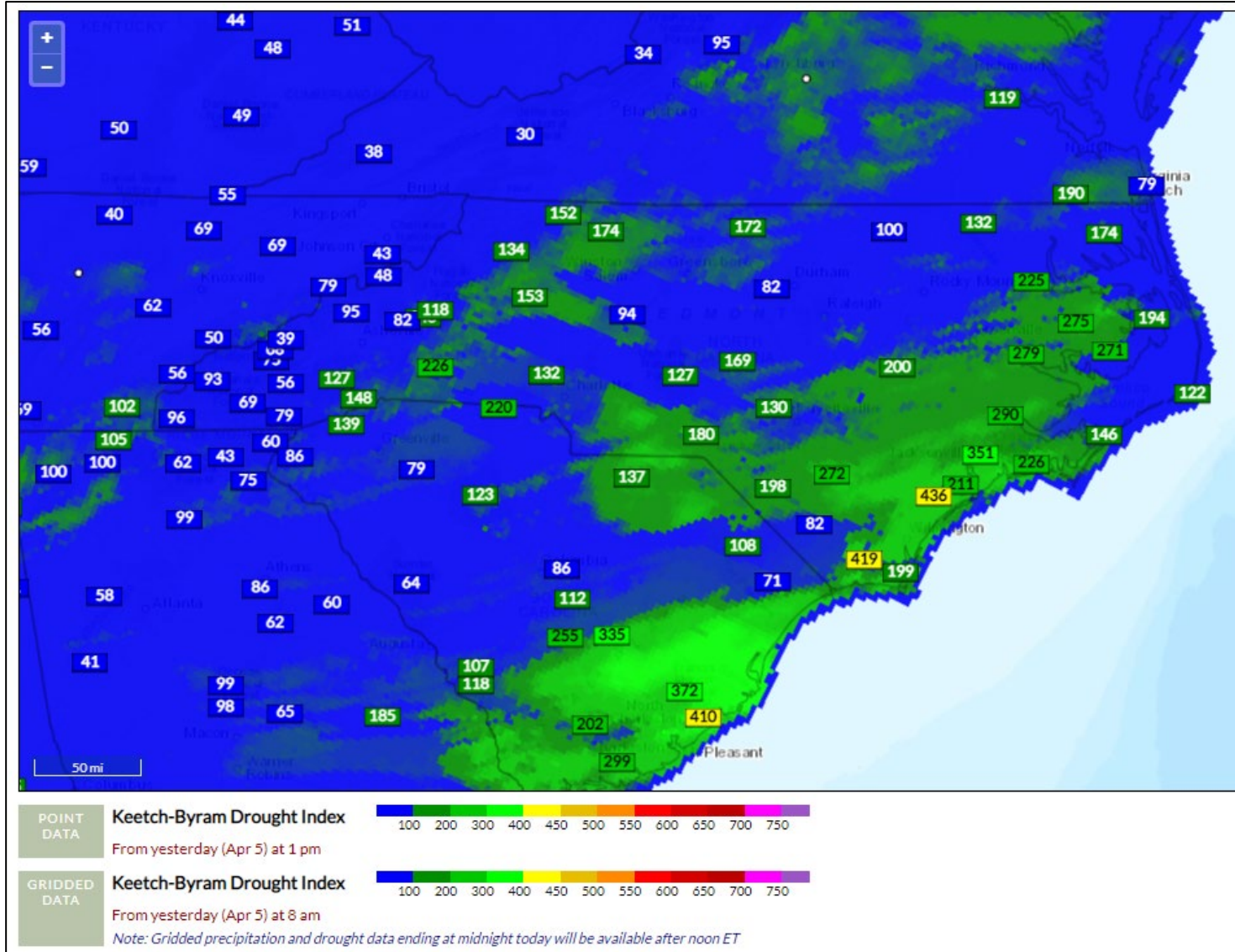
- Overall Modeled Drying Trend Continues

0-200 cm Depth



KBDI - Gridded & Station Points

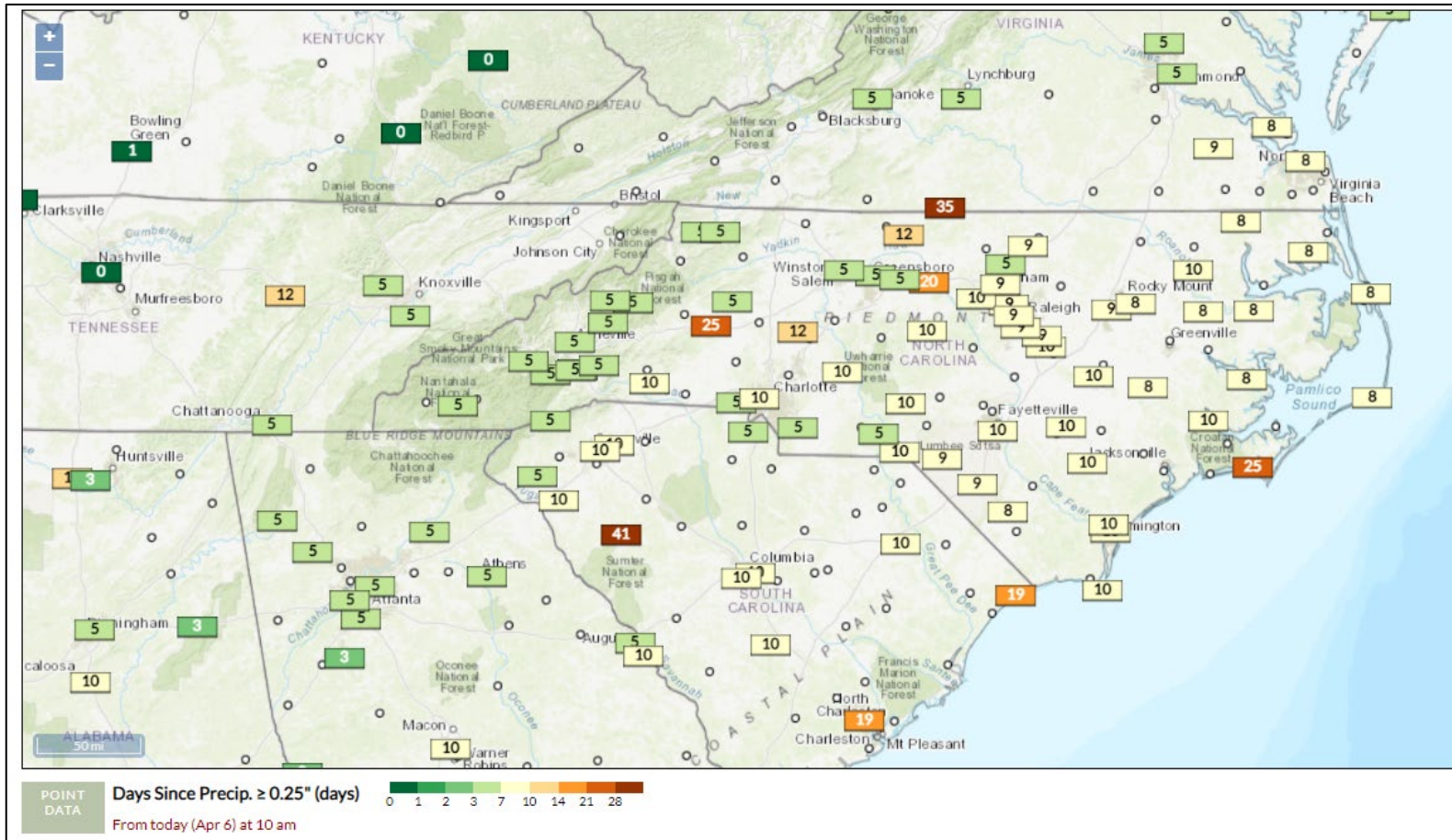
FWIP (Point calculation from 1300 on 4/5, Grid ending 0800 4/5)



Days Since Daily Precip $\geq 0.25''$

Note – Latest product run was on 4/6/23 at 1000.
Does not consider rainfall after that point.

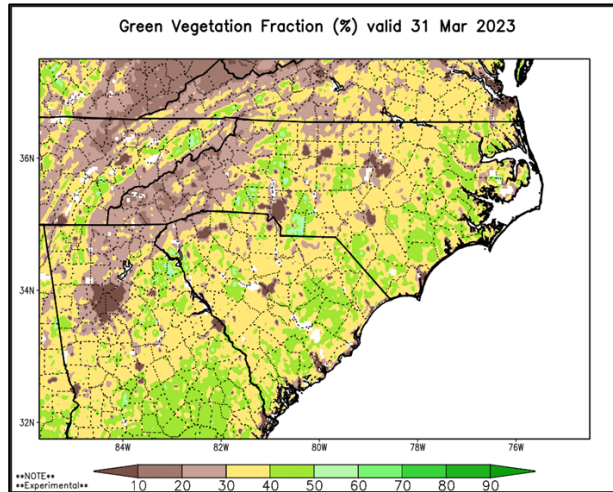
*Displaying ECONet, ASOS and AWOS Sites Only



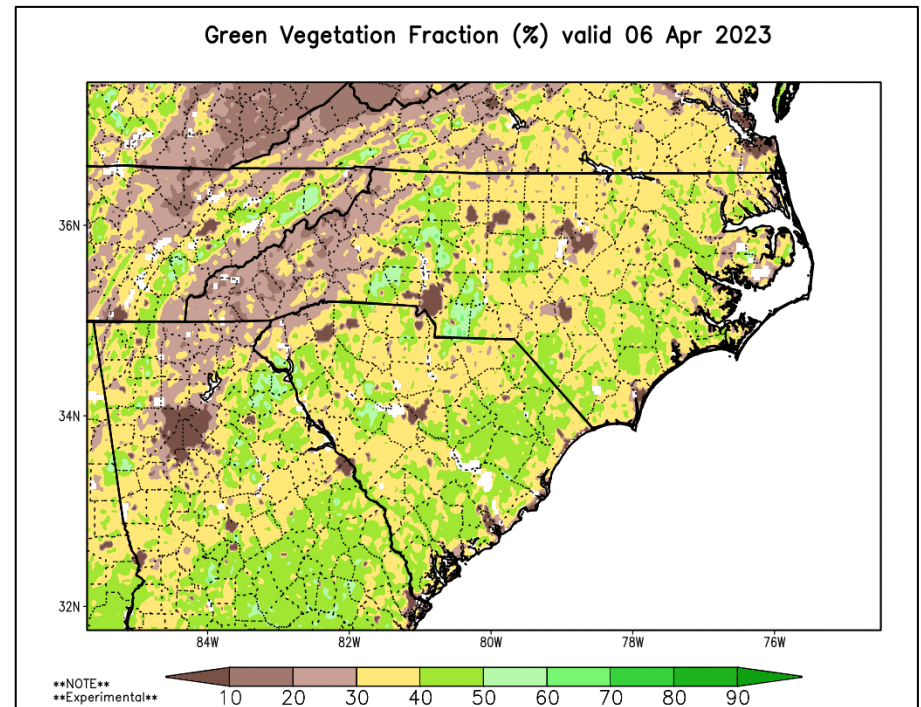
Green Fraction & Green-Up Anomaly

- Green-Up continues, generally about two weeks ahead.

Last Week



Current



(Some areas previously shown with green color followed later by brown color in coastal areas likely due to larger scale agricultural activities.)