

# Weekly Fire Danger Assessment NCFS - Region I

For Time Period:  
Saturday (3/11/23) to Friday (3/17/23)

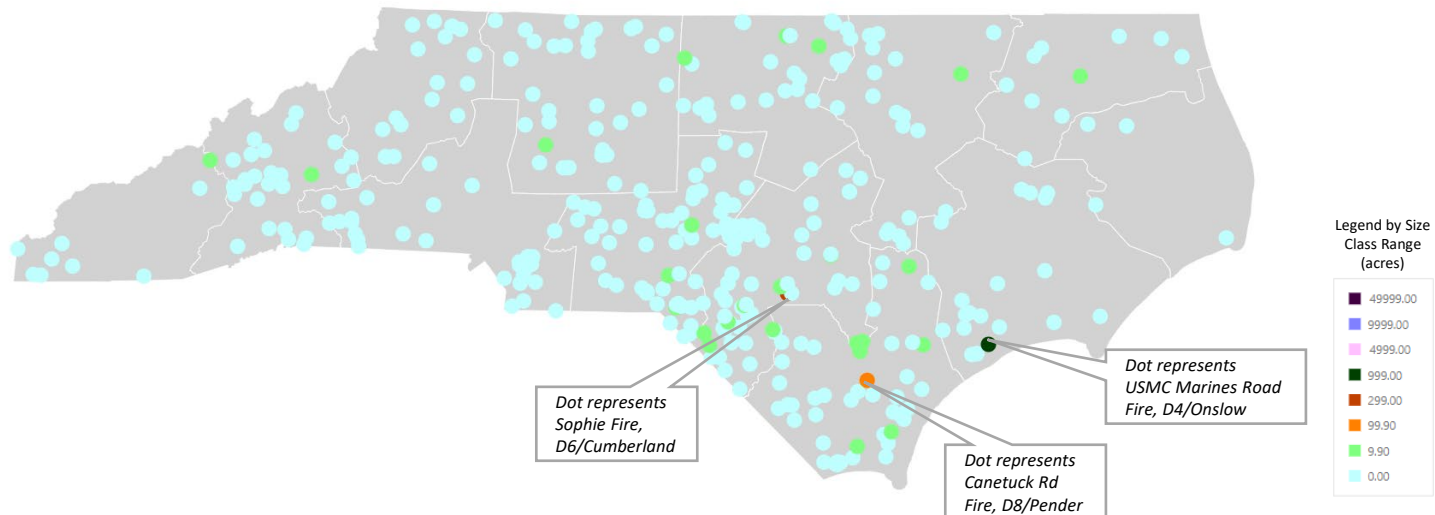
# Past Week's Signal 14 Activity

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:	3/3 - 3/9, 2023		
Type	Number	Acres	
Wildfires:	76	444.4	
Prescribed Fires:	31	3,285	

fiResponse Incident Location Map (for general context)

Date Range: 3/3 – 3/9, 2023

Report: Business Intelligence Module, Response Trends Map



# Current and Forecasted Fire Danger Conditions by FDRA

R1

# Regional Comments for this Week – R1

- Notes from D4/D8 Areas this Week

- Fires burn hot but haven't seen any fast rates of spread.
- Spotting has been an issue.
- Turf is burning well.
- Fire still spreading well in grass.
- Duff layer available causing some mop-up issues.
- Organics are available, except in deep pocosins holding water.
- Bay fuels won't sustain fire very well after dark, even with wind. Bay fuels are not transferring heat well to each other, limiting spread rates.

- Notes from D7/D13 Areas this Week

- Vines and understory burning well in rx fire.
- Fire still spreading in grass well.
- Low rh recovery nights this week had impact on fine fuels.

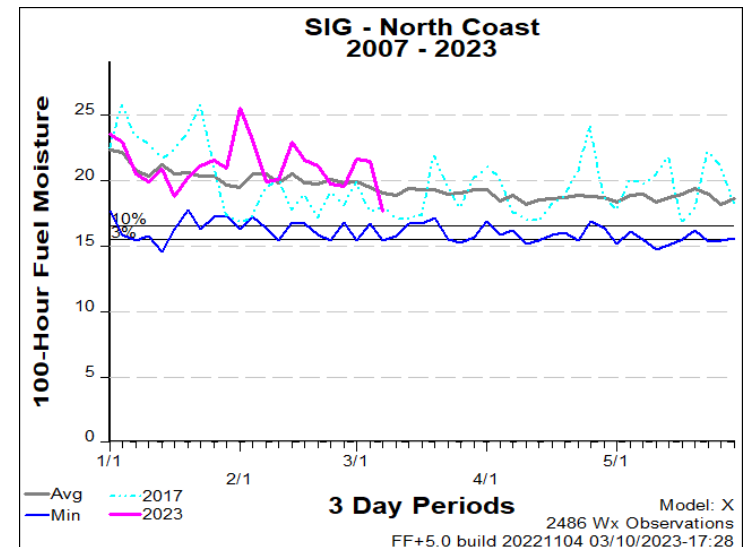
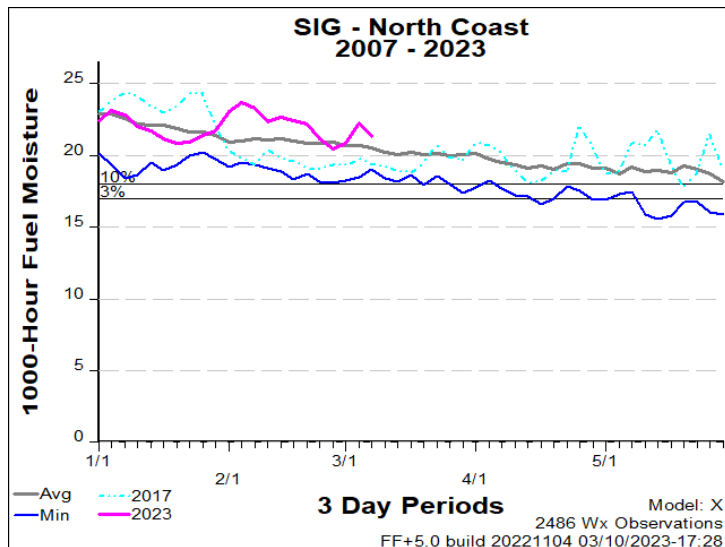
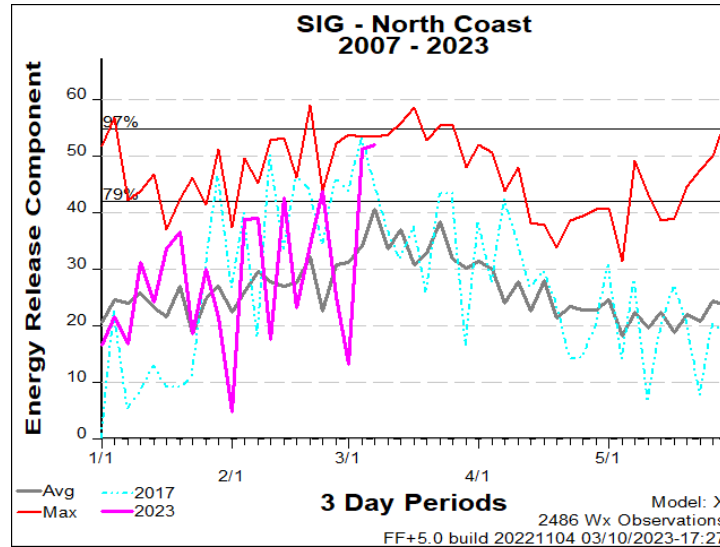
# Important notes for next slide group:

A. Current ERC, 100-Hr & 1000-Hr values are extracts from FF+ using observation data downloaded from WIMS.

## B. Weekly Outlook - FDRA General Fire Danger Forecast Matrix:

1. The matrix is an adaption of the existing Weekly NCFS Region-3 Fire Danger Assessment Matrix Process.
  - Matrix exposes existing available data in the same fashion, but on all 9 FDRAs.
  - Uses Fire Danger Adjective Rating Concept – Grouped into three bins (see notes on 3 & 4 below).
  - Weather variable ranges were defined by FDRA stakeholders and relate to Pocket Card notes.
  - **Is in development**, with goal being to have this as another tool on FWIP with daily automated updates.
2. The forecast matrix was created from standard NFDRS Forecast Outputs.
  - 7-Day Forecast Cycle from NWS using NFDRS Observations & Outputs generated from SIG Stations in FDRA
3. Fire Danger Forecast Indices/Component Values are grouped into three categories (All Days Filter):
  - Low to Moderate (0-74<sup>th</sup> Percentile); shown in Blue-Green
  - High (75<sup>th</sup>-89<sup>th</sup> Percentile) – shown in Yellow
  - VH to Extreme (90<sup>th</sup>+ Percentile) – shown in Red, called Critical
4. Dead Fuel Moisture Forecast Values are grouped into three categories (All Days Filter):
  - Low to Moderate ( 26<sup>th</sup>-100<sup>th</sup> Percentile); shown in Blue-Green
  - High (11<sup>th</sup>-25<sup>th</sup> Percentile); shown in Yellow
  - VH to Extreme (0-10<sup>th</sup> Percentile) – shown in Red, called Critical
5. Other Notes:
  - **\*\*Read the Key and Notes associated with each FDRA (included with matrix image).\*\***
  - Forecasts are variable and can change.
  - Is another tool for gaining better situational awareness by exposing the data in an easier to digest format.
  - Feedback is appreciated.

# 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	SAT 11-Mar	SUN 12-Mar	MON 13-Mar	TUE 14-Mar	WED 15-Mar	THU 16-Mar	FRI 17-Mar
Avg. Max. Temp. (°F)	54	53	60	52	53	59	68
Avg. Min. Humidity (%)	38	55	60	34	31	33	43
Avg. 20' Wind Speed (mph)	12	5	10	14	13	7	8
Avg. Wind Direction*	WNW	SSW	WSW	WNW	WNW	WNW	SW
Avg. Probability of Precip. (%)	3	89	45	0	0	5	14
Days Since a Wetting Rain**	8.0	0.0	0.0				
Forecast ERC (Fuel Model X)	23.5	27.3	7.1	32.7	42.7	42.7	36.2
Forecast BI (Fuel Model X)	99.6	49.8	32.1	113.7	122.3	87.5	74.4
Forecast IC (Fuel Model X)	5.2	2.4	1.2	7.4	10.2	7.0	5.6
Forecast 100-Hr. FMC	18.2	18.3	19.4	20.5	20.5	19.4	18.2
Forecast 1000-Hr. FMC	23.3	23.2	23.4	23.0	22.9	22.9	22.8
KBDI	175.3						

### 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.

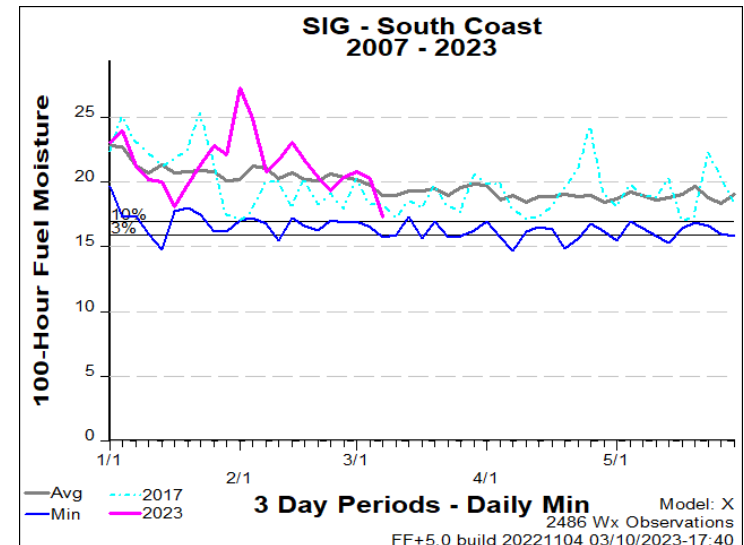
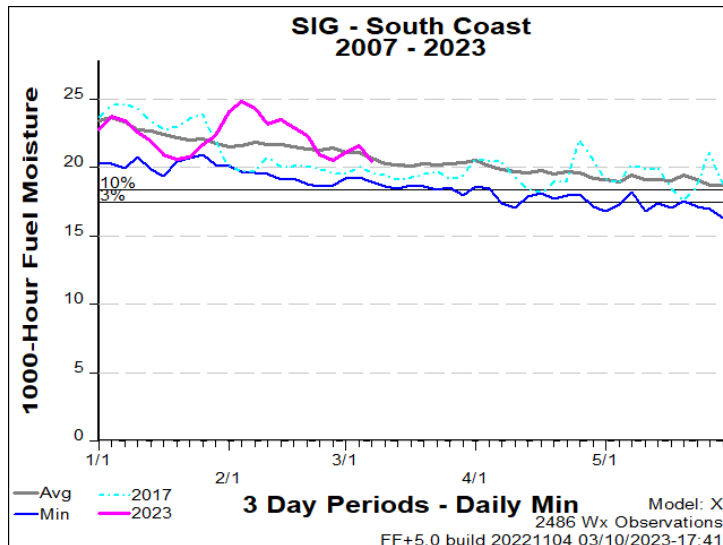
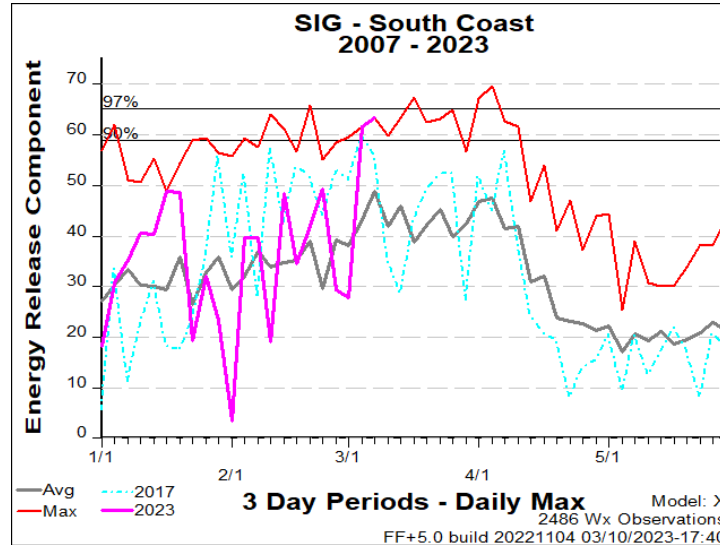
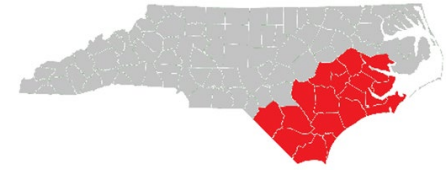
Values in the table above are averages from 4 stations in this FDRA:

- 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	SAT 11-Mar	SUN 12-Mar	MON 13-Mar	TUE 14-Mar	WED 15-Mar	THU 16-Mar	FRI 17-Mar
Avg. Max. Temp. (°F)	58	56	63	54	56	63	71
Avg. Min. Humidity (%)	31	57	51	30	27	29	41
Avg. 20' Wind Speed (mph)	10	5	9	12	11	6	7
Avg. Wind Direction*	WNW	E	W	NW	NW	WNW	SW
Avg. Probability of Precip. (%)	2	88	16	0	0	4	12
Days Since a Wetting Rain**	5.9	0.0	0.0				
Forecast ERC (Fuel Model X)	25.9	34.1	8.1	40.0	45.5	47.5	39.3
Forecast BI (Fuel Model X)	103.5	65.4	35.6	121.6	121.8	82.8	98.7
Forecast IC (Fuel Model X)	6.2	4.0	1.8	9.6	10.3	7.4	8.6
Forecast 100-Hr. FMC	19.0	19.2	20.5	21.4	20.9	19.5	18.2
Forecast 1000-Hr. FMC	22.9	22.8	23.0	22.8	22.7	22.7	22.6
KBDI	261.9						

### 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
11-Mar	Sat	High	High
12-Mar	Sun	Low/Mod	Low/Mod
13-Mar	Mon	Low/Mod	Low/Mod
14-Mar	Tues	High	High
15-Mar	Weds	High	High
16-Mar	Thurs	High	High
17-Mar	Fri	Low/Mod	High

# Weather Outlook Discussion

## **MHX NWS:**

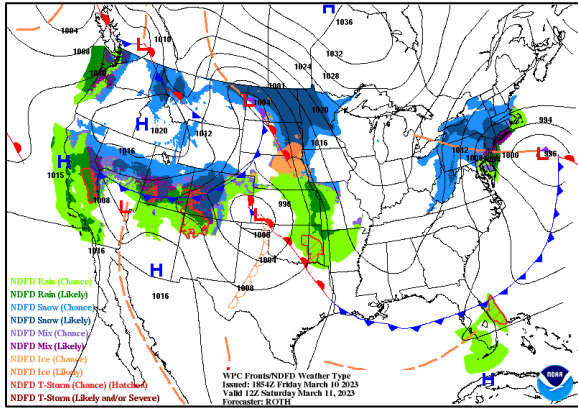
.DISCUSSION...

A quick moving frontal system will impact the area through this evening, with colder high pressure moving in behind it for the weekend. Another strong low pressure system will move through the region late Sunday into Monday, with well below normal conditions expected by mid next week. High pressure will build over the area through late next week.

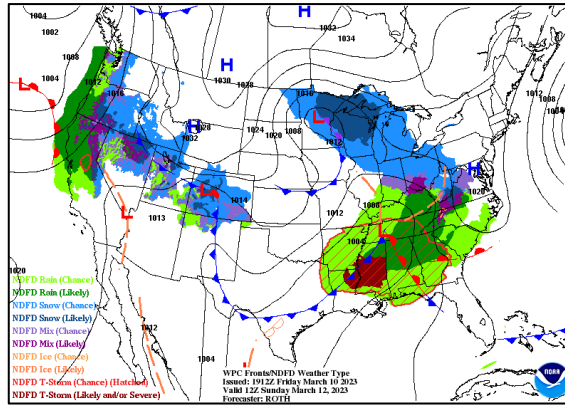
Min RH values will fall to 25-35% for many areas Saturday afternoon and combine with NW wind gusts 20-30 mph.

# WPC Forecasted Surface Fronts & Sea-Level Pressures

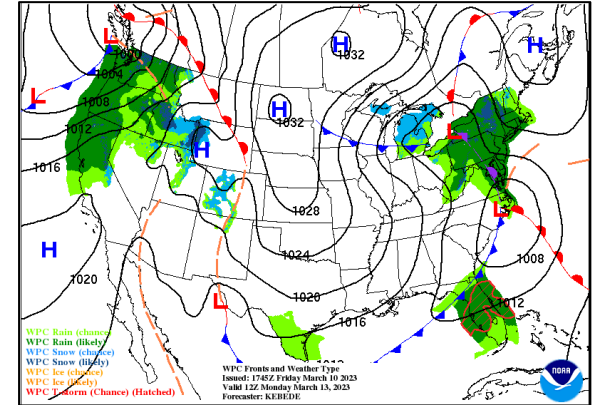
Saturday - 700 am



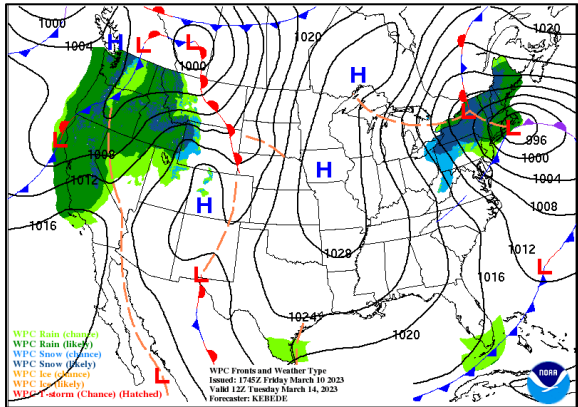
Sunday - 700 am



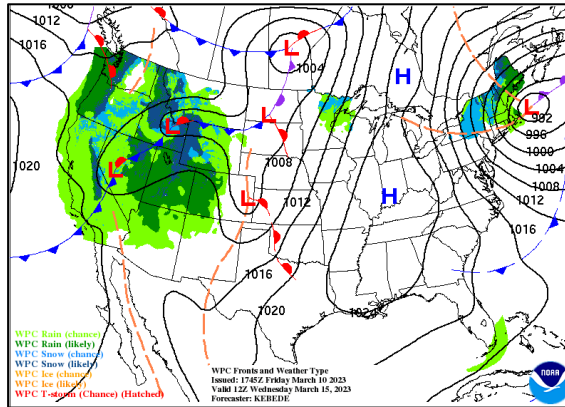
Monday - 700 am



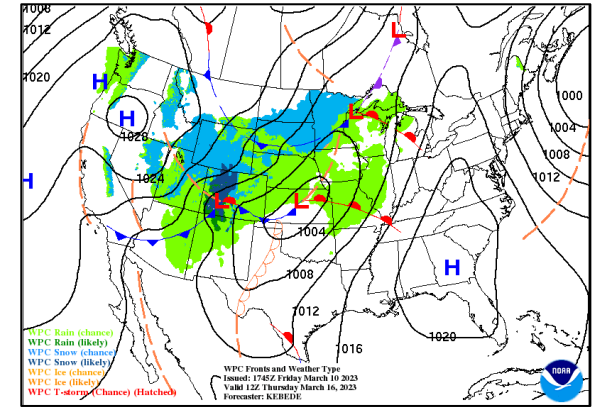
Tuesday - 700 am



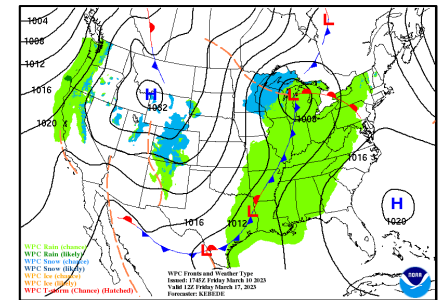
Wednesday - 700 am



Thursday - 700 am

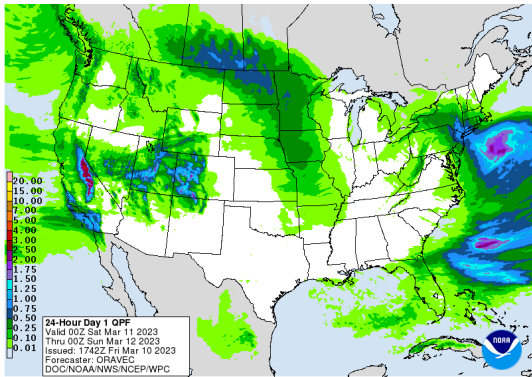


Friday - 700 am

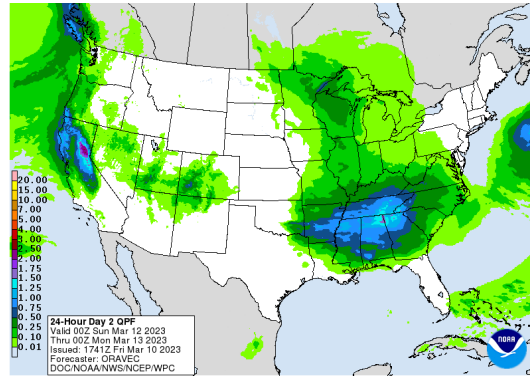


# Quantitative Precipitation Forecast, 7-Day

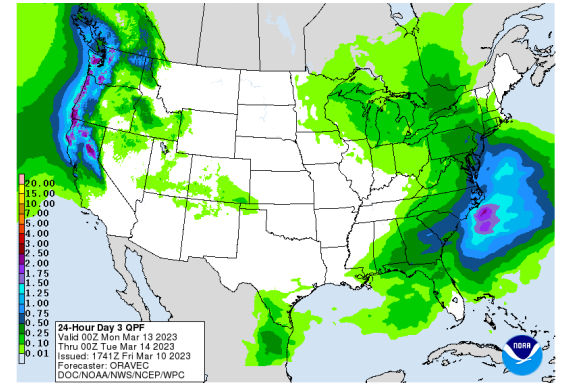
Day - 1



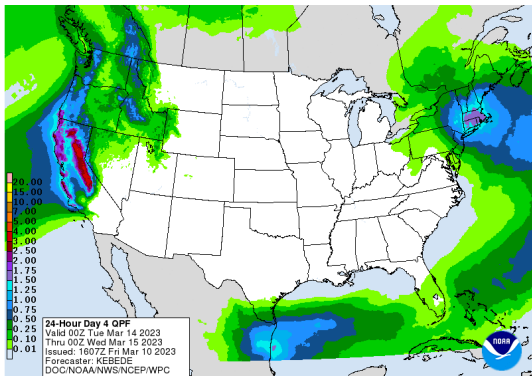
Day - 2



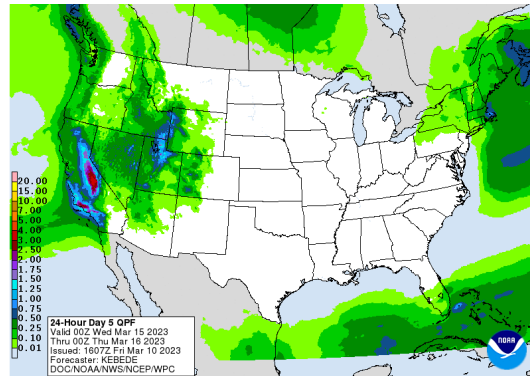
Day - 3



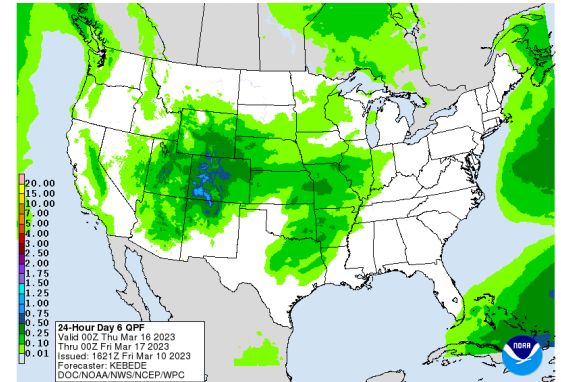
Day - 4



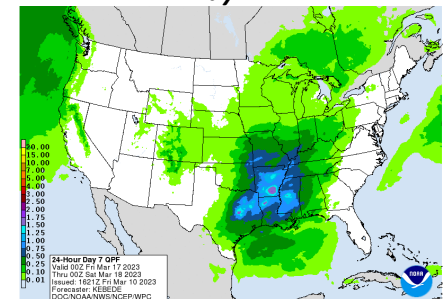
Day - 5



Day - 6



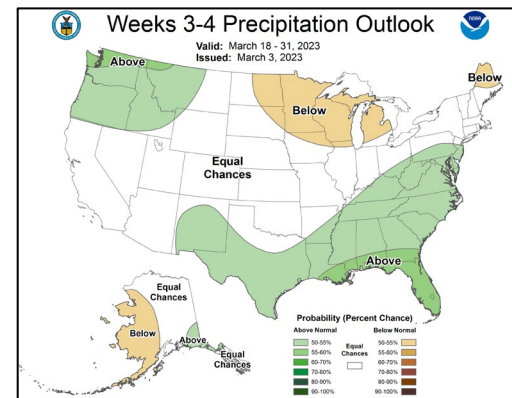
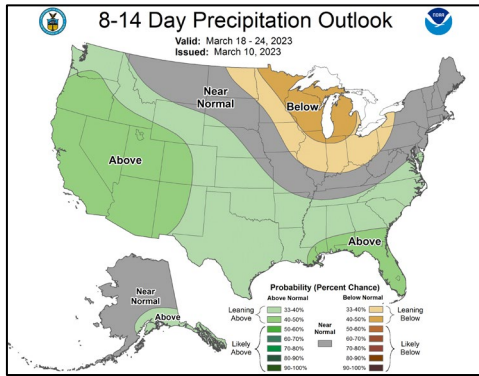
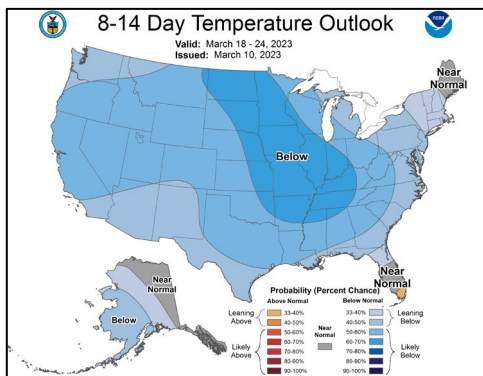
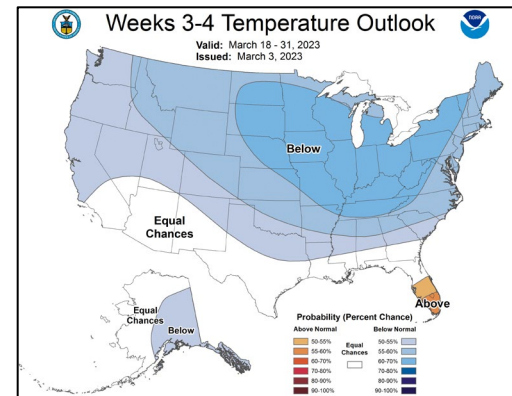
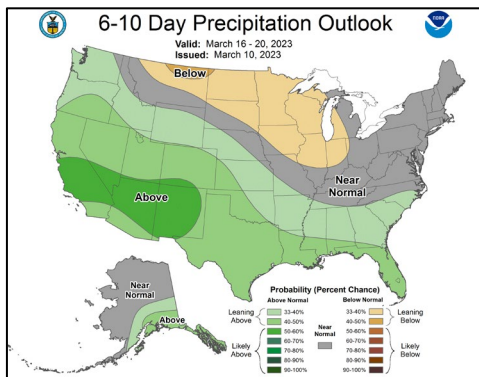
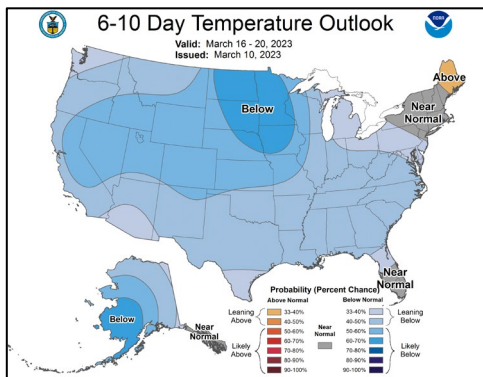
Day - 7





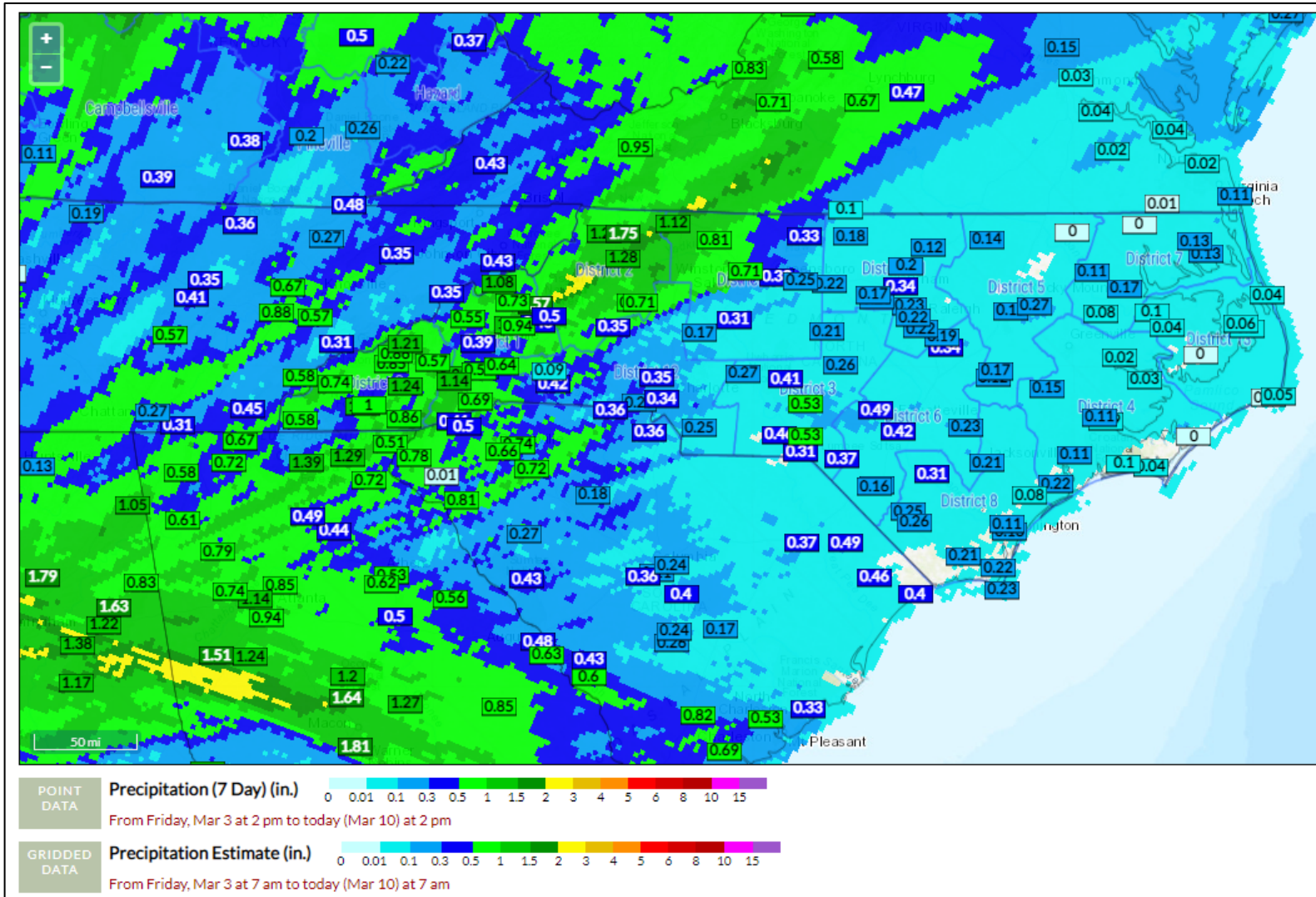
# Temp & Precip Outlook

## 6-10 Day, 8-14 Day & Week 3-4



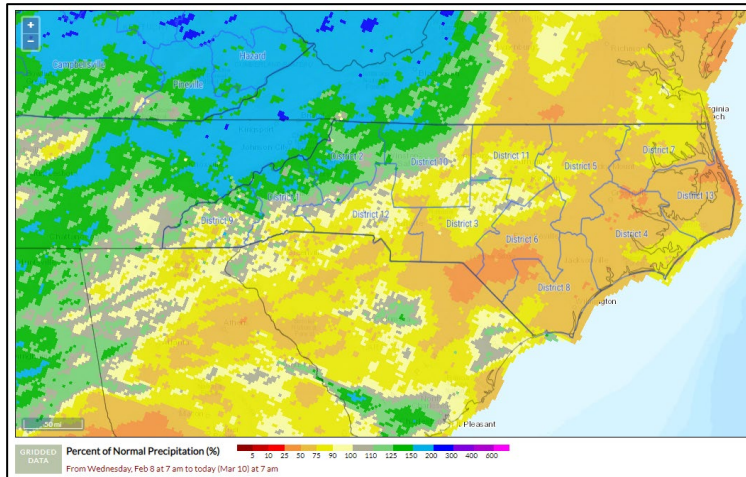
# 7 Day Precipitation Totals

*FWIP (Point accumulation ending at 1400 on 3/10, Grid ending 0700 3/10)*

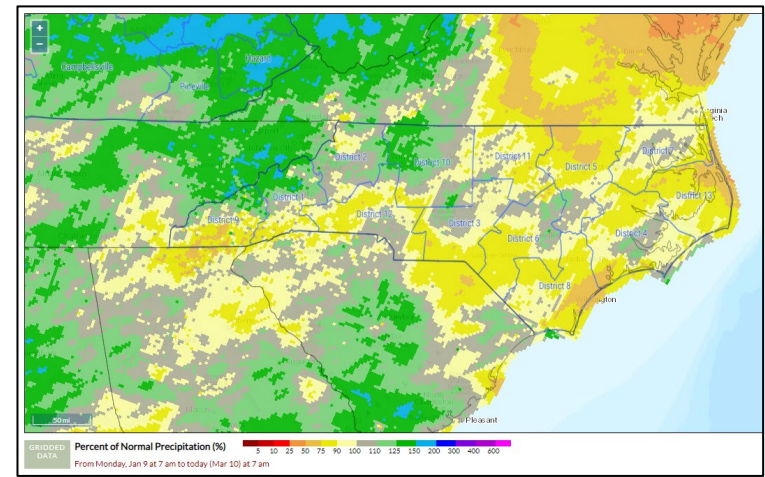


# Percent of Normal Precip, *FWIP* (Ending 0700 3/10)

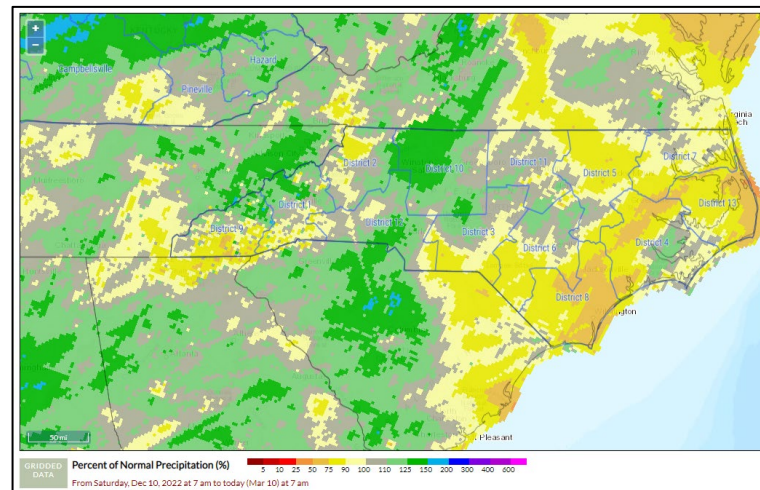
## 30-Day % of Normal



## 60-Day % of Normal



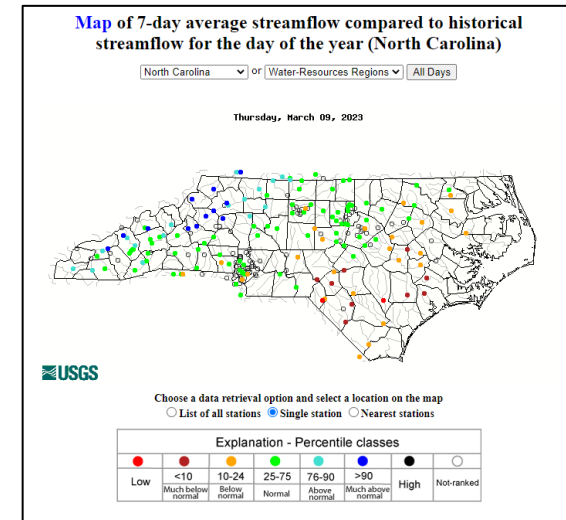
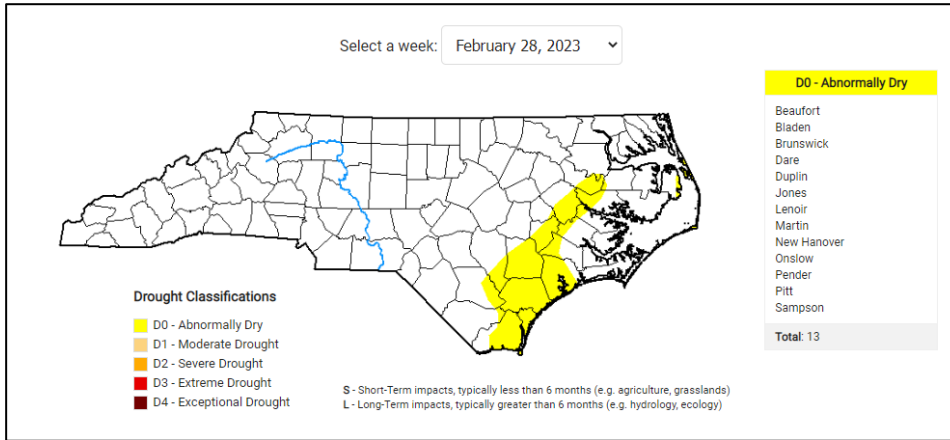
## 90-Day % of Normal



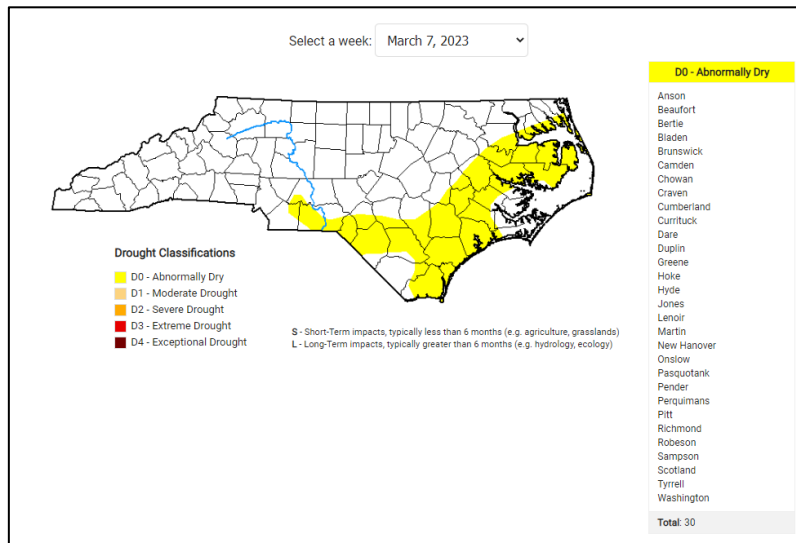


# Drought Situation

## Previous Week:



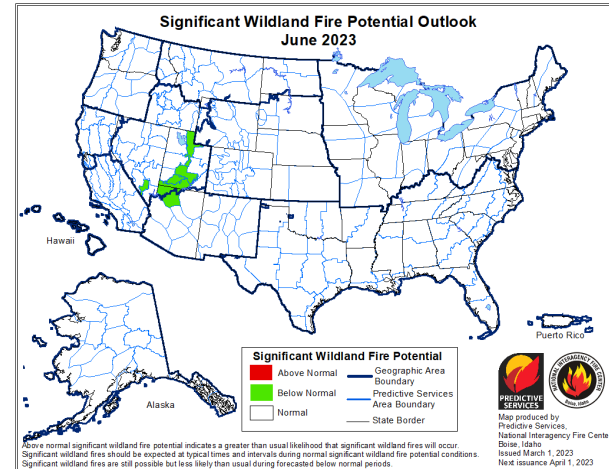
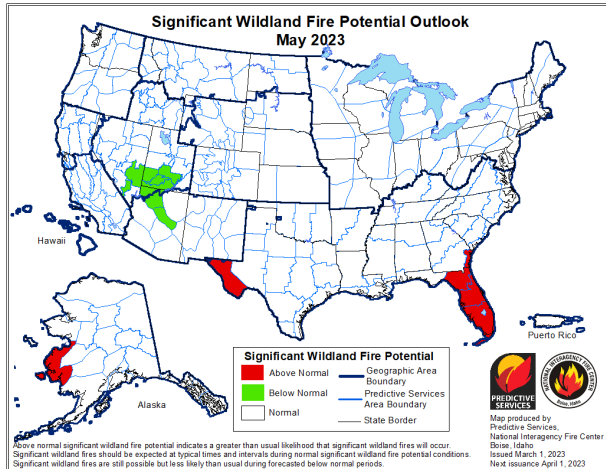
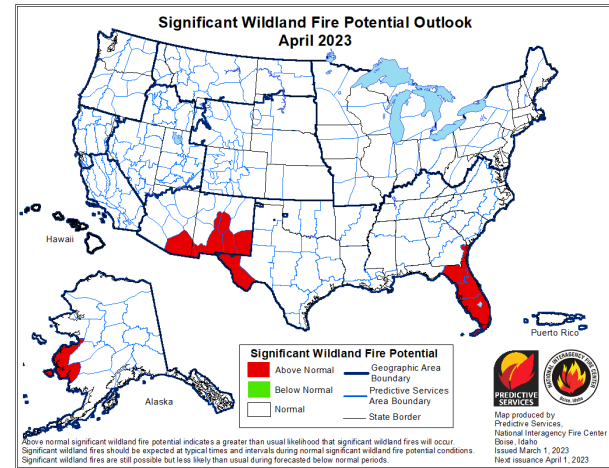
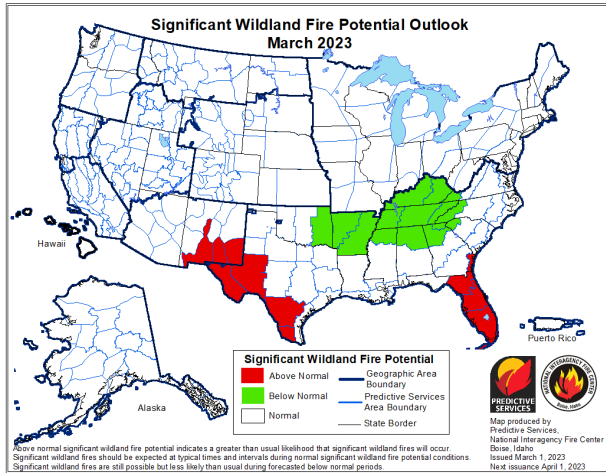
## Current Week:



- D-0 Drought Expansion from last week
- 7-Day Stream flow averages also decreasing East

# Significant Wildland Fire Potential Outlook:

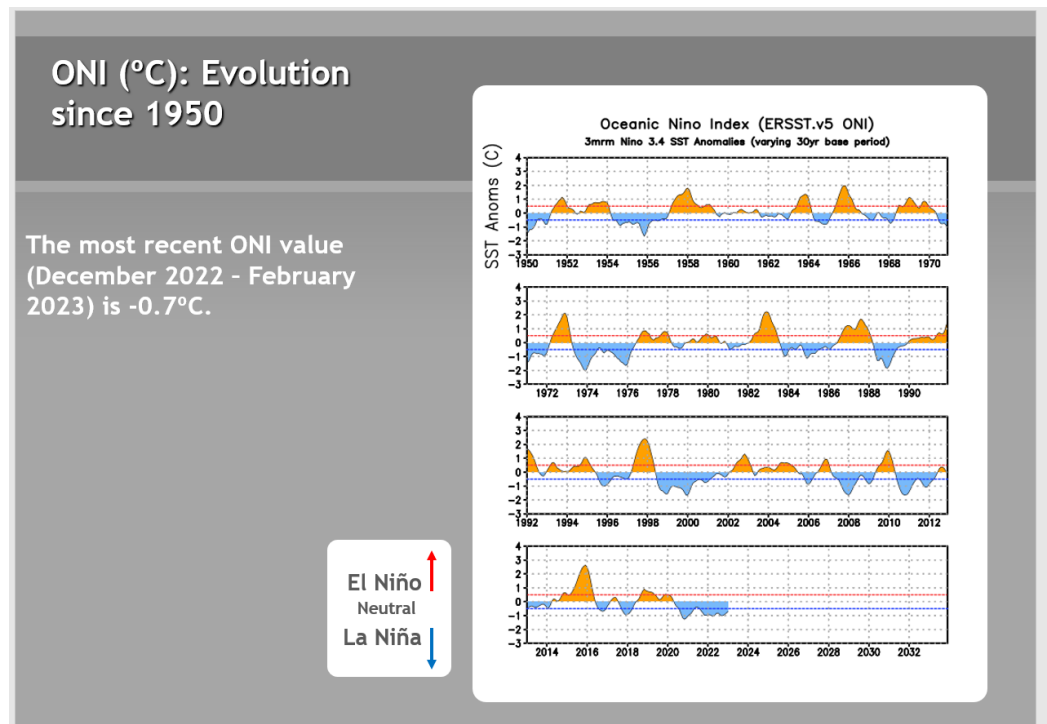
Updated 3/1/23



*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.*

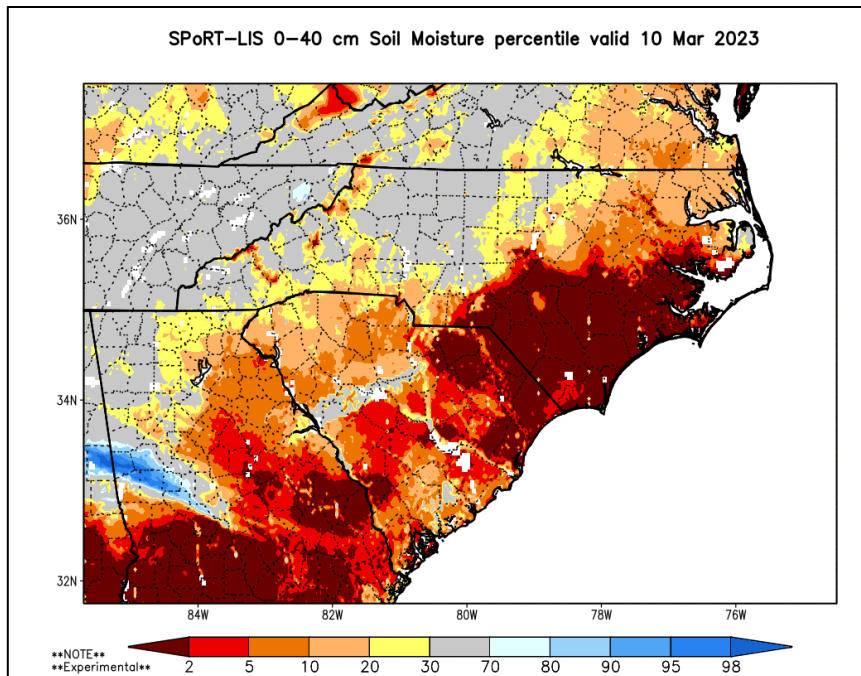
# ENSO Note

- 3/9/23 Update - La Nina has officially ended.
- ENSO-Neutral conditions expected to continue through spring and early summer of 2023. Signs point to El Nino development in late summer.



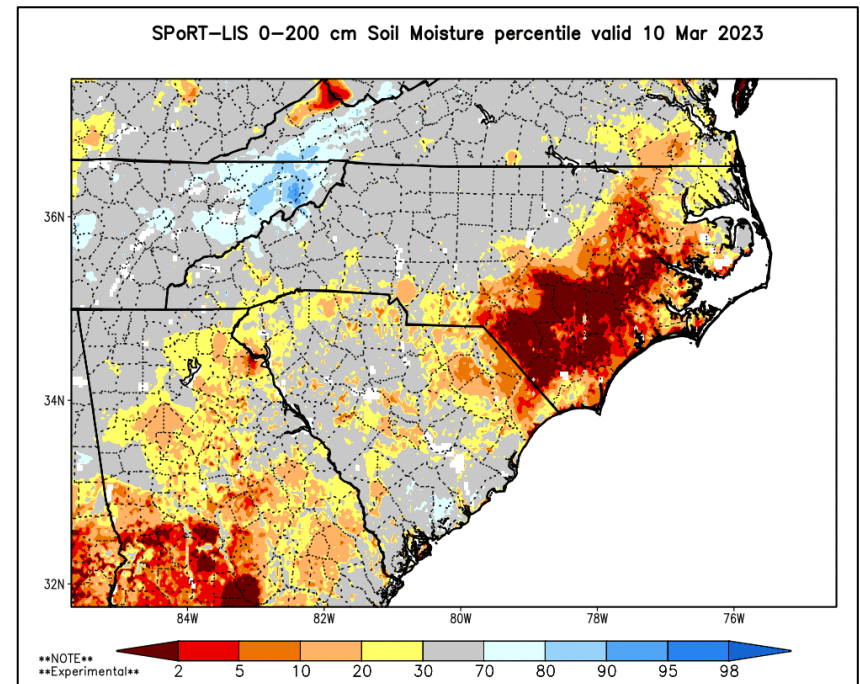
# SPoRT Relative Soil Dryness

## 0-40 cm Depth

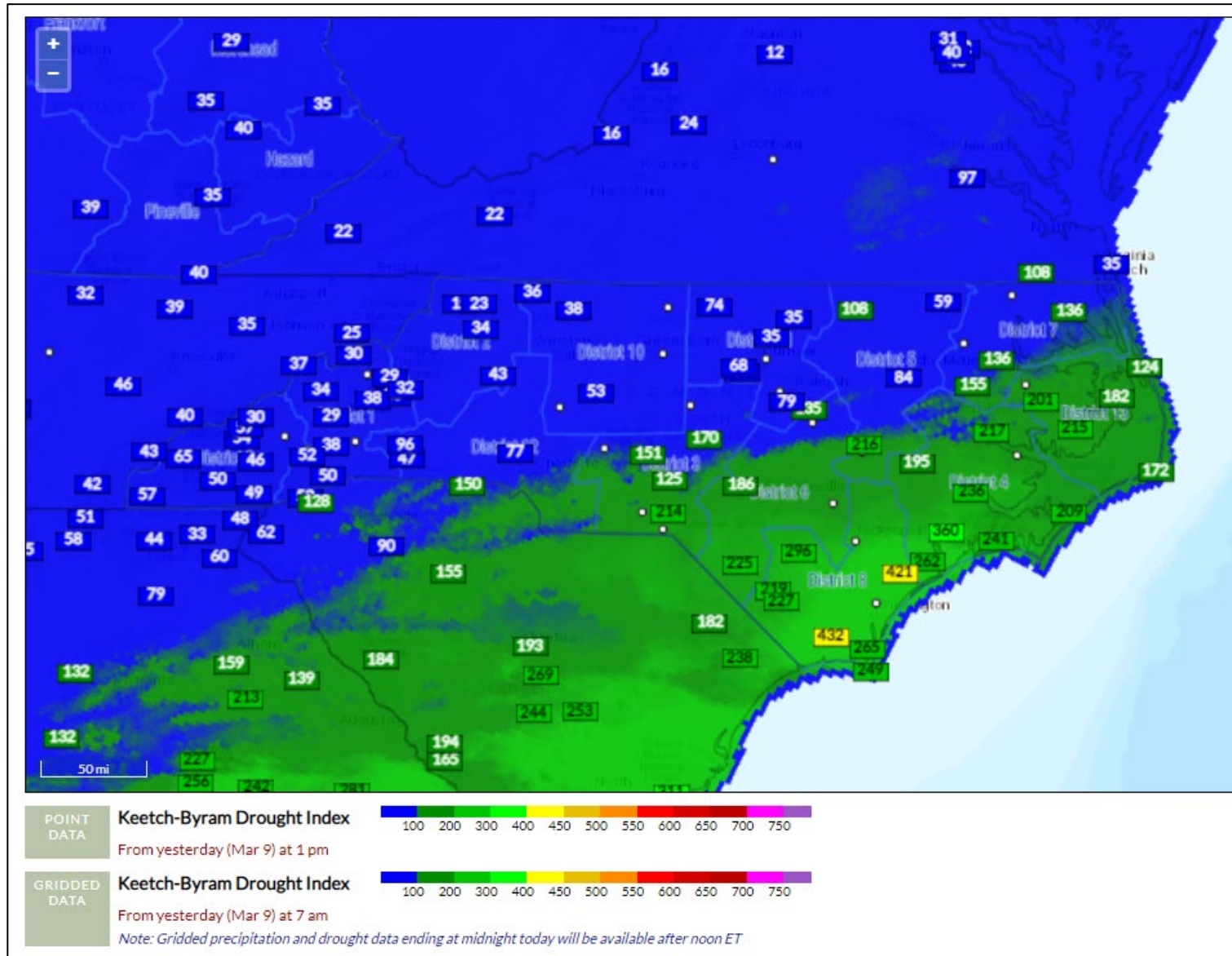


- Modeled Drying Trend Continues 0-2 Meter Depth, especially to the East & South

## 0-200 cm Depth



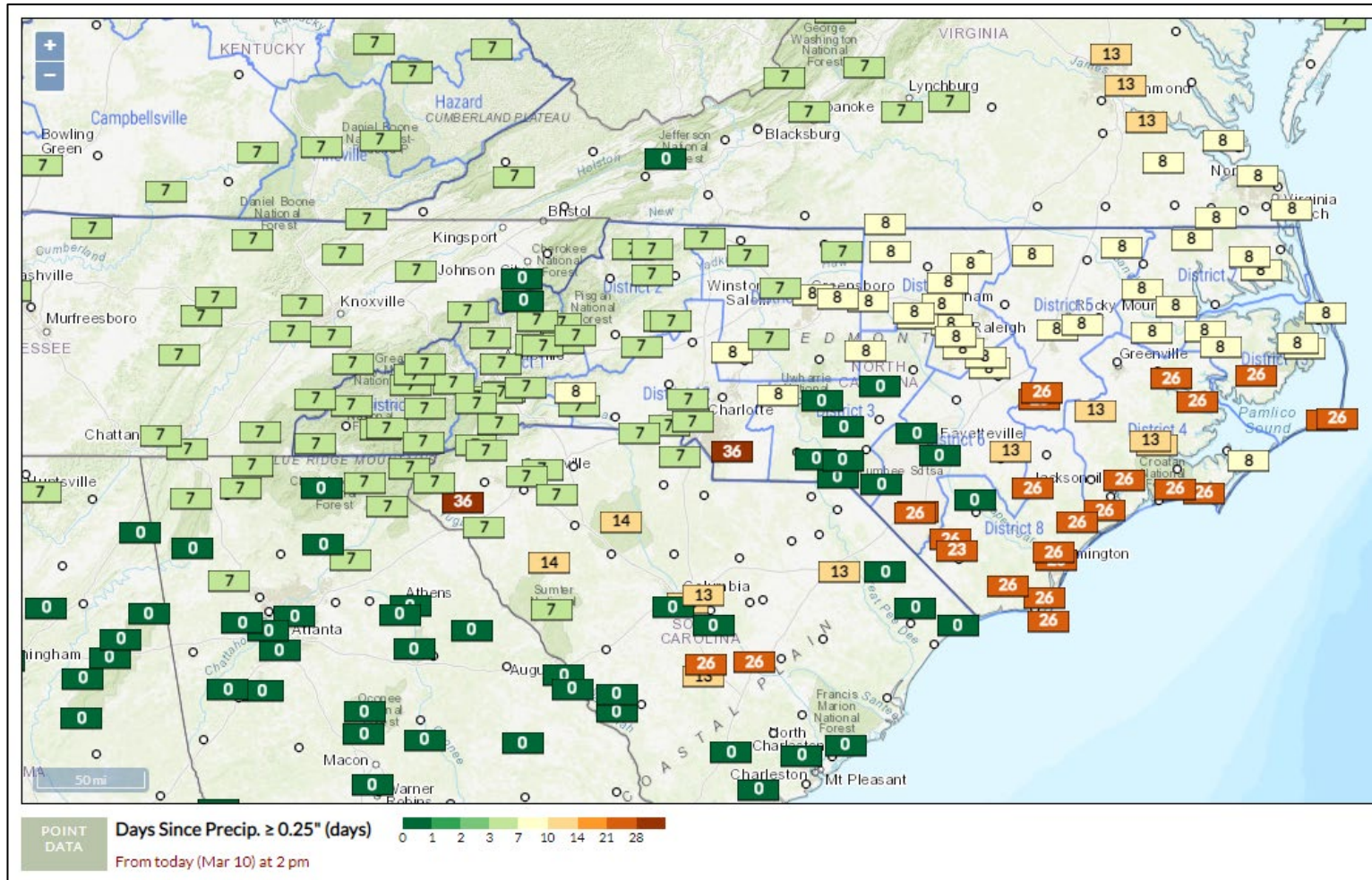
# KBDI - Gridded & Station Points (FWIP)





# Days Since Daily Precip $\geq 0.25''$

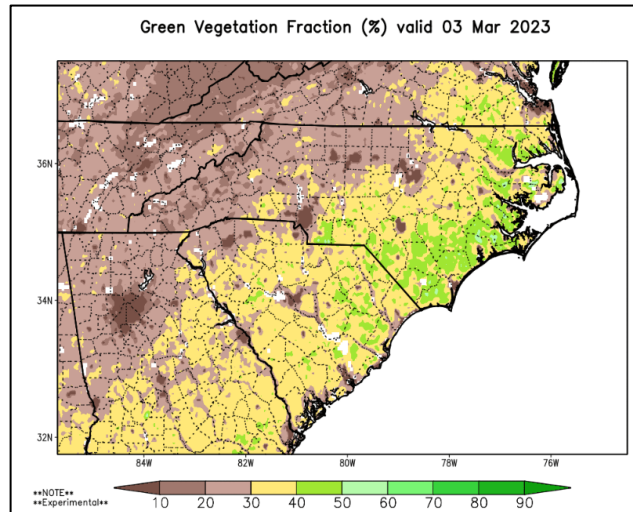
Note – Latest product run was on 3/10/23 at 1400.  
Does not consider rainfall after that point.



# Green Fraction & Green-Up Anomaly

- Generally, 2-3 Weeks Ahead of 30-Yr Avg
- Frost/Freeze Concerns

Last Week



Current

