

Weekly Fire Danger Assessment NCFS - Region I

For Time Period:
Saturday (3/4/23) to Friday (3/10/23)

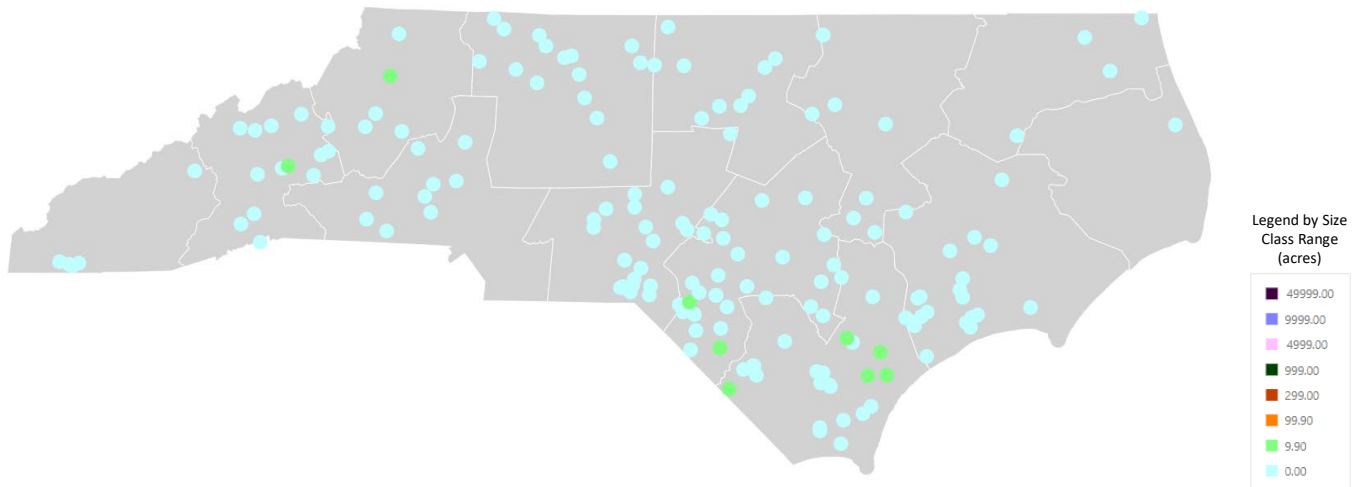
Past Week's Signal 14 Activity

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:	2/24 - 3/2, 2023		
Type	Number	Acres	
Wildfires:	39	139.2	
Prescribed Fires:	17	1935	

fiResponse Incident Location Map (for general context)

Date Range: 2/24 – 3/2, 2023

Report: Business Intelligence Module, Response Trends Map



Weather Outlook Discussion

MHX - NWS Office, Forecast Discussion Notes from 3/3/2023

A warm front will lift north of the area this evening with strong southerly winds developing ahead of a cold front. Scattered showers are expected to accompany the front but rainfall amounts will be light. The front will push through after midnight with gusty west to northwesterly winds developing Saturday. Strongest winds are expected Saturday morning then will gradually diminish through the afternoon. Minimum RH is expected to be around 30-35% Saturday afternoon. Dry and warm conditions are expected to persist through early next week.

Early next week the SFC slides offshore to the SE Monday allowing return flow to set up leading to the first sign of clouds. Warming trend continues Tuesday with warm air advection out of the strengthening in a tightening gradient between the offshore high and ahead of a weak, mostly dry, cold front that will cross the area Tuesday. Tuesday looks to be the hottest day of the period with highs in the upper 70s along the HWY17 corridor, flirting with 80 in SWern hot spots. Have continued mostly dry forecast keeping precip offshore but have begun inching PoPs over the coast upward.

The latter half of next week becomes murky with drastic differences in solutions to the progression of a trough aloft digging down from Wern Canada and the potential development of a SFC low over the MS River Valley. For now, have continued cooler temps with high pressure building locally and cold air advection persisting out of the N through most of the end of the week.

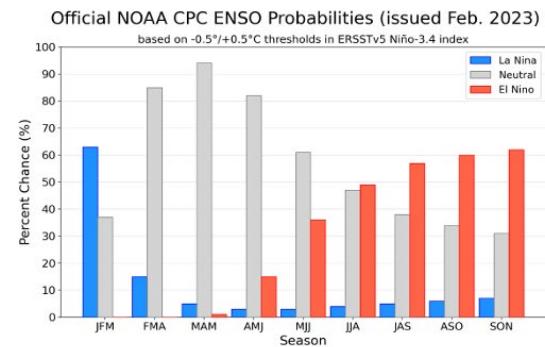
ENSO Note

- Weak La Nina conditions still present.
- Still favors transition to ENSO-Neutral and potentially El Nino into the late Summer of 2023.

CPC Probabilistic ENSO Outlook

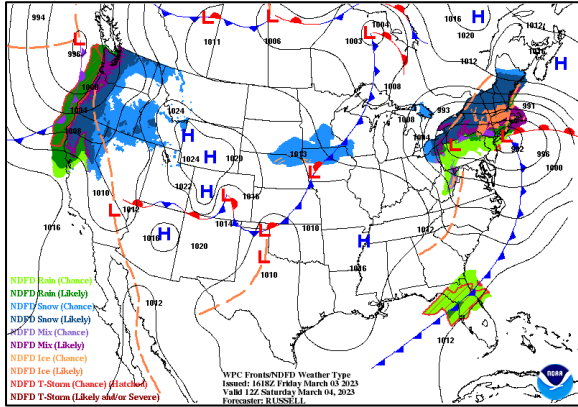
Updated: 9 February 2023

A transition from La Niña to ENSO-neutral is very likely during the February-April 2023 season, with ENSO-neutral persisting through the Northern Hemisphere early summer 2023. During the summer, there is a chance of a transition to El Niño.

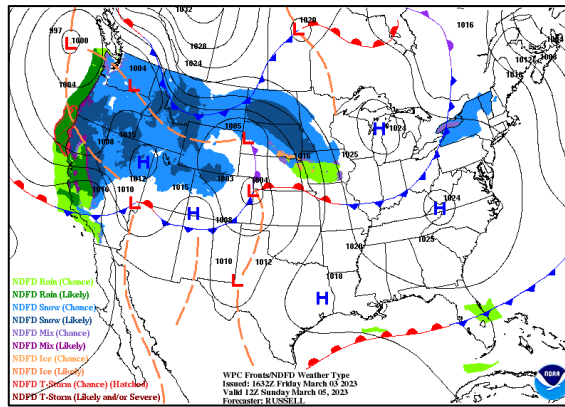


WPC Forecasted Surface Fronts & Sea-Level Pressures

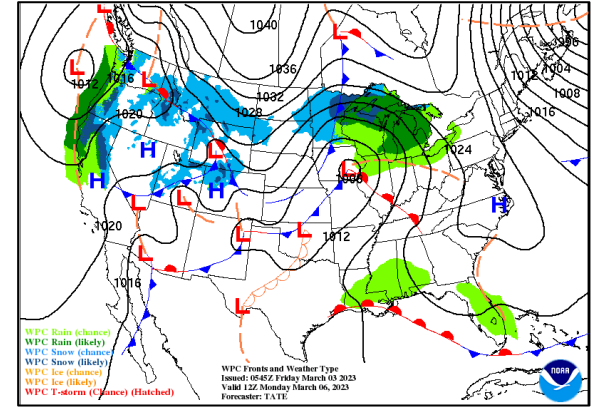
Saturday - 700 am



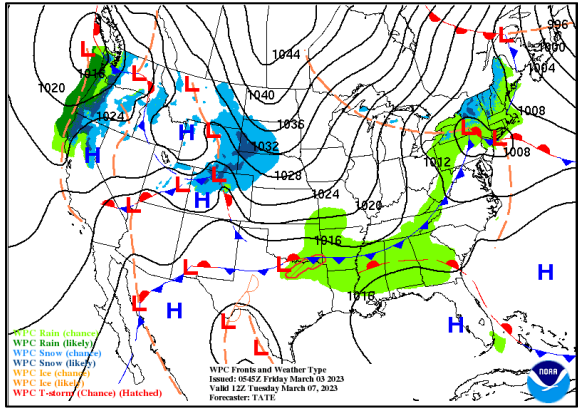
Sunday - 700 am



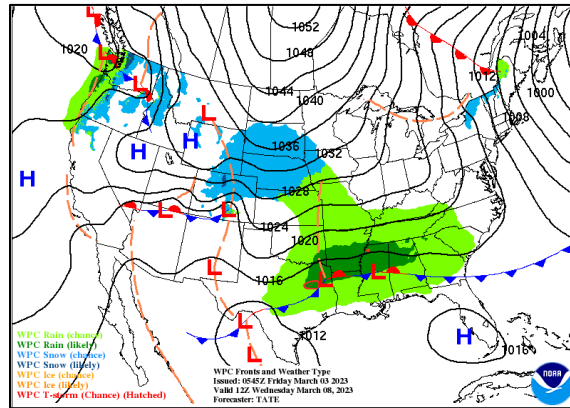
Monday - 700 am



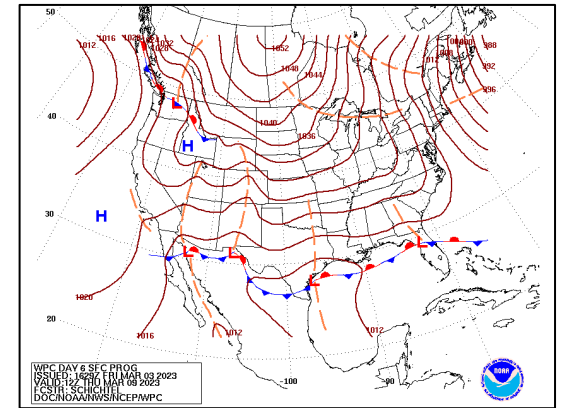
Tuesday - 700 am



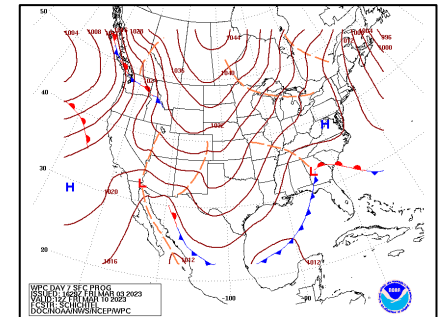
Wednesday - 700 am



Thursday - 700 am

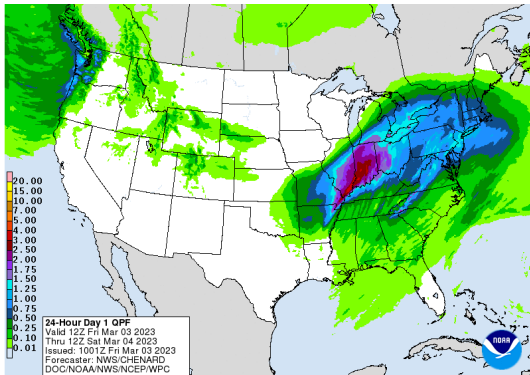


Friday - 700 am

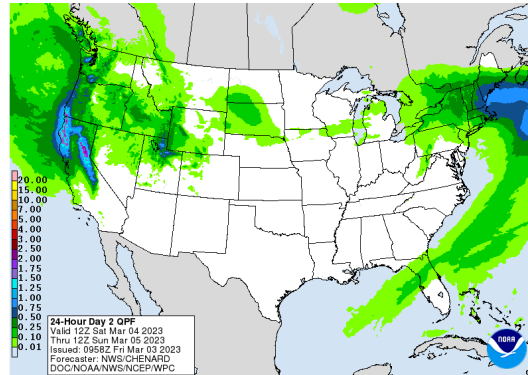


Quantitative Precipitation Forecast, 7-Day

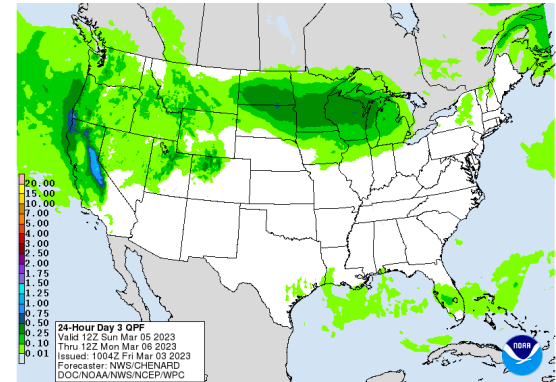
Day - 1



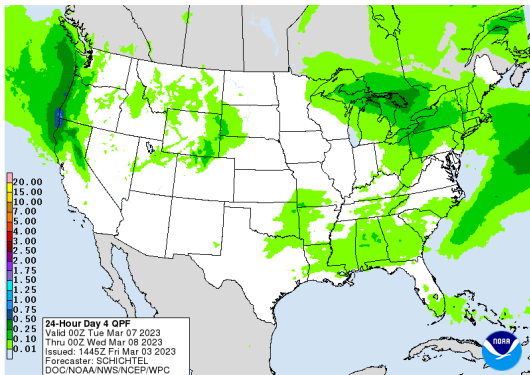
Day - 2



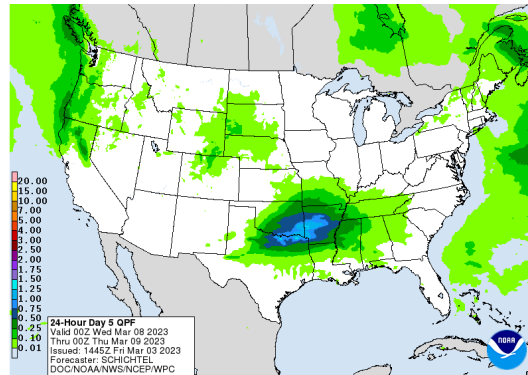
Day - 3



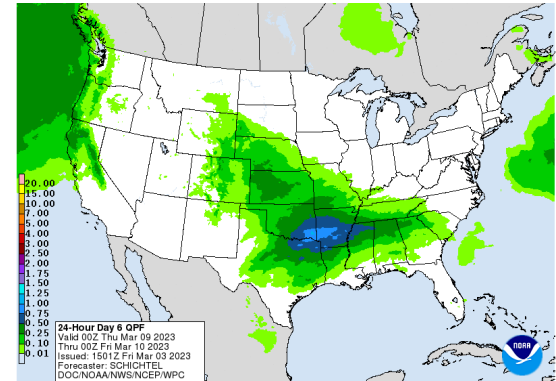
Day - 4



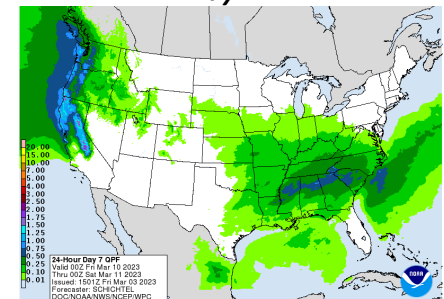
Day - 5



Day - 6

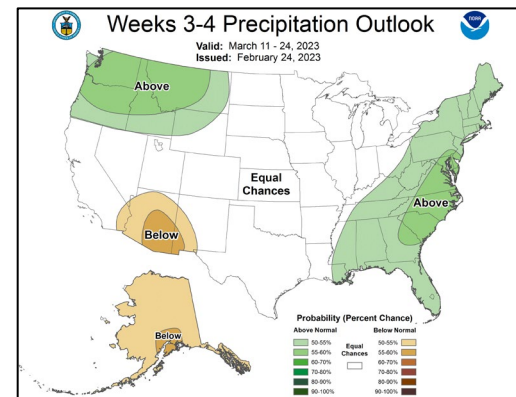
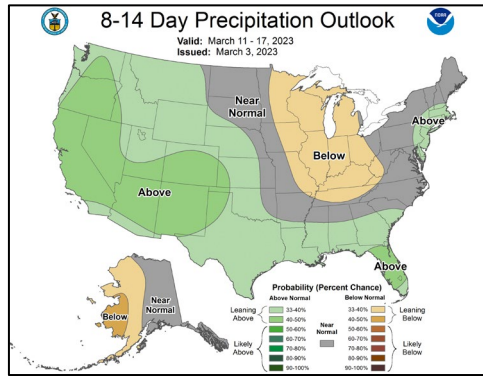
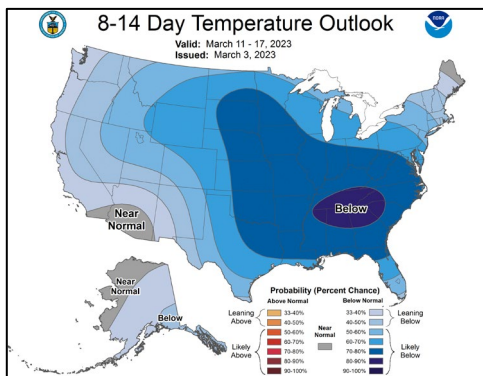
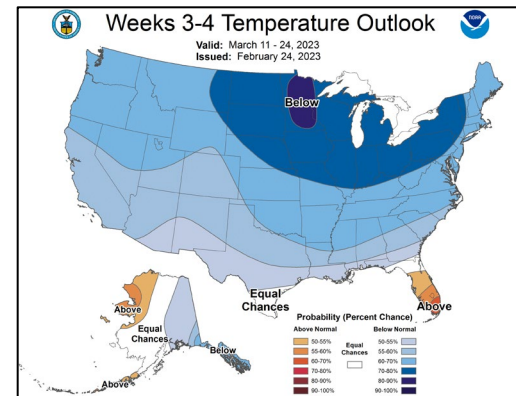
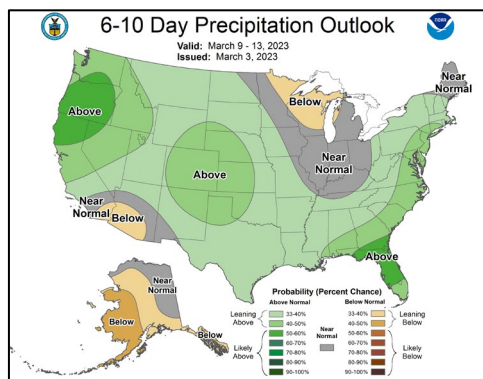
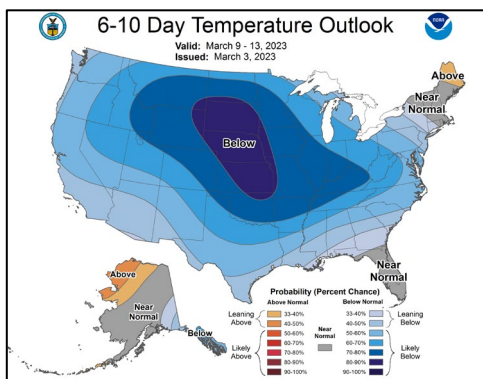


Day - 7



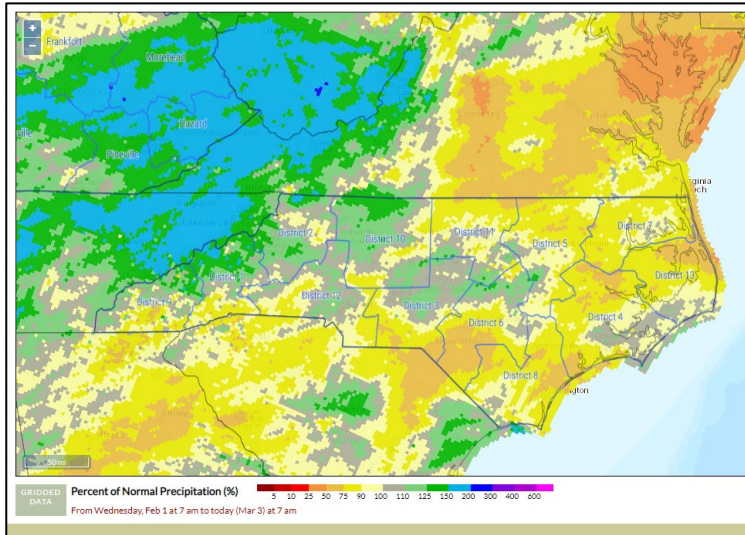
Temp & Precip Outlook

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

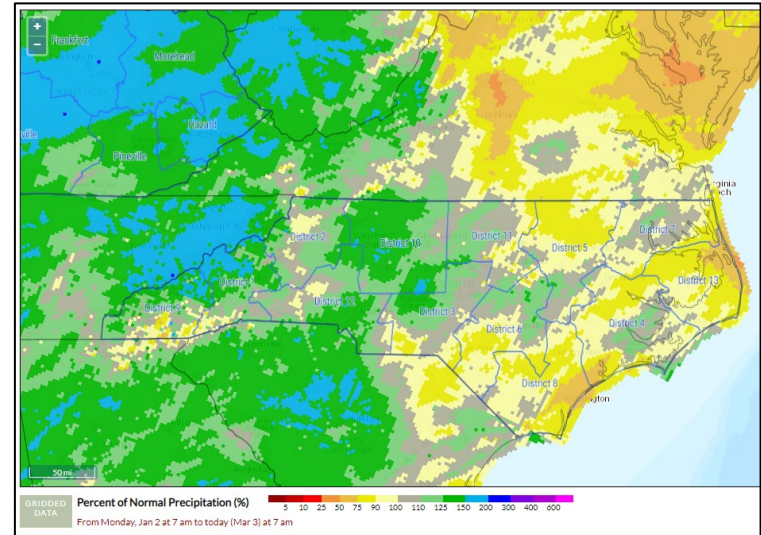


Departure from Normal Precip, FWIP

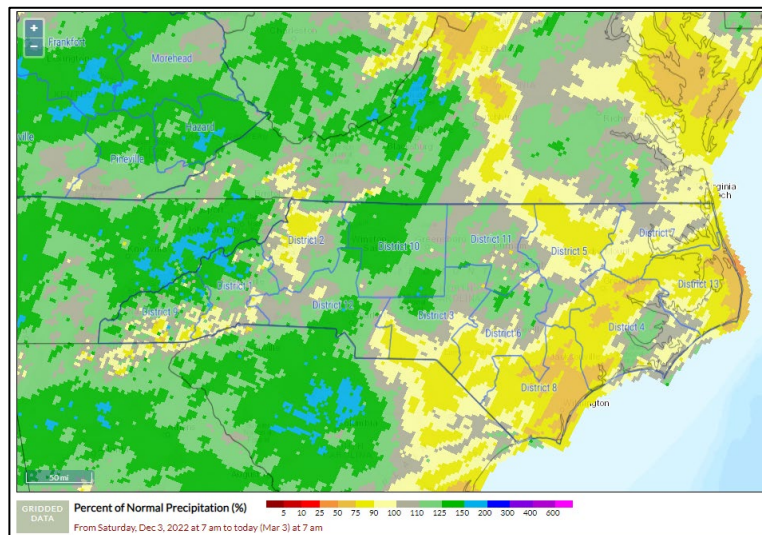
30-Day % of Normal



60-Day % of Normal

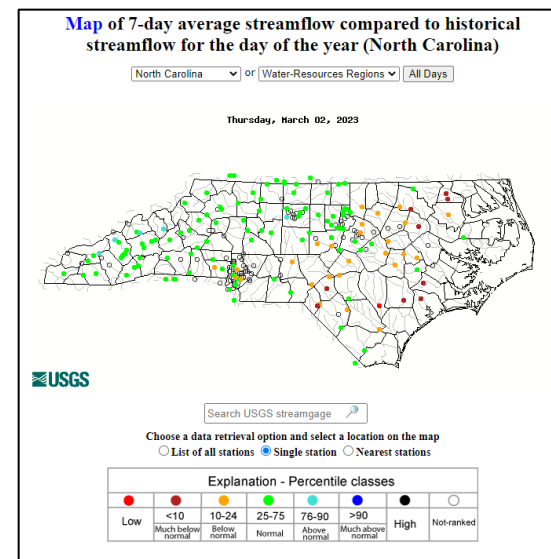
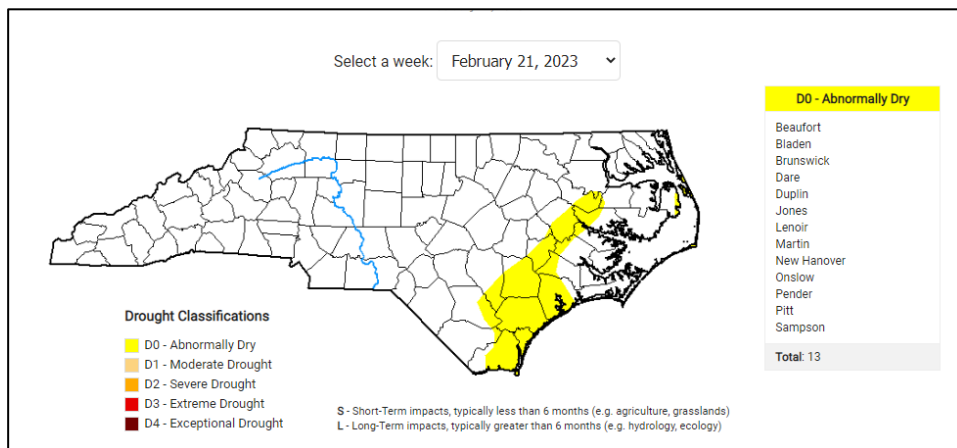


90-Day % of Normal

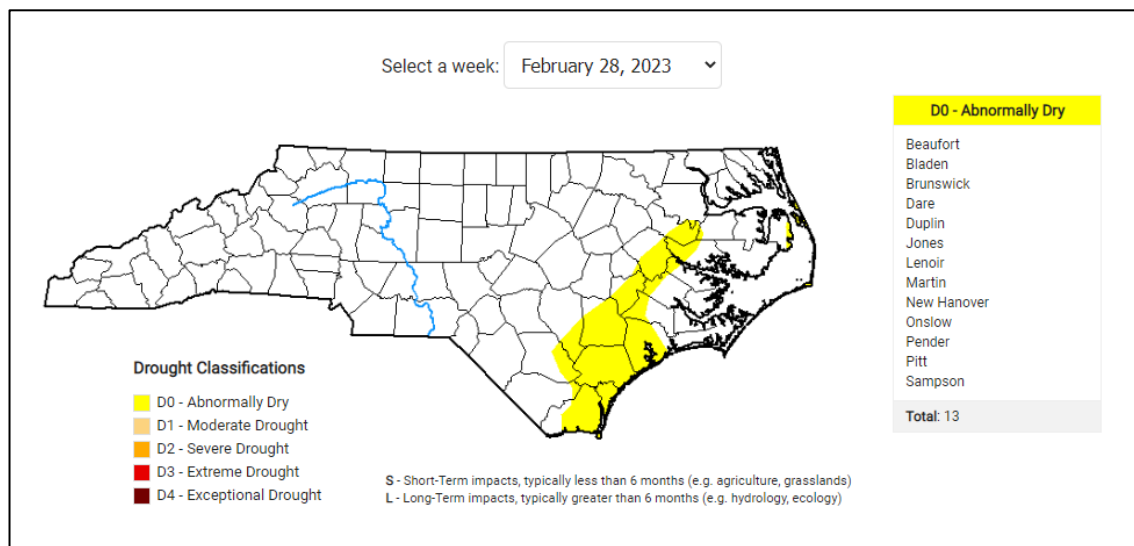


Drought Situation

Previous Week:



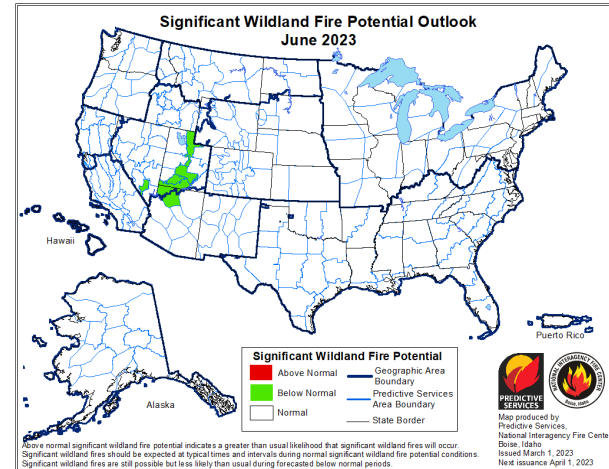
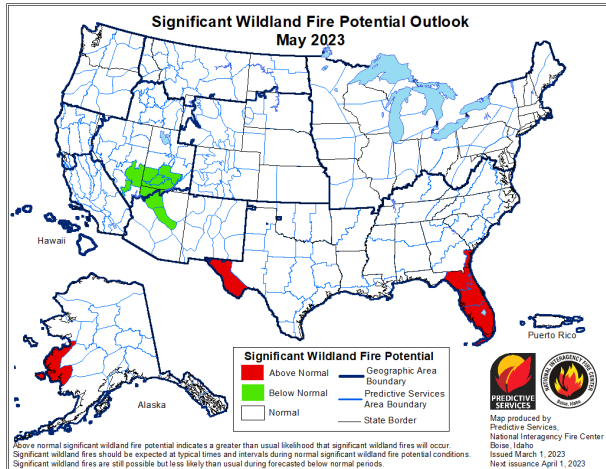
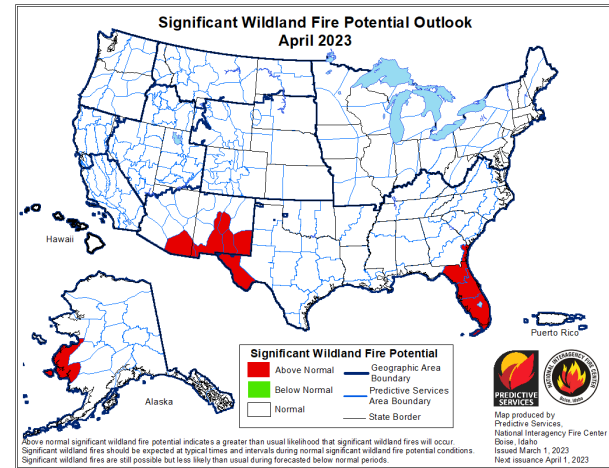
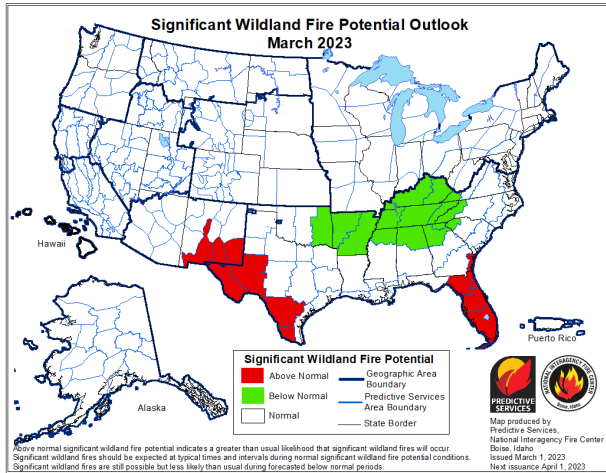
Current Week:



- Favoring Drought Expansion if lack of significant rain continues with green-up (focus East)
- 7-Day Stream flow averages also decreasing East

Significant Wildland Fire Potential Outlook:

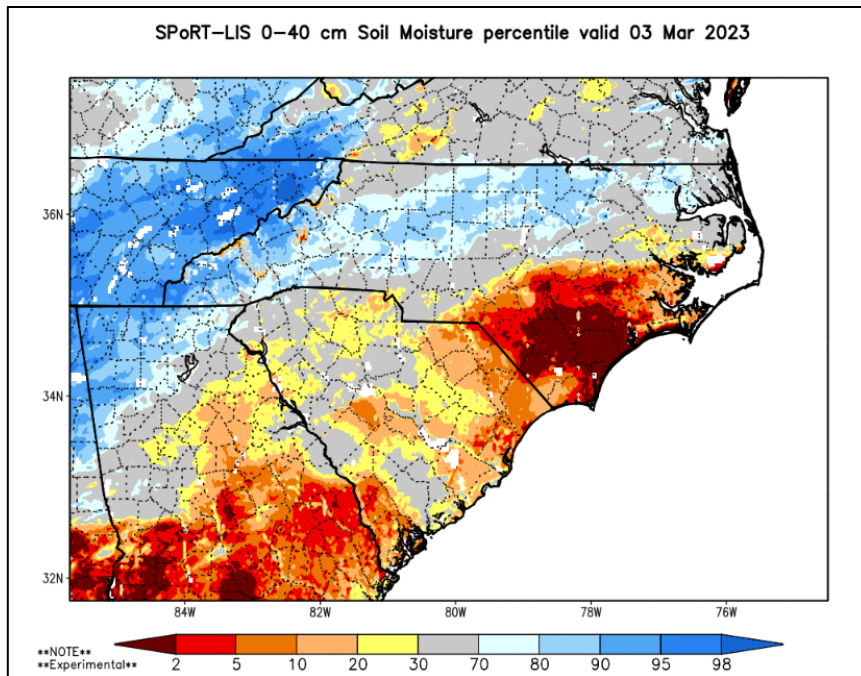
Updated 3/1/23



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.

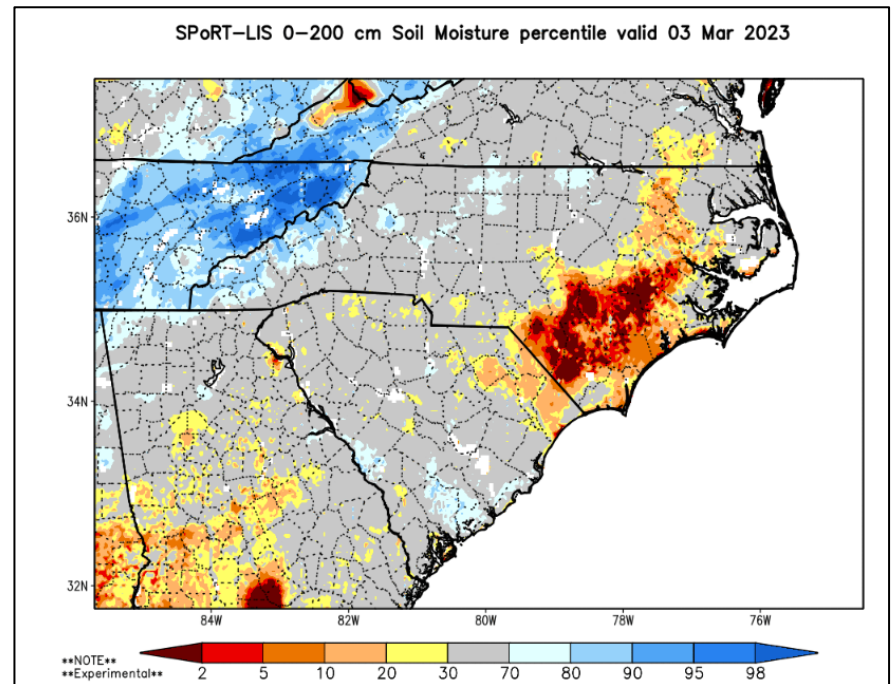
SPoRT Relative Soil Dryness

0-40 cm Depth (Shallow Dryness)

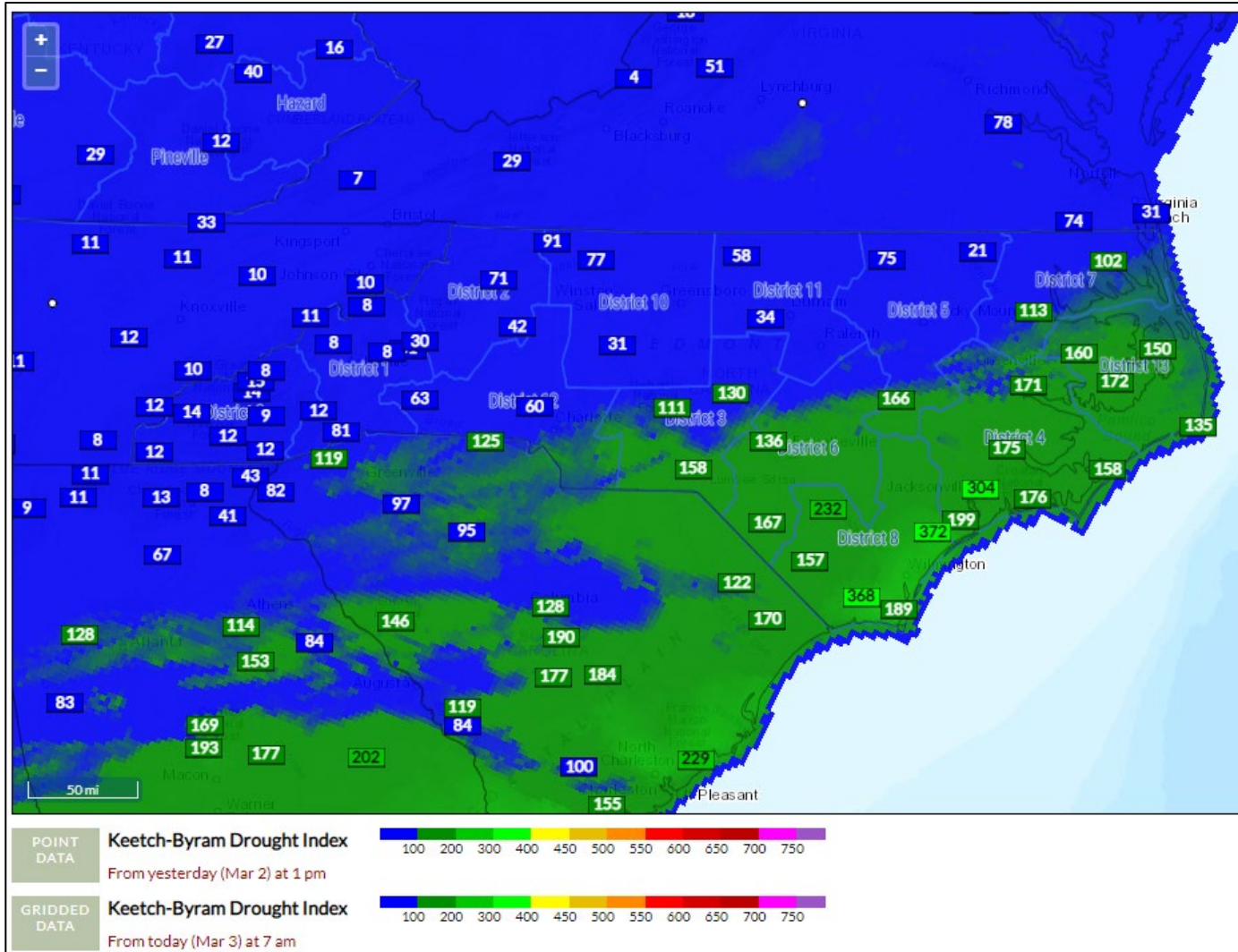


- Drying Trend 0-2 Meter Depth, especially to the East & South

0-200 cm Depth

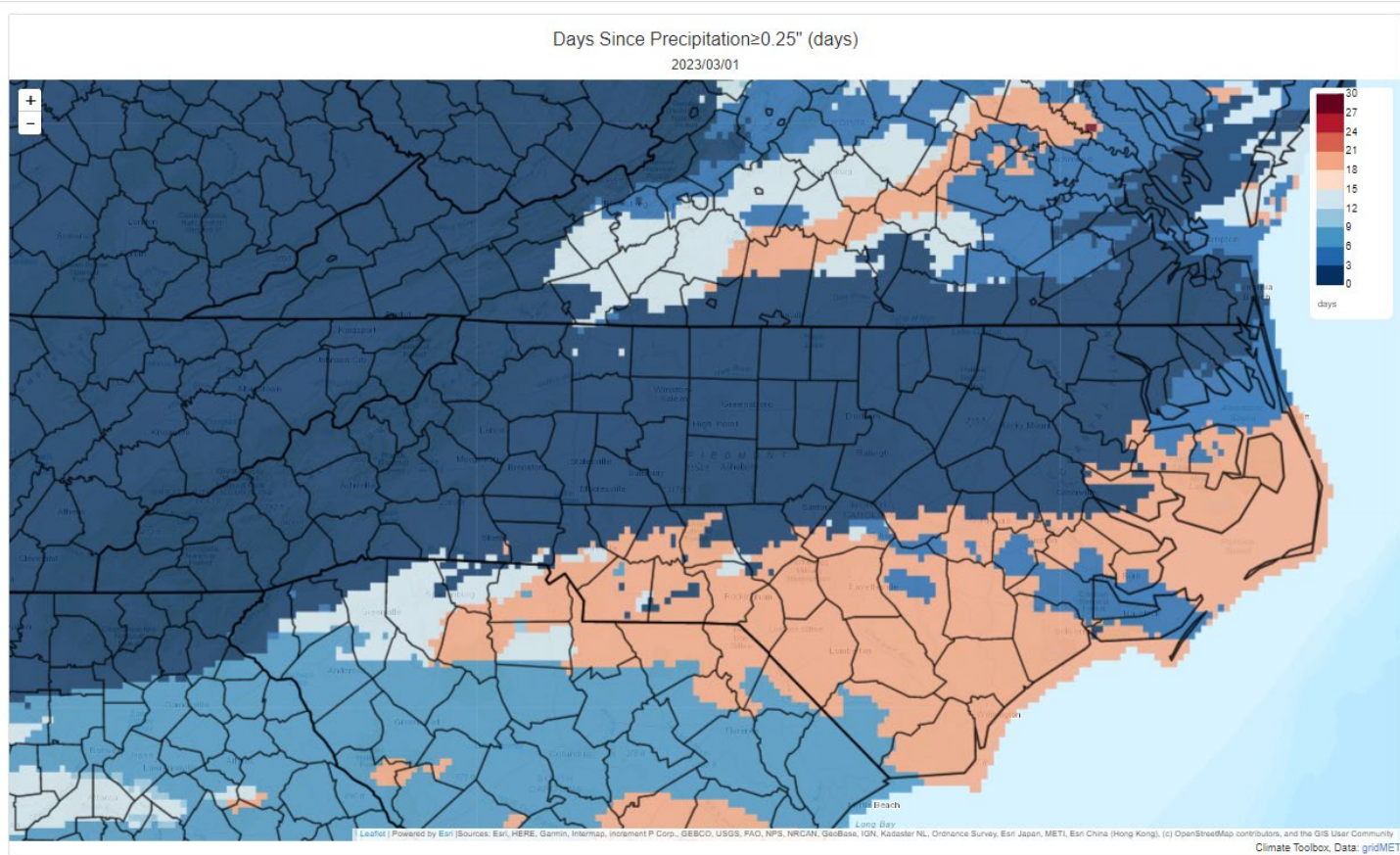


KBDI - Gridded & Station Points (FWIP)



Days Since Daily Precip $\geq 0.25''$

- *Note – Latest product run was on 3/1/23 not considering rainfall after that point.*

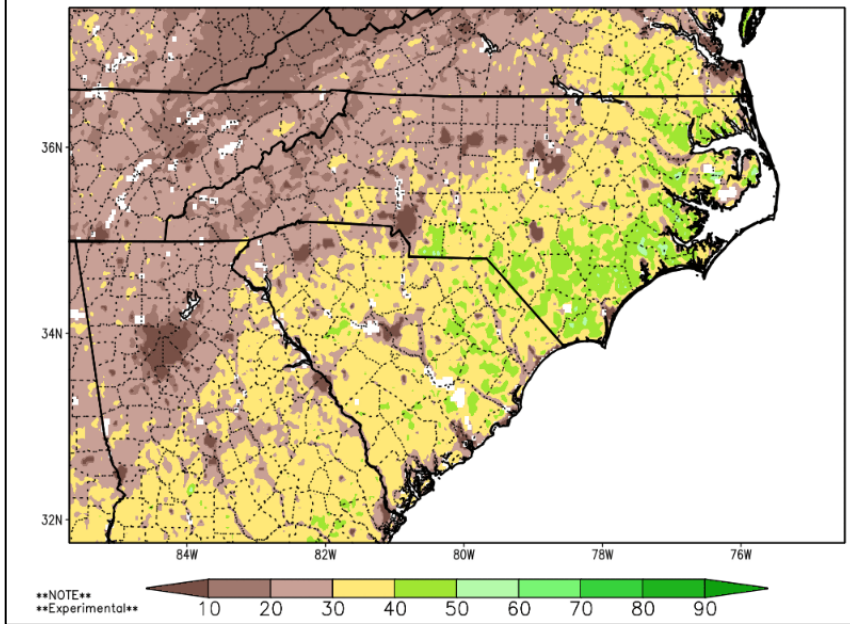


Climate Toolbox Link:

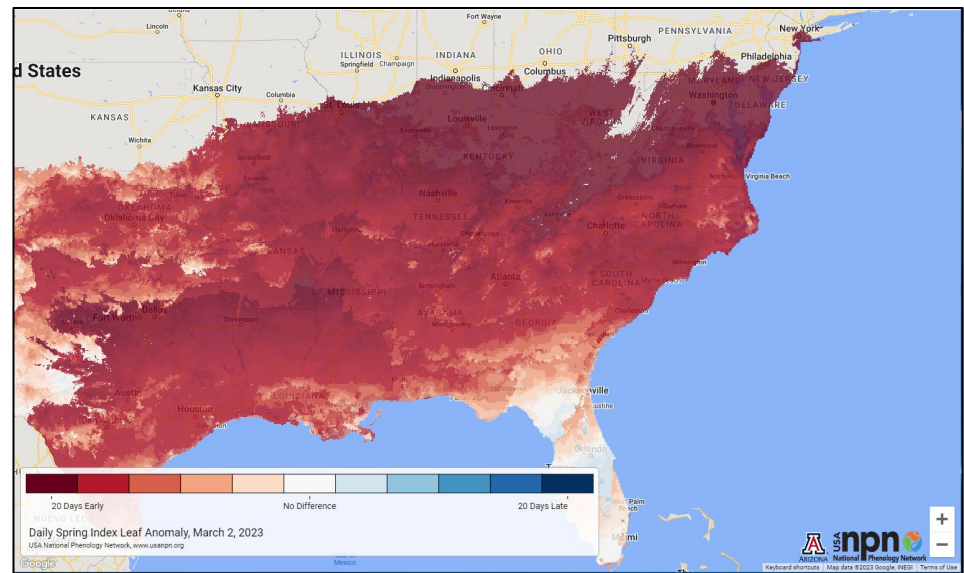
https://climatetoolbox.org/tool/climate-mapper?product=fire&variable=dsp_0.25&mapMin=0&mapMax=21&opacity=0.7&colorPalette=invBrBG&numColors=11&outOfBoundsColor=extend&baseMap=World_Topo_Map&mapZoom=8&mapCenterLat=35.42934&mapCenterLon=-79.20044

Green Fraction & Green-Up Anomaly

Green Vegetation Fraction (%) valid 03 Mar 2023



- Generally, 2-3 Weeks Ahead of 30-Yr Avg
- Risk of Frost/Freeze Concerns Later in March



Link: https://weather.msfc.nasa.gov/cgi-bin/basicLooper.pl?category=lis_NC&initialize=first®ex=gvf_20230228

Current and Forecasted Fire Danger Conditions by FDRA

R1

Regional Comments

- Normal Fire Season Activity noted.
- No groundfire reported as of yet.
- Waxy leaved fuels are very receptive but have not peaked yet.
- D8 saw active fire in timber fuels.

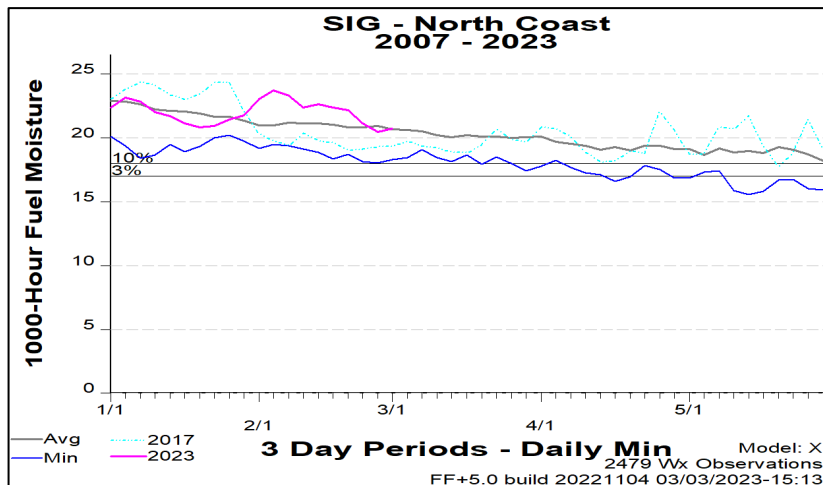
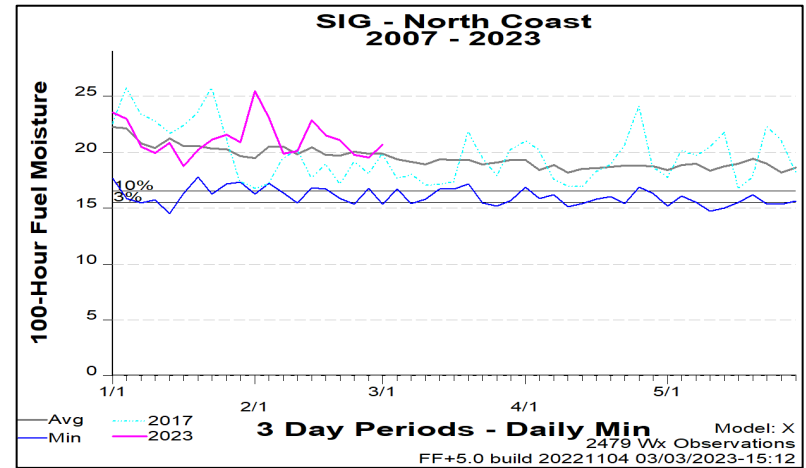
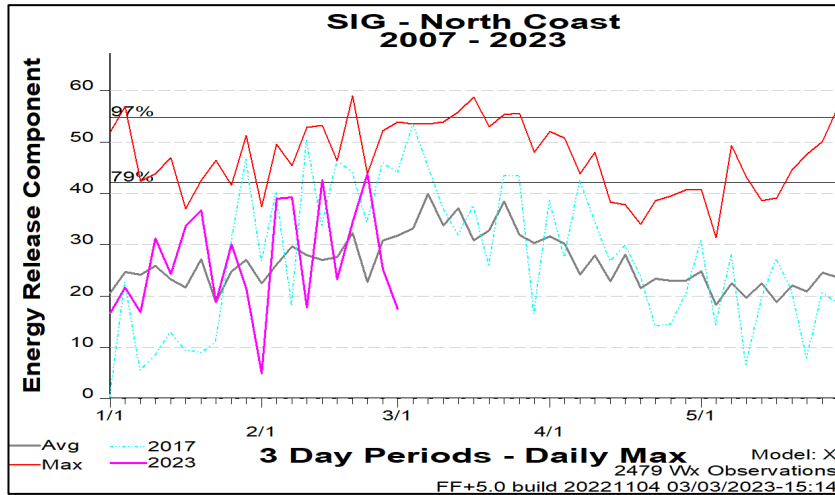
Important notes for next slide group:

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:
 - Low to Moderate (0-74th Percentile); shown in Blue-Green
 - High (75th-89th Percentile) – shown in Yellow
 - VH to Extreme (90th+ Percentile) – shown in Red, called Critical
4. Dead Fuel Moisture Forecast Values are grouped into three categories:
 - Low to Moderate (26th-100th Percentile); shown in Blue-Green
 - High (11th-25th Percentile); shown in Yellow
 - VH to Extreme (0-10th 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 04-Mar	SUN 05-Mar	MON 06-Mar	TUE 07-Mar	WED 08-Mar	THU 09-Mar	FRI 10-Mar
Avg. Max. Temp. (°F)	69	63	68	75	56	55	54
Avg. Min. Humidity (%)	36	36	39	38	37	42	57
Avg. 20' Wind Speed (mph)	14	6	5	12	11	8	7
Avg. Wind Direction*	W	SW	SSW	W	NNW	WNW	E
Avg. Probability of Precip. (%)	0	0	5	9	8	16	39
Days Since a Wetting Rain**	2.0	3.0	4.0				
Forecast ERC (Fuel Model X)	28.0	37.3	28.2	27.9	41.8	34.8	26.8
Forecast BI (Fuel Model X)	109.4	78.7	55.5	94.6	91.5	76.8	57.1
Forecast IC (Fuel Model X)	9.5	6.5	3.8	8.3	8.2	4.9	2.8
Forecast 100-Hr. FMC	22.9	22.0	20.7	20.4	19.8	18.8	18.1
Forecast 1000-Hr. FMC	23.2	23.1	23.1	23.1	23.1	23.1	23.0
KBDI	140.3						

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

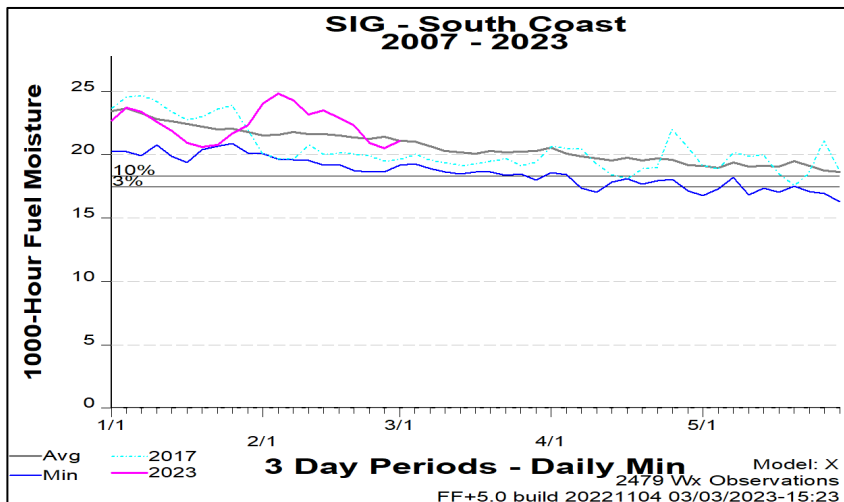
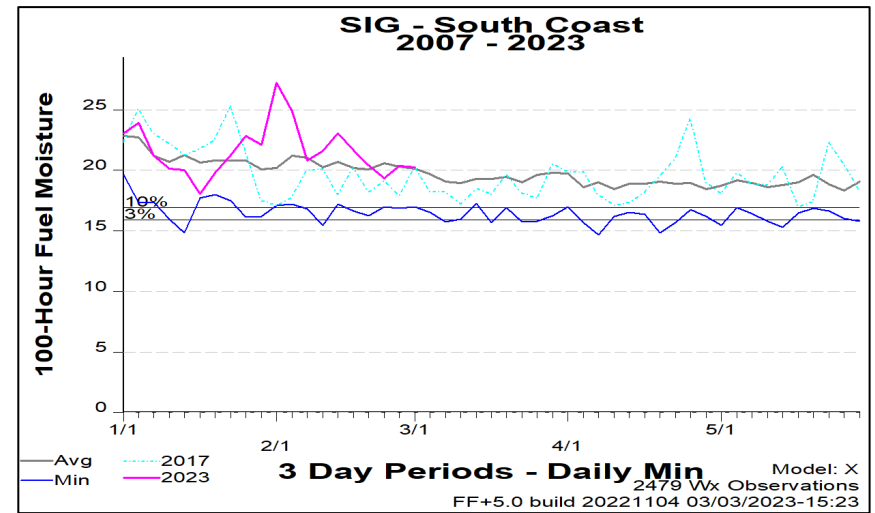
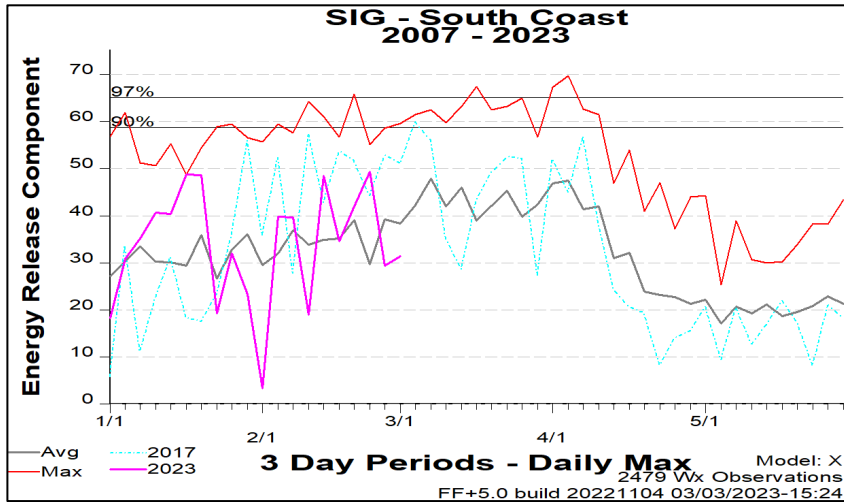
Values in the table above are averages from 4 stations in this FDRA:

- 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 04-Mar	SUN 05-Mar	MON 06-Mar	TUE 07-Mar	WED 08-Mar	THU 09-Mar	FRI 10-Mar
Avg. Max. Temp. (°F)	72	66	72	78	60	59	56
Avg. Min. Humidity (%)	34	31	36	40	34	38	62
Avg. 20' Wind Speed (mph)	12	5	4	11	9	6	6
Avg. Wind Direction*	WNW	E	S	W	WNW	ESE	ENE
Avg. Probability of Precip. (%)	0	0	5	9	10	24	36
Days Since a Wetting Rain**	9.3	10.3	11.3				
Forecast ERC (Fuel Model X)	36.0	42.3	32.9	31.0	47.2	41.6	30.8
Forecast BI (Fuel Model X)	109.9	76.8	70.6	103.4	101.4	82.4	78.8
Forecast IC (Fuel Model X)	11.3	7.1	5.8	9.8	10.7	6.6	4.5
Forecast 100-Hr. FMC	21.7	20.7	19.5	19.3	18.9	18.0	17.4
Forecast 1000-Hr. FMC	23.4	23.3	23.2	23.1	23.0	22.8	22.7
KBDI	208.1						

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