

Weekly Fire Danger Assessment NCFS - Region ONE

For Time Period:

Friday (4/14/23) to Thursday (4/20/23)

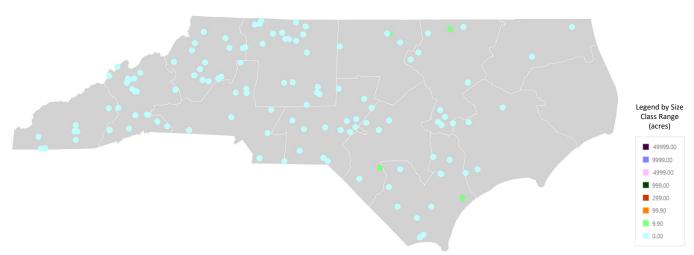
Past 7-Days Signal 14 Activity

	NCFS - Region 1						
	Previous 7-Day Fire Activity (Does Not Include Federal Ownerships)						
Data Source:	Signal 14 Regio	Signal 14 Regional Activity Summary Report (Signal 14 is a snapshot in time)					
Date Range:	4/6 - 4/12, 2023						
	Туре	Number	Acres				
,	Wildfires:		10	13.9			
Prescribed Fires (State & Private Lands):			5	1,409			

fiResponse Incident Location Map (for general context)

Date Range: 4/6 – 4/12, 2023

Report: Business Intelligence Module, Response Trends Map



Current and Forecasted Fire Danger Conditions by FDRA

R1

Regional Comments for this Week – R1

Last Resort Fire, PM Update:

- Started 3/24/23
- 5,280 acres
- 100% Containment Reached
- Over 400 million gallons of water moved
- IMT3 with approximately 46 Personnel Assigned (4/12 PM)

Other Locations/Notes:

- Green-up continues
- Pocosin fuels still very volatile
- Dead fuel moistures temporarily rebounded after the rain event & drying again
- Draw-down of moisture noted in swamps & flatwoods from recent rains
- Consumption of organics continued to be noted as a concern

From Today's SACC <u>Daily Outlook</u> Discussion

- 10-hr fuels are remaining very dry due to multiple days of extremely low RH and above normal temps, especially in the Appalachians.
- These conditions will likely improve for the next few days as the Gulf low pressure system draws higher RH into the region, then a passing front on Sunday will be followed by a long stretch of dry weather and accelerated drying potential next week.
- Most areas will then experience drying of finer fuels early next week as high pressure brings another round of very dry air into the geographic area.

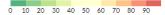
Today's WIMS Observations and NFDRS Estimates

Averaged by FDRA SIG Group

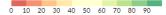
- This is available on the FWIP at: https://products.climate.ncsu.edu/fwip/nfdrs.php?data=ob&state=NC
- The averaged values are derived from the SIG Station Outputs for a particular FDRA (SIG station names shown in bold on the live link above)
- You can toggle the percentiles on/off, displaying below the actual calculated values these percentiles are based on analysis of "All Days" for entire calendar year range through 2021 for these stations

						A	verages	by FDI	RA									
FDRA	STATION_COUNT	NFDR_DATE	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
Southern Highlands	3	2023-04-13	116.40 92.1%	63.20 99.1%	25.37 99.8%	45.23 81.4%	42.67	6.88 0.4%	10.80 1.4%	18.05 31.0%	22.75 87.0%	106.13	100.00	69.0°F	21.7%	S 9.0 mph	0.00 in.	0.0
Central Mountains	3	2023-04-13	79.10 77.9%	44.77 86.4%	13.57 94.8%	27.73 71.0%	38.00	9.03 6.9%	14.32 12.6%	19.23 49.8%	21.84 83.1%	147.43	125.00	76.0°F	14.0%	S 6.3 mph	0.00 in.	0.0
Northern Highlands	2	2023-04-13	123.75 92.1%	51.15 92.0%	20.75 98.5%	64.60 90.7%	29.00	8.85 5.0%	14.52 23.3%	18.87 50.6%	21.59 80.1%	82.00	97.00	71.0°F	23.5%	E 6.5 mph	0.00 in.	0.0
Blue Ridge Escarpment	3	2023-04-13	94.80 78.3%	59.33 94.9%	20.80 96.9%	30.97 70.6%	92.00	7.10 2.5%	10.72 5.2%	15.41 8.3%	19.69 50.8%	134.53	121.33	79.0°F	21.3%	SW 5.0 mph	0.00 in.	0.0
Western Piedmont	3	2023-04-13	73.20 68.7%	43.93 76.8%	11.20 81.4%	23.43 63.7%	55.00	9.84 29.8%	16.23 50.3%	18.96 62.7%	22.53 94.8%	110.23	103.67	80.7°F	26.7%	SSW 4.3 mph	0.01 in.	1.0
Sandhills	3	2023-04-13	35.53 48.9%	40.30 50.3%	10.40 60.2%	5.57 61.1%	39.33	9.68 32.4%	13.92 23.9%	17.55 40.5%	22.43 86.8%	163.70	144.00	80.7°F	28.7%	S 5.0 mph	0.00 in.	0.0
Eastern Piedmont	4	2023-04-13	66.48 34.3%	39.53 49.3%	10.88 69.2%	21.33 27.7%	35.25	9.69 24.4%	12.93 14.1%	18.22 39.7%	22.03 89.0%	165.33	146.00	79.3°F	31.0%	SSW 6.0 mph	0.00 in.	0.0
Southern Coastal	7	2023-04-13	55.87 46.4%	37.04 57.3%	9.26 71.7%	15.71 38.4%	105.43	9.83 22.6%	15.90 38.7%	19.46 46.5%	22.91 88.7%	231.37	142.43	80.9°F	32.1%	SSW 4.9 mph	0.00 in.	0.0
Northern Coastal	4	2023-04-13	70.50 52.5%	52.35 83.8%	14.18 89.4%	18.18 35.6%	179.00	7.90 3.9%	12.36 2.6%	18.52 52.8%	22.56 91.6%	170.95	131.25	83.5°F	29.0%	SW 5.0 mph	0.00 in.	0.0





Fuel Moisture Percentiles (%)



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:

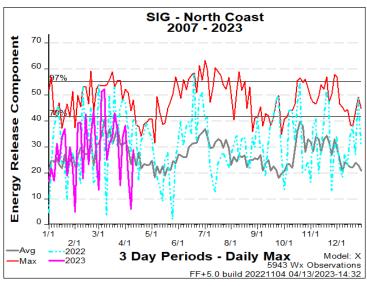
- Low to Moderate (26th to 100th percentile); shown in blue-green
- High (11th to 25th percentile); shown in yellow
- Very High to Extreme (0 to 10th percentile); shown in red and labeled as Critical

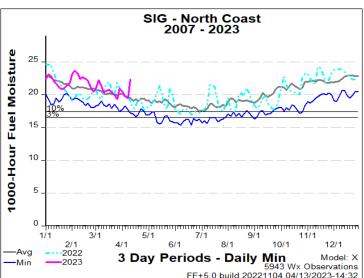
Other Notes:

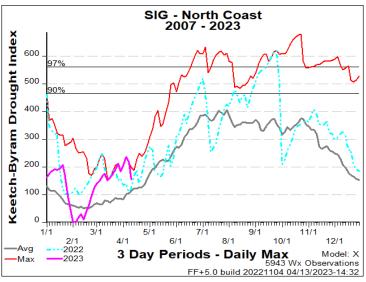
- Read the key and notes for each FDRA, included on the outlook matrix page.
- Forecasts are variable and can change significantly over a forecast cycle and across the landscape.
- This is another tool for gaining better situational awareness, and should be used for general planning purposes only.
- 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.

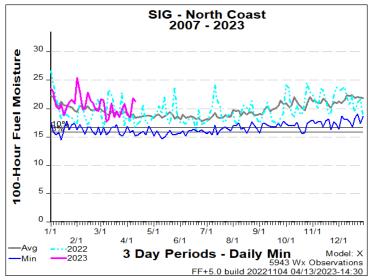
Region Specific – North Coast











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 14-Apr	SAT 15-Apr	SUN 16-Apr	MON 17-Apr	TUE 18-Apr	WED 19-Apr	THU 20-Apr
Avg. Max. Temp. (°F)	75	80	83	74	72	76	80
Avg. Min. Humidity (%)	71	56	49	36	31	32	36
Avg. 20' Wind Speed (mph)	5	6	7	11	10	6	5
Avg. Wind Direction*	S	SSW	SSW	WSW	W	WSW	WSW
Avg. Probability of Precip. (%)	74	25	29	6	2	2	5
Days Since a Wetting Rain**	0.0	1.0	2.0				
Forecast ERC (Fuel Model X)	27.3	17.3	20.9	26.5	38.1	37.3	33.8
Forecast BI (Fuel Model X)	44.1	34.7	41.4	69.8	99.3	58.6	42.5
Forecast IC (Fuel Model X)	4.6	2.7	4.2	8.5	14.4	8.2	5.8
Forecast 100-Hr. FMC	17.3	17.8	17.7	17.3	16.9	16.2	15.9
Forecast 1000-Hr. FMC	22.7	22.4	22.1	21.8	21.6	21.4	21.1
KBDI	179.0						

Data Source:

- Weather forecasts come from the National Weather Service's <u>Digital Forecast Database</u>. 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 <u>NFDRS Forecast</u> 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:

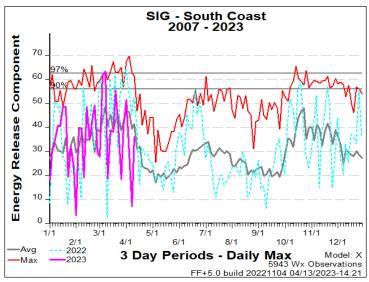
- Elizabeth City (311503)
 Greens Cross (313001)
 Pocosin Lakes (315201)
- Fairfield (317901)

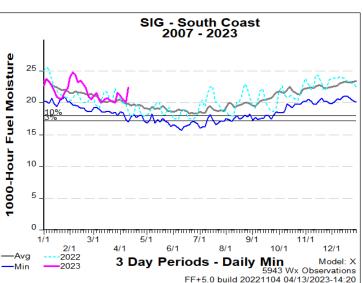
		Burning Conditions Can be	Burning Conditions Can be
KEY	Low to Moderate Burning Conditions	High CAUTION	Critical WATCH OUT!
Avg. Max. Temp.	Less than 45°F	Between 45°F and 55°F	Greater than 55°F
Avg. Min. Humidity	Greater than 40%	Between 35% and 40%	Less than 35%
Avg. 20' Wind Speed	Less than 10 mph	Between 10 mph and 15 mph	Greater than 15 mph
Avg. Wind Direction*	Criticality of wind dire	ction is highly dependent on burn ope	rations and/or structures threatened.
Days Since a Wetting Rain**	A wetting rain is defin	ed as 0.10" or greater. This is an avera	ge 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

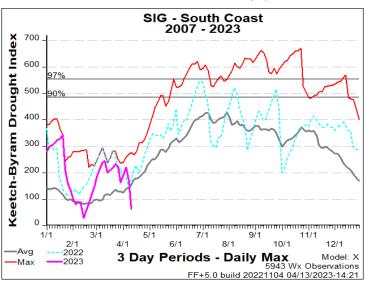
Other factors to consider when determining fire danger: sky conditions, precipitation amount, number of days since rain, and season

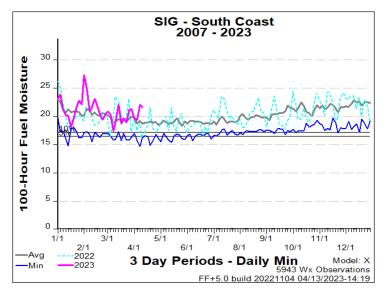
Region Specific – South Coast











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 14-Apr	SAT 15-Apr	SUN 16-Apr	MON 17-Apr	TUE 18-Apr	WED 19-Apr	THU 20-Apr
Avg. Max. Temp. (°F)	79	80	83	74	75	78	81
Avg. Min. Humidity (%)	67	53	50	35	29	33	37
Avg. 20' Wind Speed (mph)	5	5	7	11	9	7	5
Avg. Wind Direction*	SSE	SW	SSW	WSW	W	W	SSW
Avg. Probability of Precip. (%)	77	13	20	6	1	1	6
Days Since a Wetting Rain**	0.0	1.0	2.0				
Forecast ERC (Fuel Model X)	22.2	17.4	19.5	23.5	33.1	32.0	28.4
Forecast BI (Fuel Model X)	41.1	33.6	38.8	52.7	70.1	47.8	36.9
Forecast IC (Fuel Model X)	4.8	2.9	4.2	7.0	11.5	7.8	5.7
Forecast 100-Hr. FMC	19.3	19.1	18.4	17.9	17.3	16.3	15.8
Forecast 1000-Hr. FMC	22.9	22.8	22.5	22.2	22.0	21.7	21.4
KBDI	105.4						·

Data Source:

- Weather forecasts come from the National Weather Service's <u>Digital Forecast Database</u>. 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 <u>NFDRS Forecast</u> 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)

and season

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 dire	ction is highly dependent on burn ope	rations and/or structures threatened.
Days Since a Wetting Rain**	A wetting rain is define	ed as 0.10" or greater. This is an avera	ge 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 who	en determining fire dang	ger: sky conditions, precipitation ar	mount, number of days since rain,

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 Wook	FDRA Matrix Summ	ary - NCFS Region 1		
Date	Day of Week	North Coast	South Coast		
14-Apr	Fri	Low/Mod	Low/Mod		
15-Apr	Sat	Low/Mod	Low/Mod		
16-Apr	Sun	Low/Mod	Low/Mod		
17-Apr	Mon	High	High		
18-Apr	Tues	Critical	High		
19-Apr	Wed	Low/Mod	High		
20-Apr	Thurs	Low/Mod	High		

Wakefield NWS (Fire Weather Planning Forecast Discussion):

National Weather Service WAKEFIELD VA 315 PM EDT Thu Apr 13, 2023

Warm and dry conditions continue this afternoon with min RH values of 20-30% and SW winds 5-12 mph (8-15 mph with gusts to 20 mph over the Lower MD Eastern Shore). Low pressure moves into the southeast states Friday with clouds and afternoon/evening showers/storms pushing into S portions of the area. However, N portions of the area could see min RH of 30-35%.

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

National Weather Service Newport/Morehead City NC 405 PM EDT Thu Apr 13, 2023

Low pressure will track across the Southern Appalachians and into the Mid-Atlantic Friday into Saturday bringing periods of showers and scattered thunderstorms across the area. Another cold front will move through the region Sunday night with high pressure building in from the west early next week.

Rain will be heavy at times Friday with widespread amounts of .50-1.5" expected and heavier amounts possible.

Wilmington NWS (Fire Weather Planning Forecast Discussion):

National Weather Service Wilmington NC 300 PM EDT Thu Apr 13, 2023

A warm front will lift across the area tonight, bringing showers and a chance of thunderstorms late tonight through midday Friday. Weak high pressure will bring a warm and dry Saturday while a weak cold front moves through on Sunday with only minor rain chances. Much of next week remains warm and dry.

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 afternoon

forecast discussion from Apr 12, 2023

□ Display

This forecast was issued on Thursday, April 13, 2023 at 2:26 pm.

This forecast is currently valid.

Today's Air Quality Conditions

Ozone readings are building into the Code Yellow range over most of North Carolina this afternoon. Fine particulate readings near the Code Green/Code Yellow threshold are being observed over most of interior North Carolina with lower values over the Mountains and along the coast.

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

Areas of rain and thunderstorms under cloudy skies are expected tomorrow as a strong storm system moves northward through the Carolinas. This unsettled weather should bring ozone and fine particulate readings into the Code Green range statewide.

Outlook

A transient upper-level ridge moving across the Carolinas should allow for a brief period of dry weather Saturday, before unsettled and warm weather builds in again for Sunday ahead of an approaching upper-level trough. Code Green air quality is expected statewide both days.

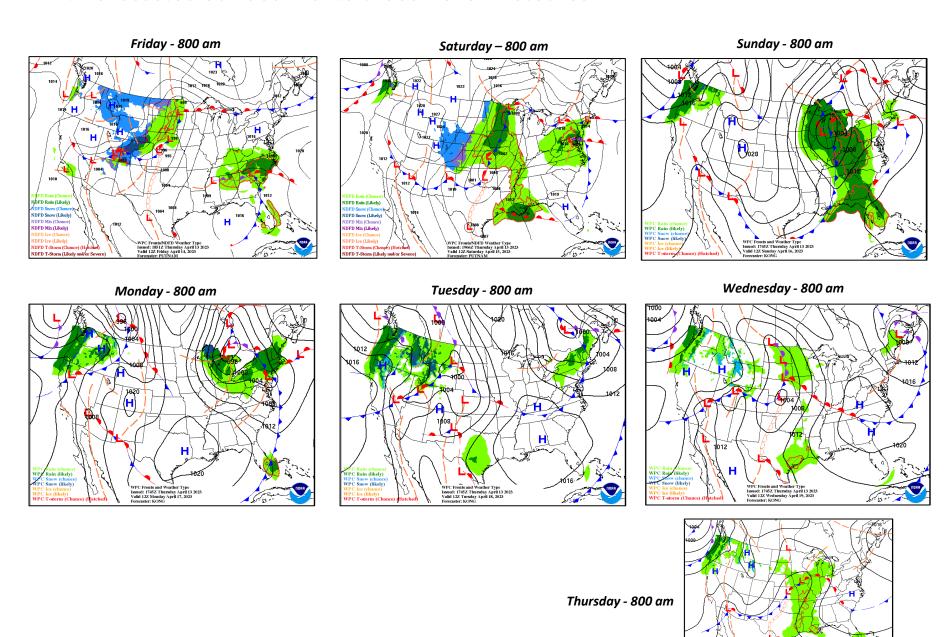
Author: Tardif- NC Division of Air Quality

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 13)	60 to 90	Yellow
Friday (Apr 14)	40	Green
Saturday (Apr 15)	45 to 50	Green
Sunday (Apr 16)	48	Green

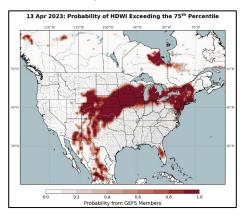
WPC Forecasted Surface Fronts & Sea-Level Pressures



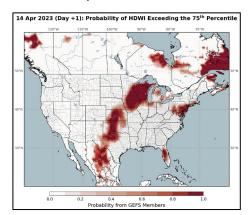
Location: https://www.wpc.ncep.noaa.gov/#

Hot-Dry-Windy Index (HDW)

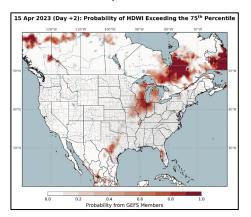
Thursday > 75th Percentile



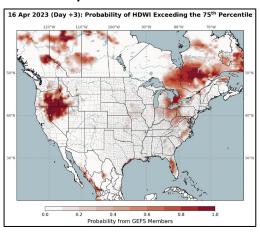
Friday > 75th Percentile



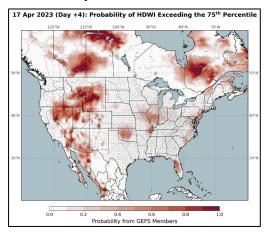
Saturday > 75th Percentile



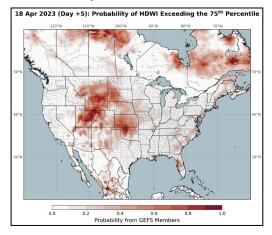
Sunday > 75th Percentile



Monday > 75th Percentile

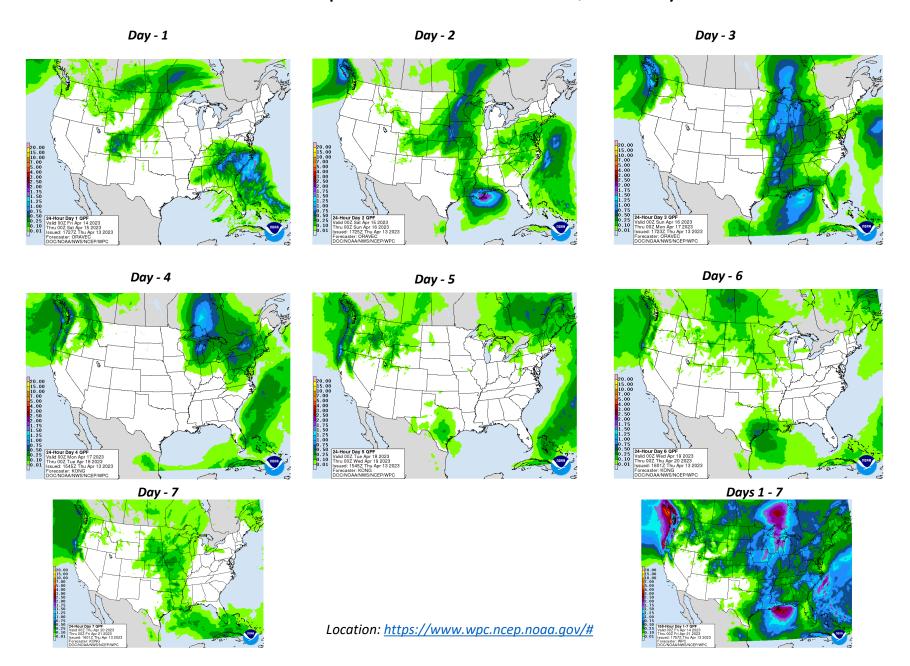


Tuesday > 75th Percentile



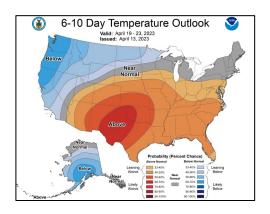
- Another visualization tool to pick up on broader weather, but with *limitations
- Only uses Max VPD (atmospheric moisture & temp) & Max Wind Speed to generate outputs
- Coarse Resolution 0.5 Degree Grid
- No Account of Local Fuel Conditions and Topo

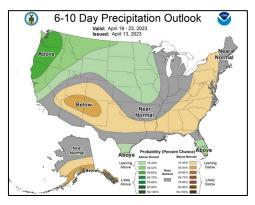
Quantitative Precipitation Forecast, 7-Day

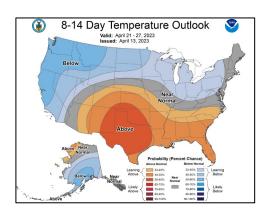


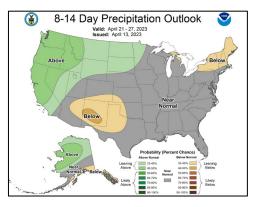
Temp & Precip Outlook

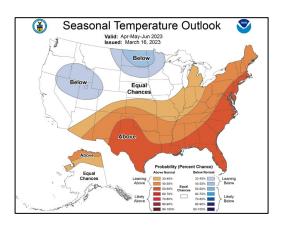
6-10 Day, 8-14 Day & Seasonal (Apr/May/June)

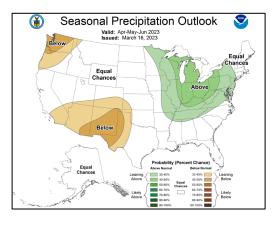








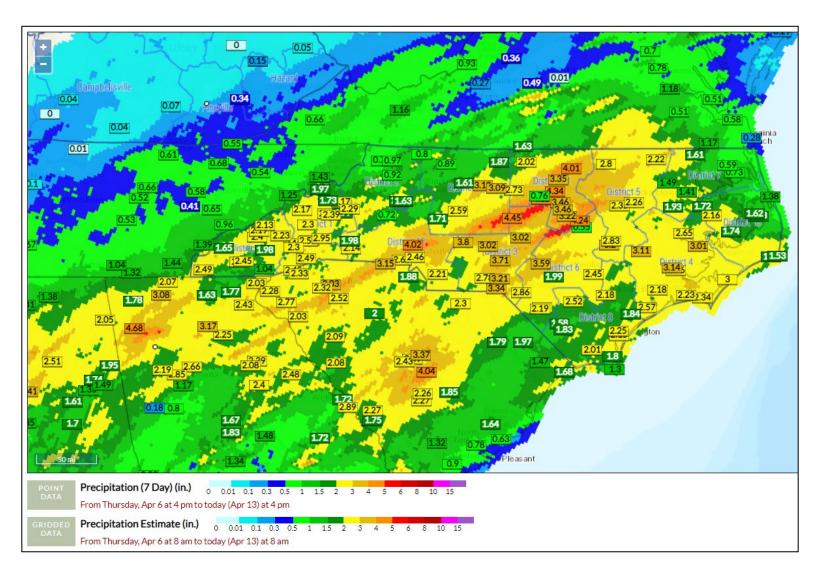




Source: https://www.cpc.ncep.noaa.gov/

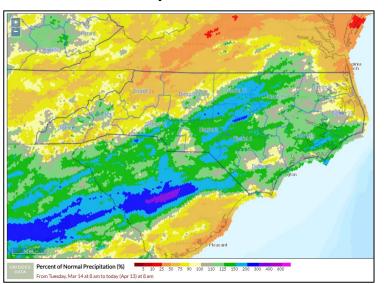
7 Day Precipitation Totals

FWIP (Point accumulation ending at 1600 on 4/13, Grid ending 0800 4/13)

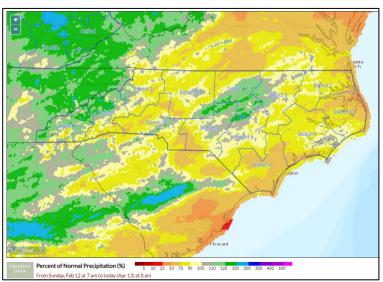


Percent of Normal Precip, FWIP (Ending 0800 4/13)

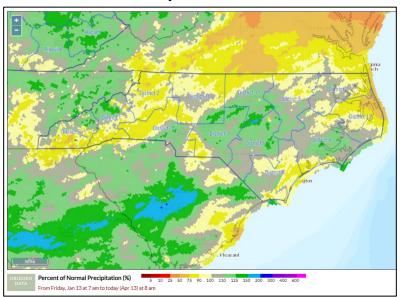
30-Day % of Normal



60-Day % of Normal

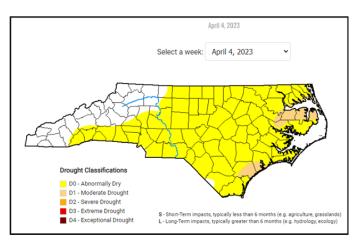


90-Day % of Normal

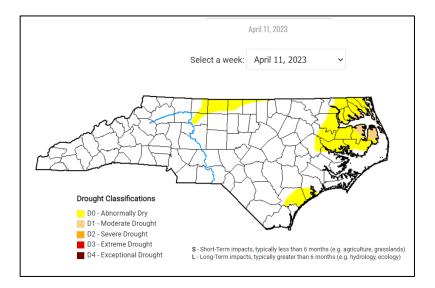


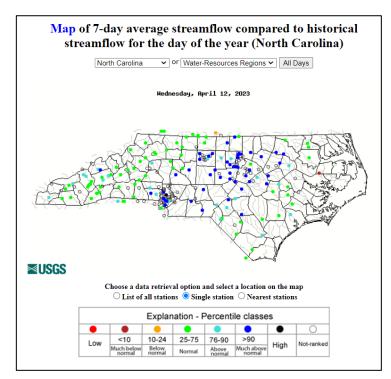
Drought Situation

Previous Week:



Current Week:



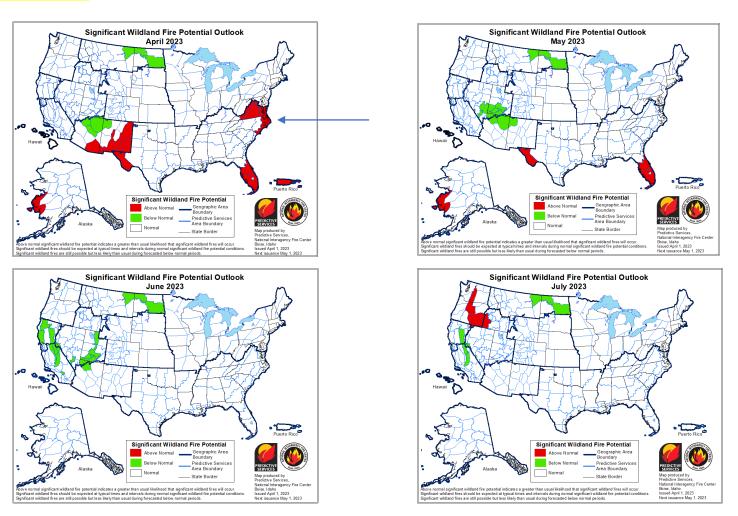


- D-0 Abnormally Dry Conditions Decreased (~12.5% of State)
- D-1 Moderate Drought in Several Counties. (~1.3% of State)
- 7-Day Stream flow averages continue to decline, note decline in both East and West.
- Example: 7-Day averages responded to rains statewide, will begin to decline again – especially with green-up influences.

Sources: https://www.ncdrought.org/map-archives, https://www.ncdrought.org/map-archives, https://waterwatch.usgs.gov/index.php?m=pa07d&r=nc&w=map

Significant Wildland Fire Potential Outlook:

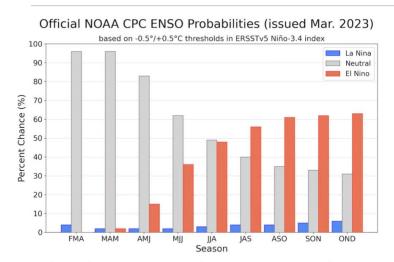
Updated 4/1/23 – Next Update on 5/1/23



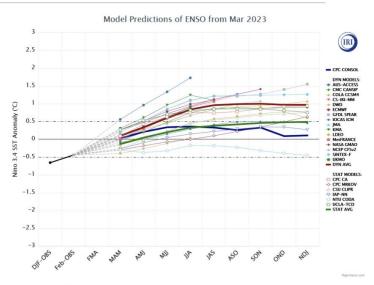
A significant fire is one that requires resources from outside the district (other than aviation). IA potential is based more on shorter term weather factors. Just a few days of dry weather can increase IA activity considerably as we have already seen this year.

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.

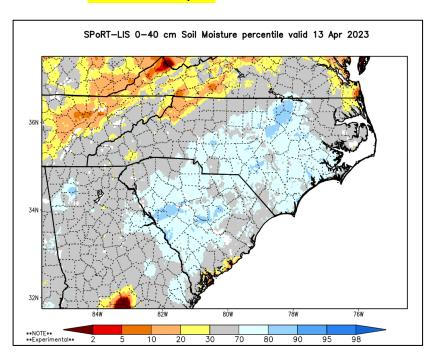


https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-sst_table

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

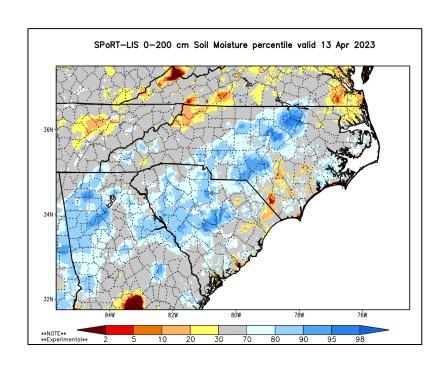
SPoRT Relative Soil Dryness

0-40 cm Depth



 Note areas that missed the heaviest rains to the northwest and northeast.

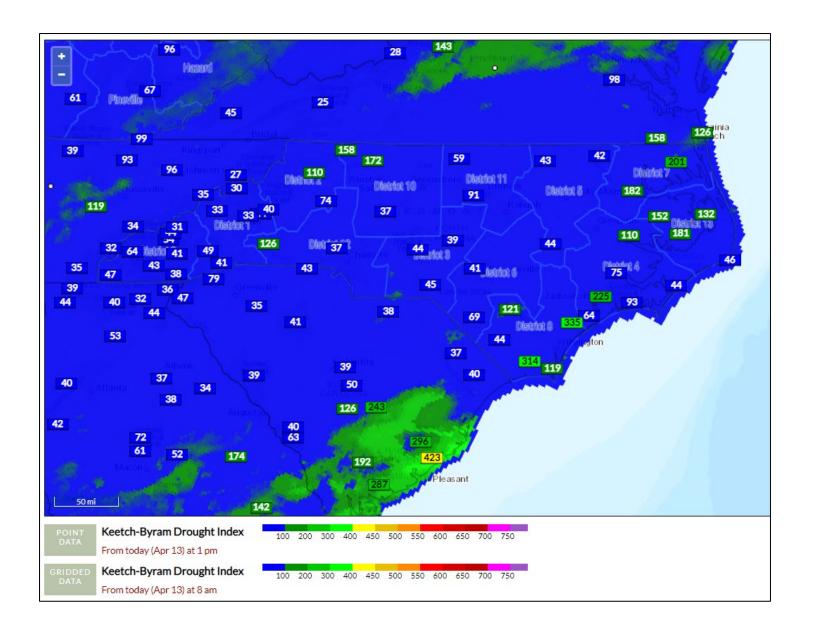
0-200 cm Depth



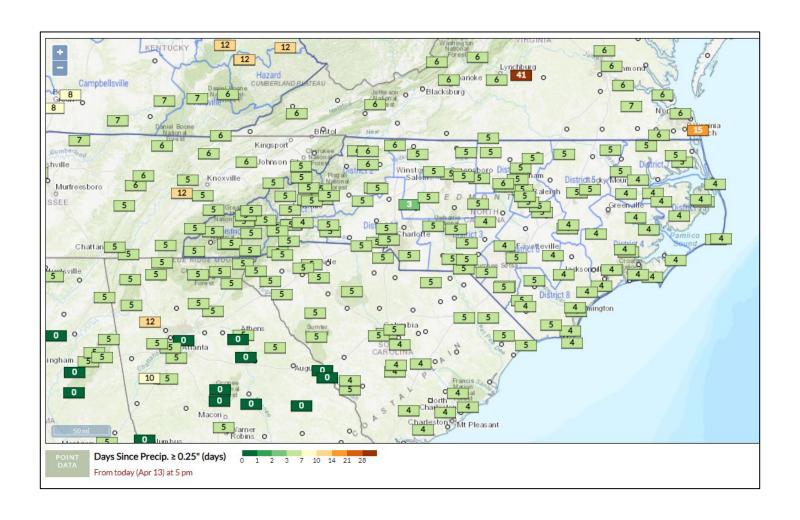
Source: https://weather.msfc.nasa.gov/sport/case studies/lis NC.html

KBDI - Gridded & Station Points

FWIP (Point calculation from 1300 on 4/13, Grid ending 0800 4/13)

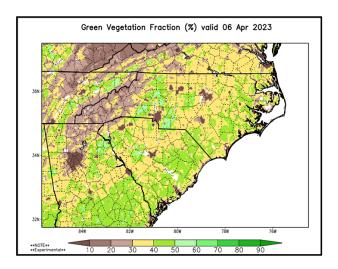


Days Since Daily Precip ≥ 0.25"



Green Fraction & Green-Up Anomaly

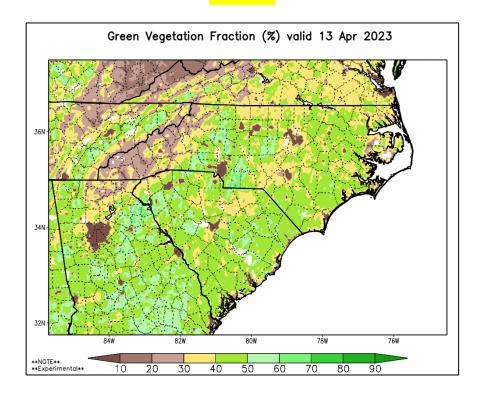
Last Week



 Green-Up continues, generally about two weeks ahead for lower elevations.

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

Current



Link: https://weather.msfc.nasa.gov/cgi-bin/basicLooper.pl?category=lis NC&initialize=first®ex=gvf 20230228