



# February - 2023

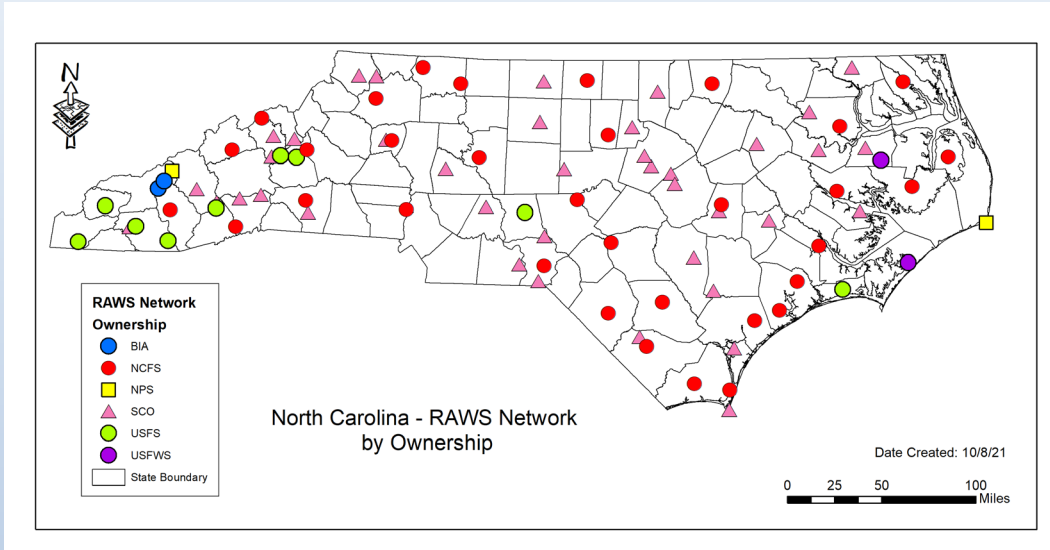
## Monthly/Seasonal Fire Outlook

Jamie Dunbar  
Fire Environment Staff Forester  
[jamie.dunbar@ncagr.gov](mailto:jamie.dunbar@ncagr.gov)

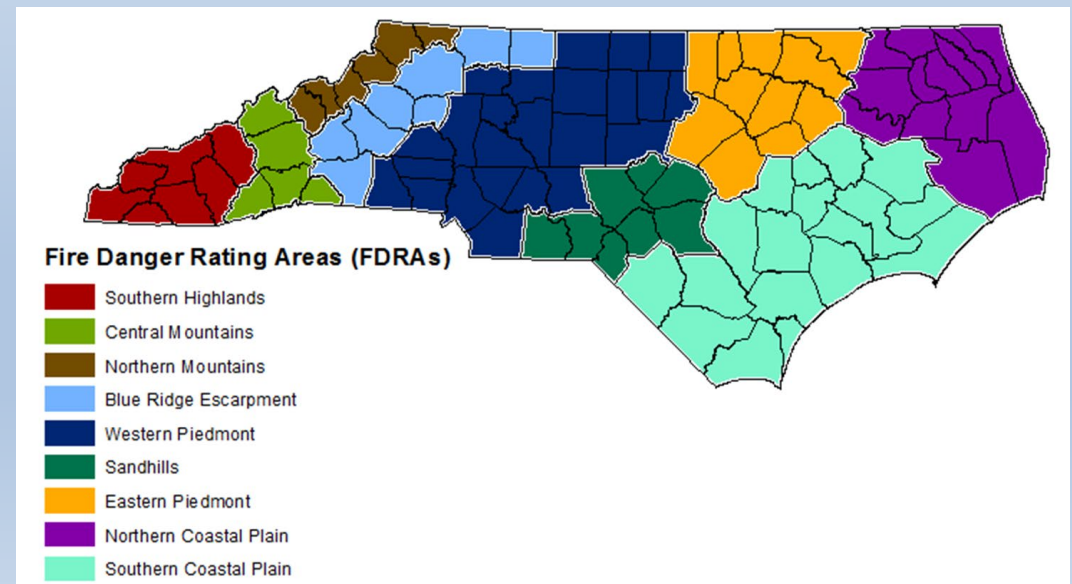
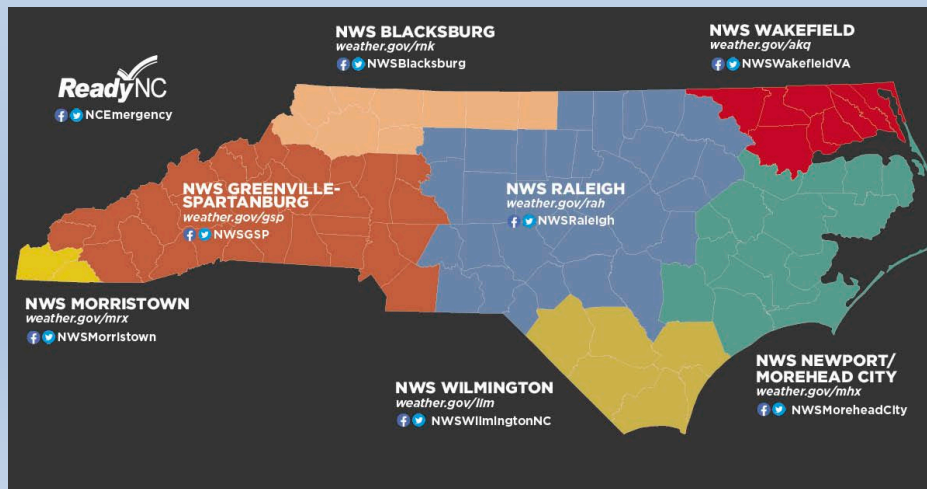




# Spring Fire Outlook



- 39 Agency RAWS Stations (Includes 6 Portables)
- Many Partner Stations
- 1 Soil Moisture Station & 1 Pending
- 9 FDRAs
- 7 NWS Forecast Offices
- NFDRS V4, All legacy models being removed
- FDOP Just Signed

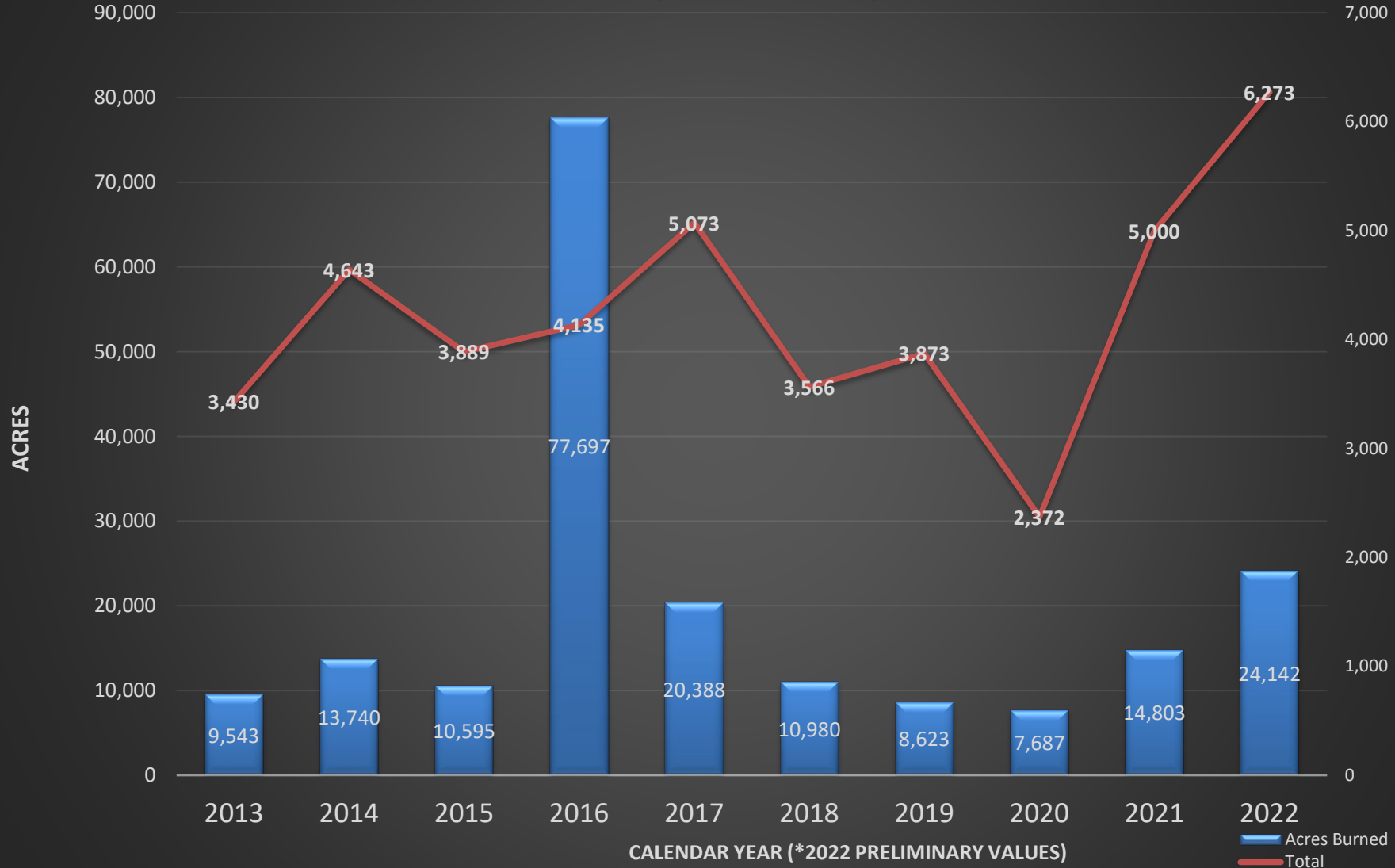




# Spring Fire Outlook



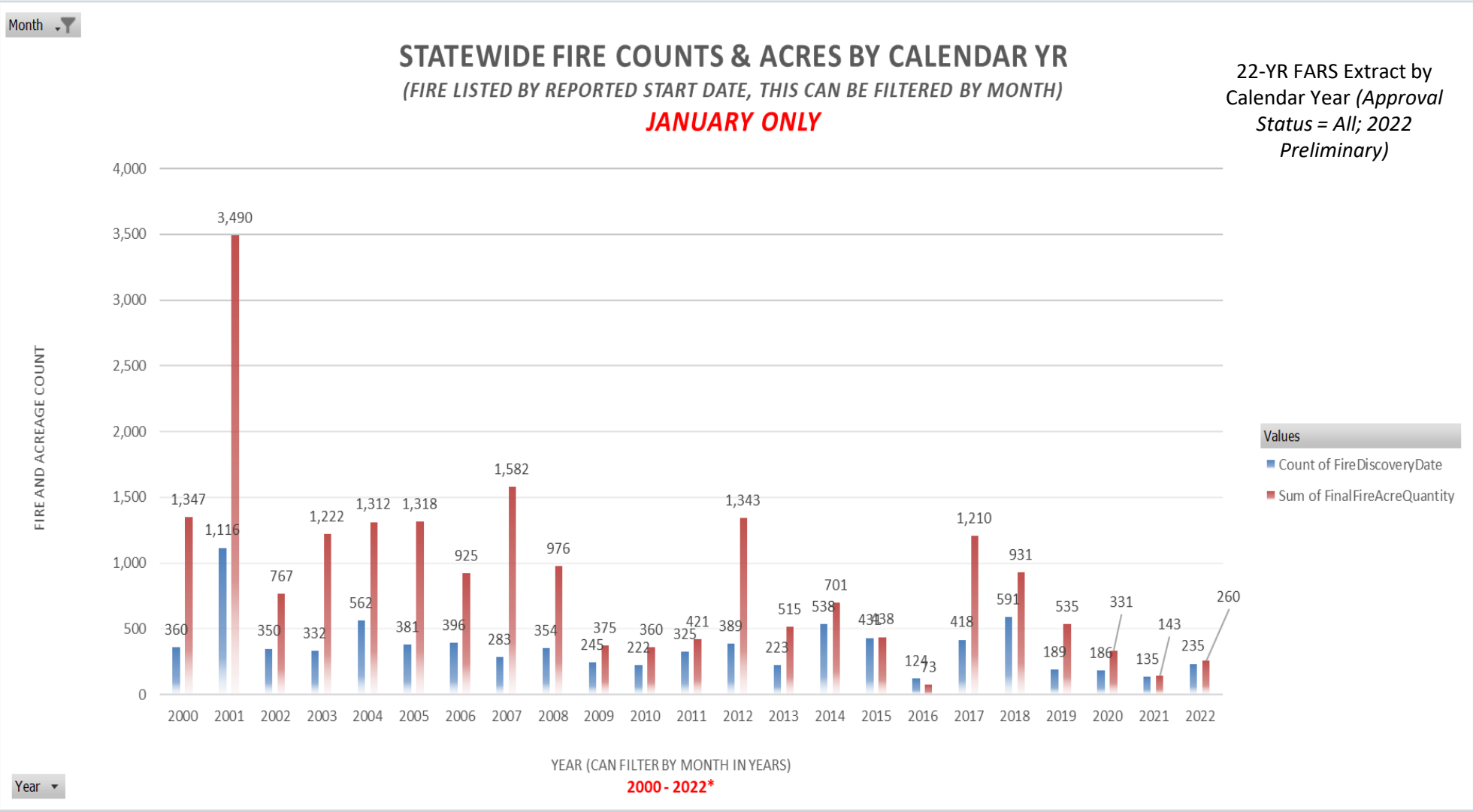
### 10-Yr Fire Acreage & Count by CY - Statewide (2013 - 2022\*)



10-YR FARS Extract by  
Calendar Year  
(Approval Status = All;  
2022 Preliminary)



# Spring Fire Outlook



Signal 14 Extract for January 2023:

357 fires for 550 acres

~10yr Avg is 300 fires for 500 acres

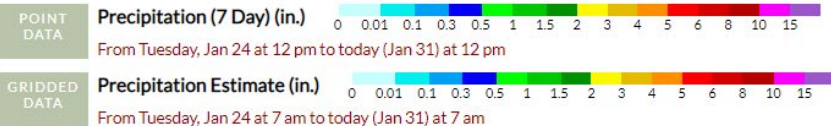
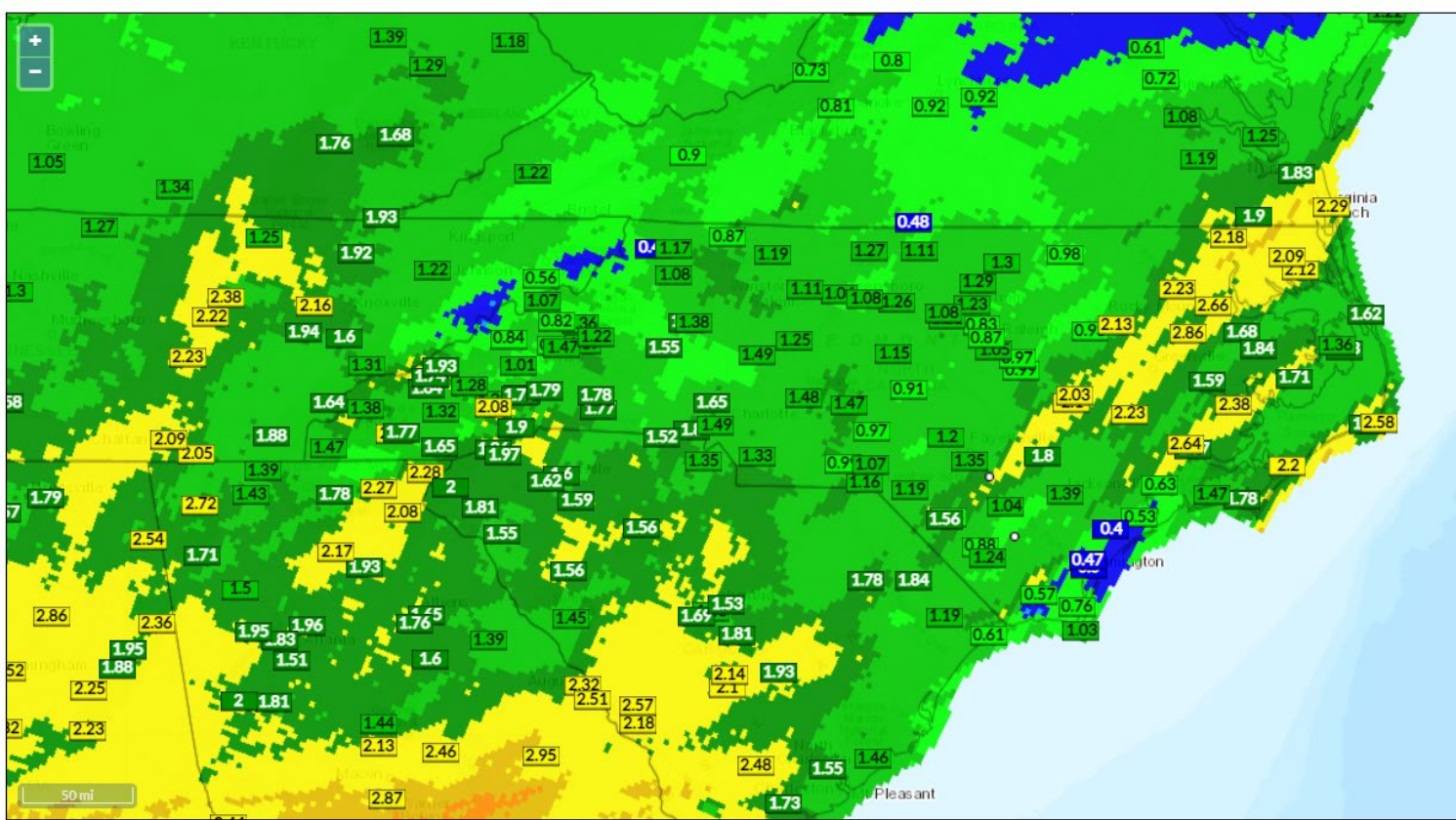




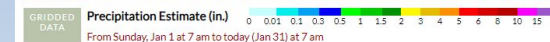
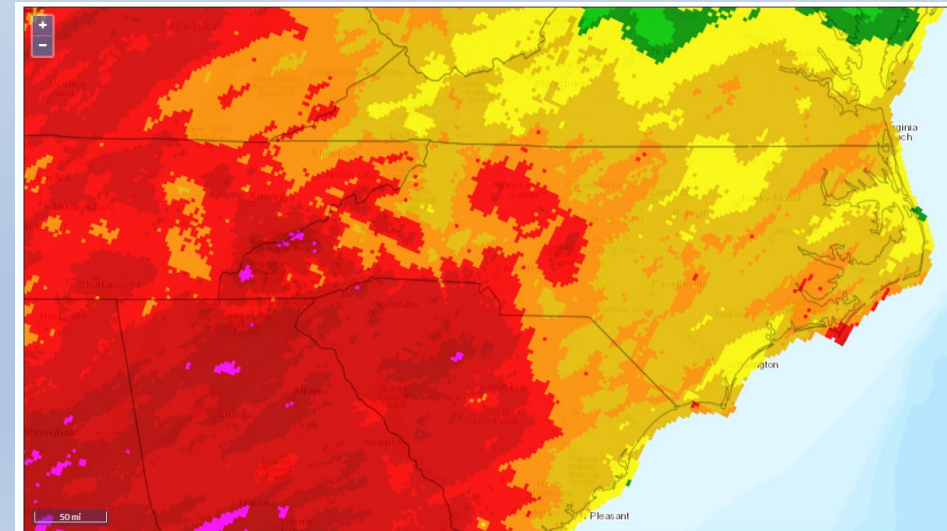
# Spring Fire Outlook



## 7-Day Rainfall Estimate Ending 1/31



## 30-Day Precip Estimate, Ending 1/31 am







# Spring Fire Outlook



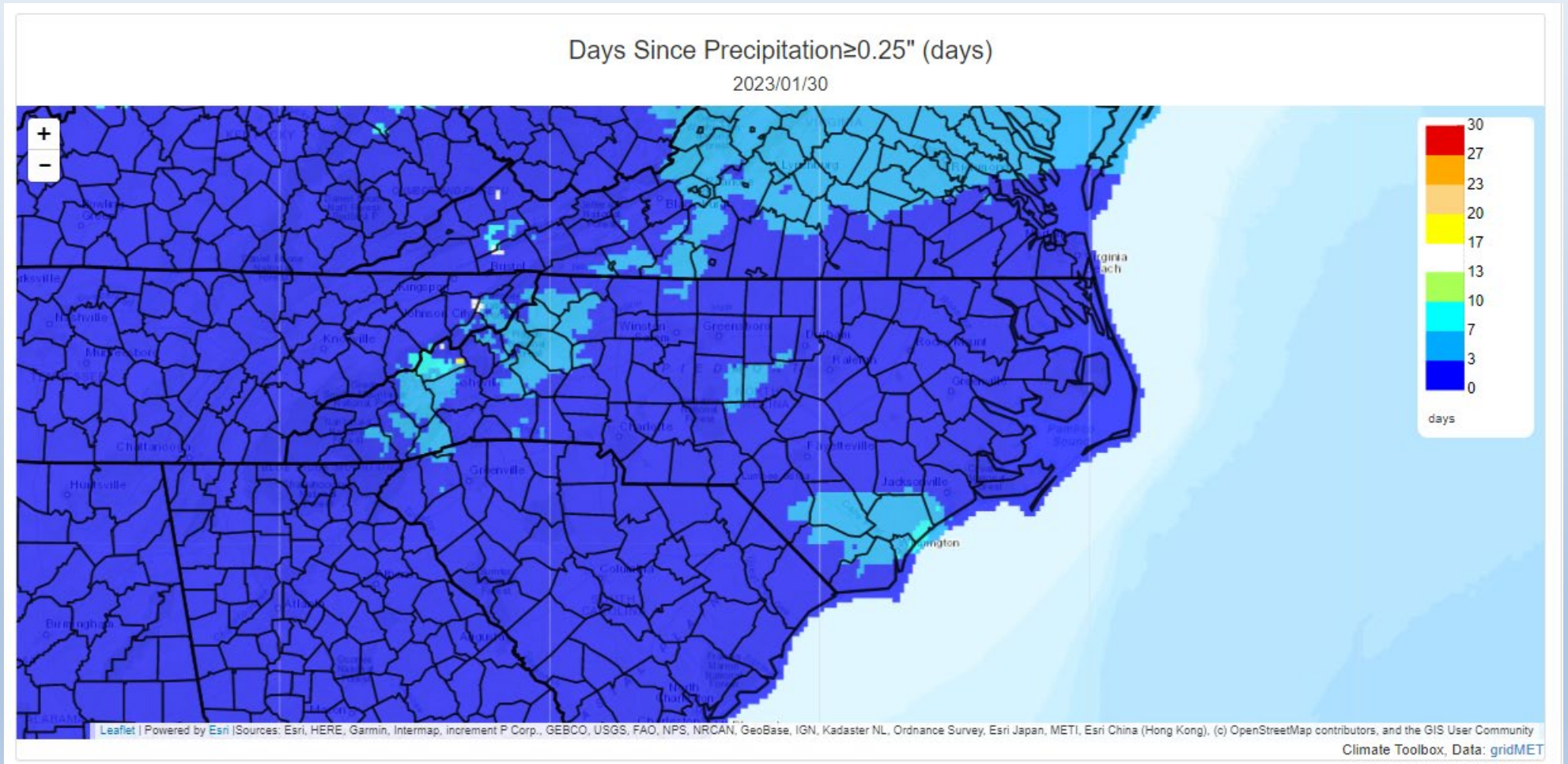
Days since Precip of at least 0.25"

For NC:

Generally, 1-4 days.

*Current to end of 1/30/23*

*Prior to the pattern shift – many of our driest areas had approached 20+ Days*





# Spring Fire Outlook

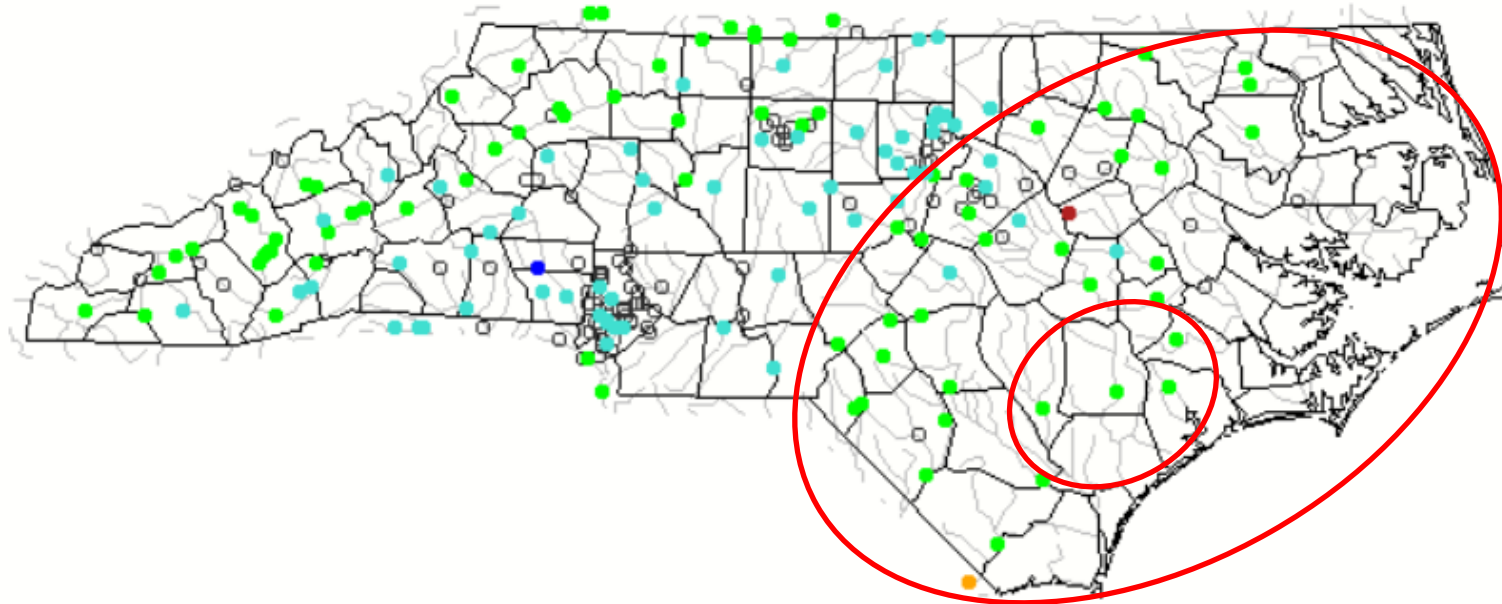


<https://waterwatch.usgs.gov/index.php?m=pa07d&r=nc&w=map>

7-Day Avg.  
Stream Flow  
Conditions

Recent  
Improvements  
Noted...

Monday, January 30, 2023



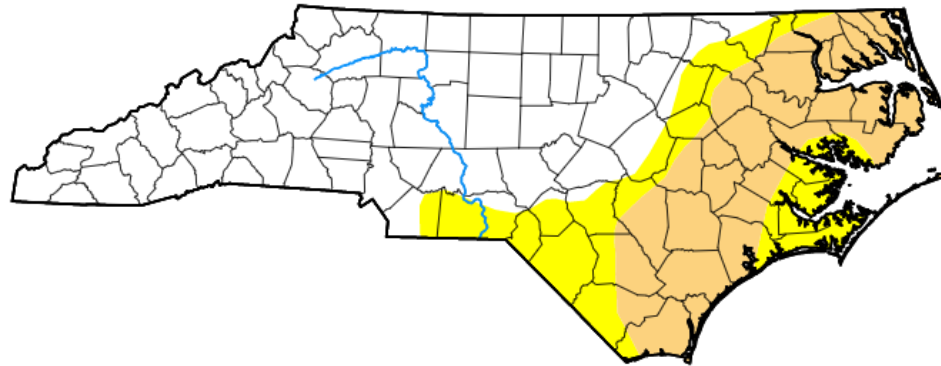
Explanation - Percentile classes								
Low	<10	10-24	25-75	76-90	>90		High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal			



# Spring Fire Outlook










Positive  
Impact from  
Rain – Will  
show on  
Thursday's  
Published  
Update.



**Map released: Thurs. January 26, 2023**

**Data valid: January 24, 2023 at 7 a.m. EST**

## Intensity

-  None
-  D0 (Abnormally Dry)
-  D1 (Moderate Drought)
-  D2 (Severe Drought)
-  D3 (Extreme Drought)
-  D4 (Exceptional Drought)
-  No Data

## Authors

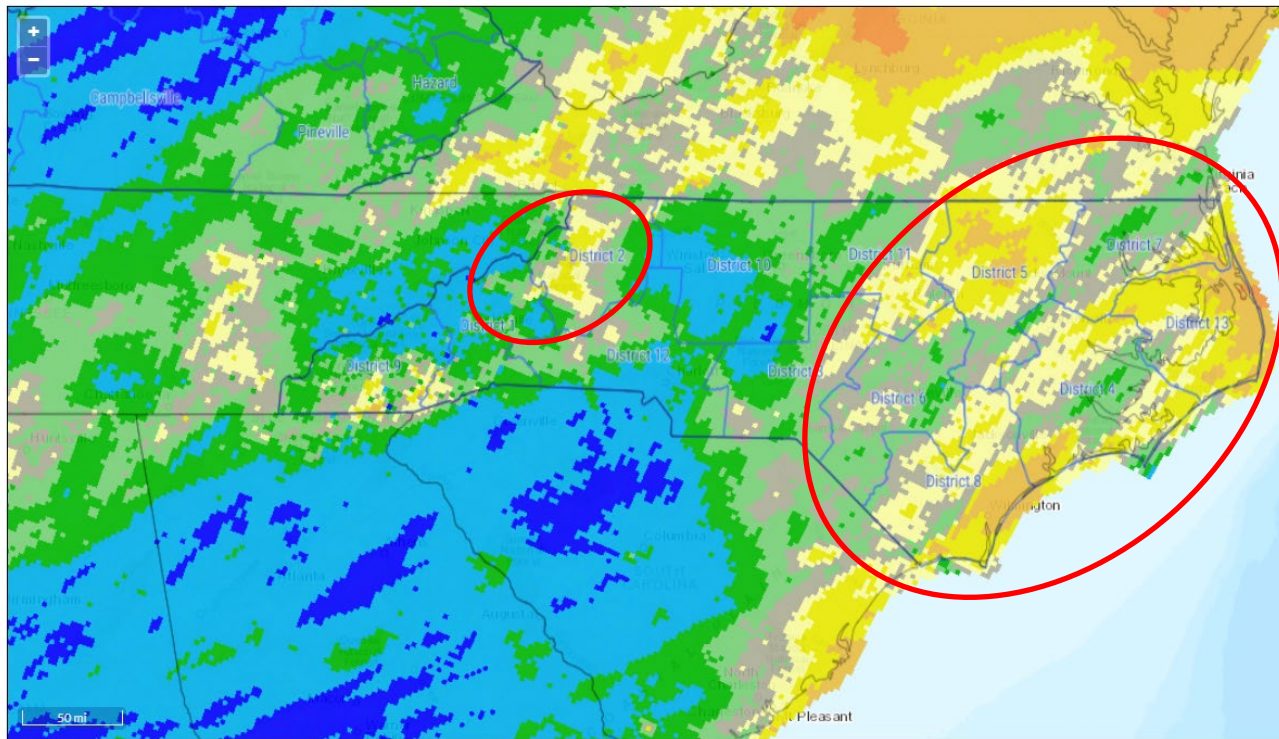
United States and Puerto Rico Author(s):

**Rocky Bilotta**, NOAA/NCEI





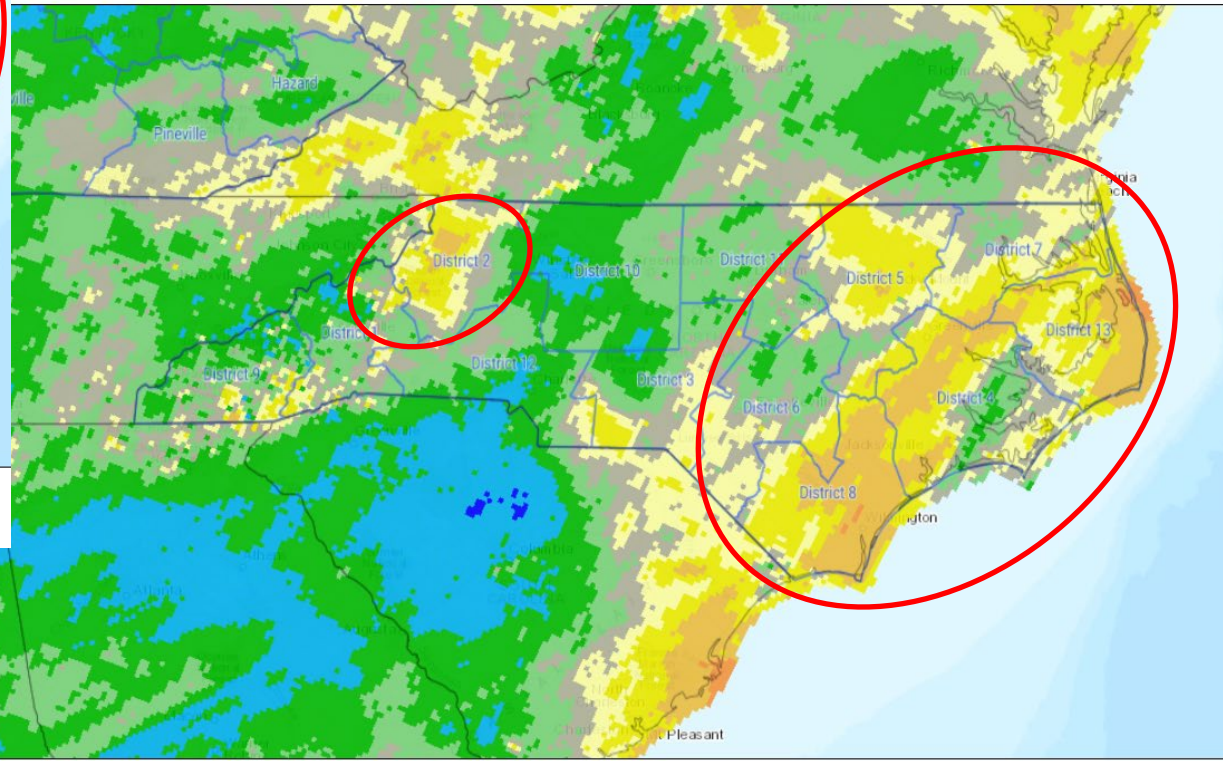
# Spring Fire Outlook



GRIDDED DATA Percent of Normal Precipitation (%) From Sunday, Jan 1 at 7 am to today (Jan 31) at 7 am

5 10 25 50 75 90 100 110 125 150 200 300 400 600

30-Day % of Normal



GRIDDED DATA Percent of Normal Precipitation (%) From Friday, Dec 2, 2022 at 7 am to today (Jan 31) at 7 am

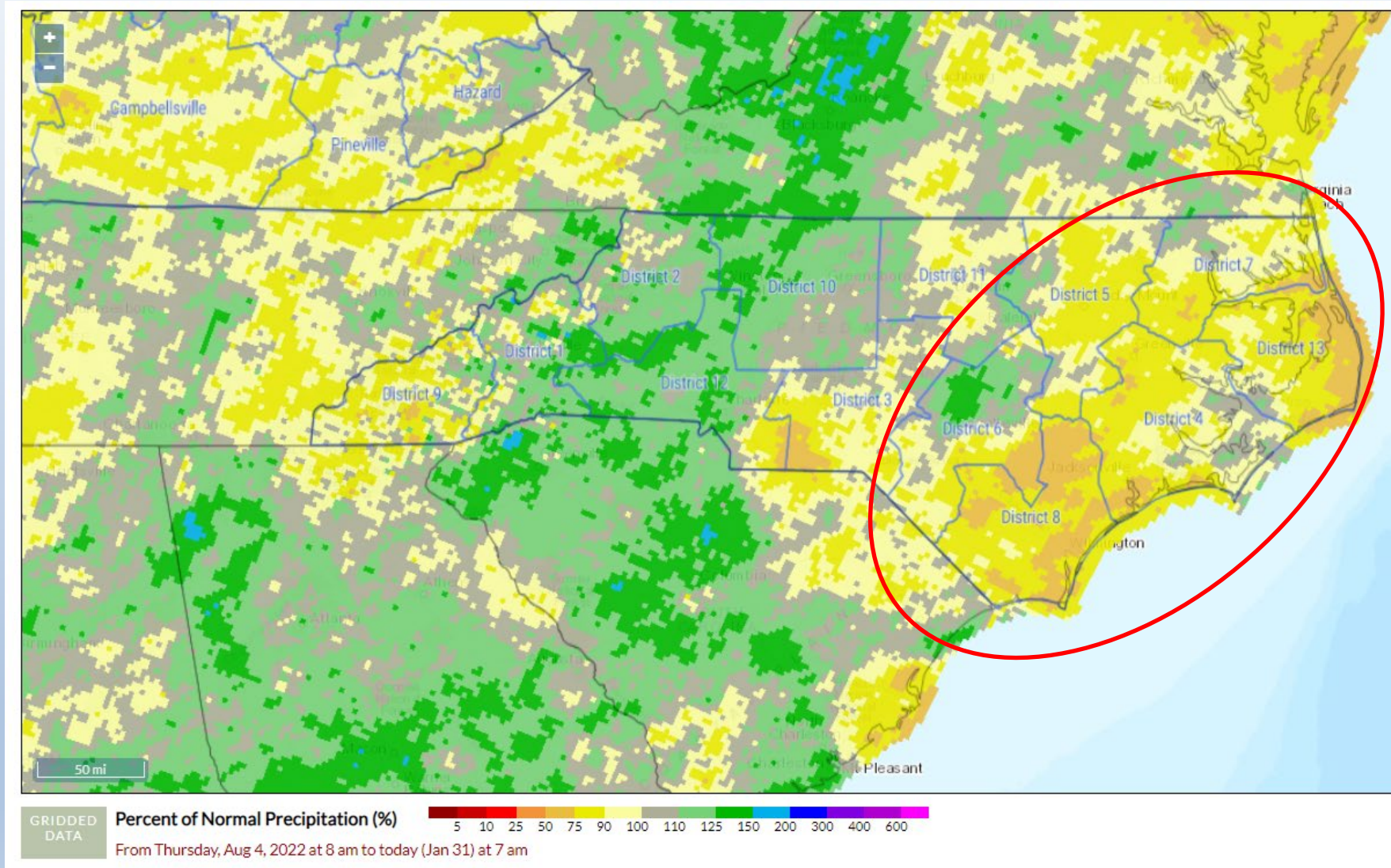
5 10 25 50 75 90 100 110 125 150 200 300 400 600

60-Day % of Normal





# Spring Fire Outlook



6-Month % of Normal



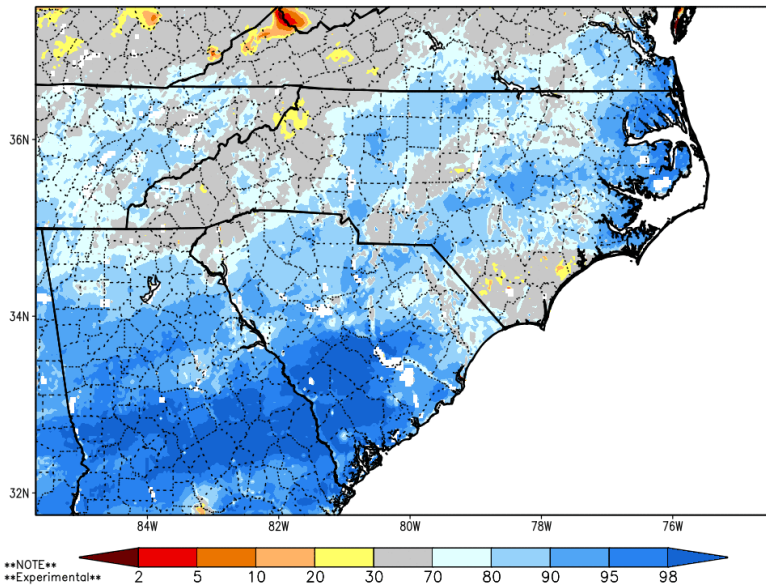
# Spring Fire Outlook

~ 0-16"

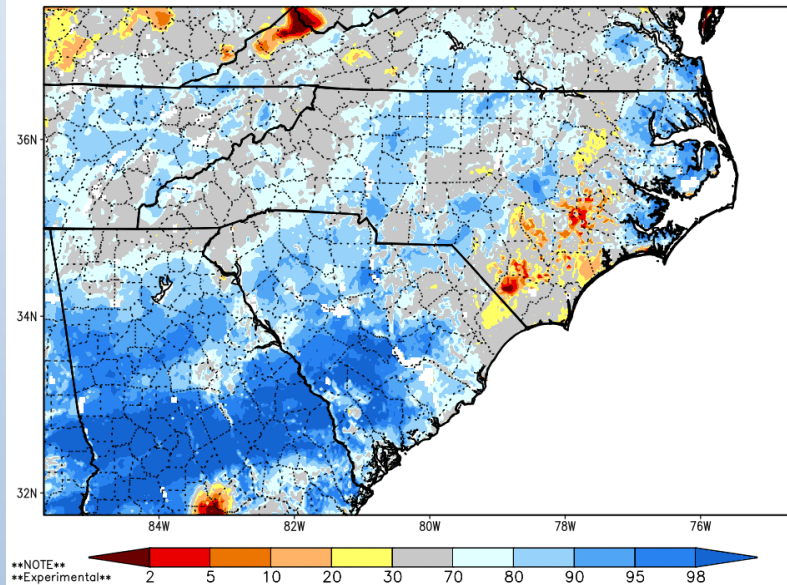
~ 0-39"

~ 0-79"

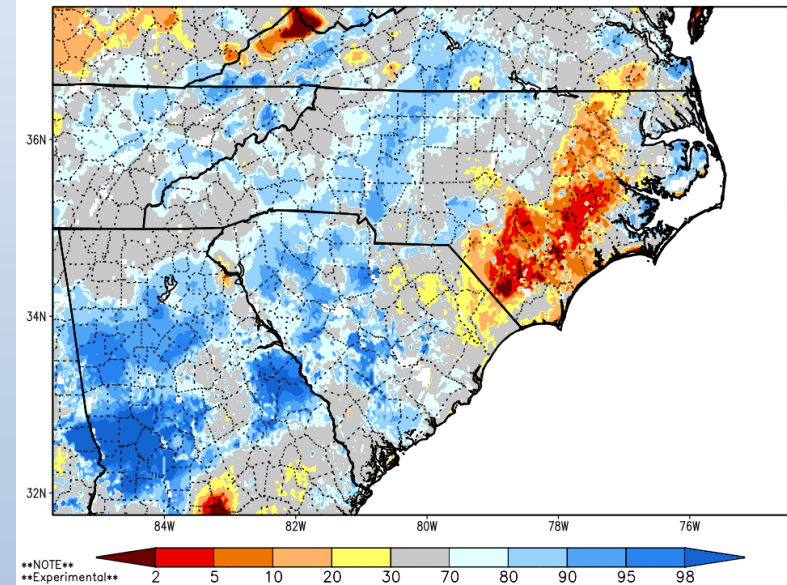
SPoRT-LIS 0-40 cm Soil Moisture percentile valid 31 Jan 2023



SPoRT-LIS 0-100 cm Soil Moisture percentile valid 31 Jan 2023



SPoRT-LIS 0-200 cm Soil Moisture percentile valid 31 Jan 2023



Current improvements shown to 1-M, Deeper blend still showing dryness in drought mapped areas.

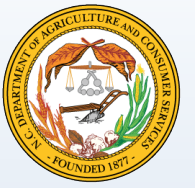
[https://weather.msfc.nasa.gov/sport/case\\_studies/lis\\_NC.html](https://weather.msfc.nasa.gov/sport/case_studies/lis_NC.html)

<https://nasagrace.unl.edu/>

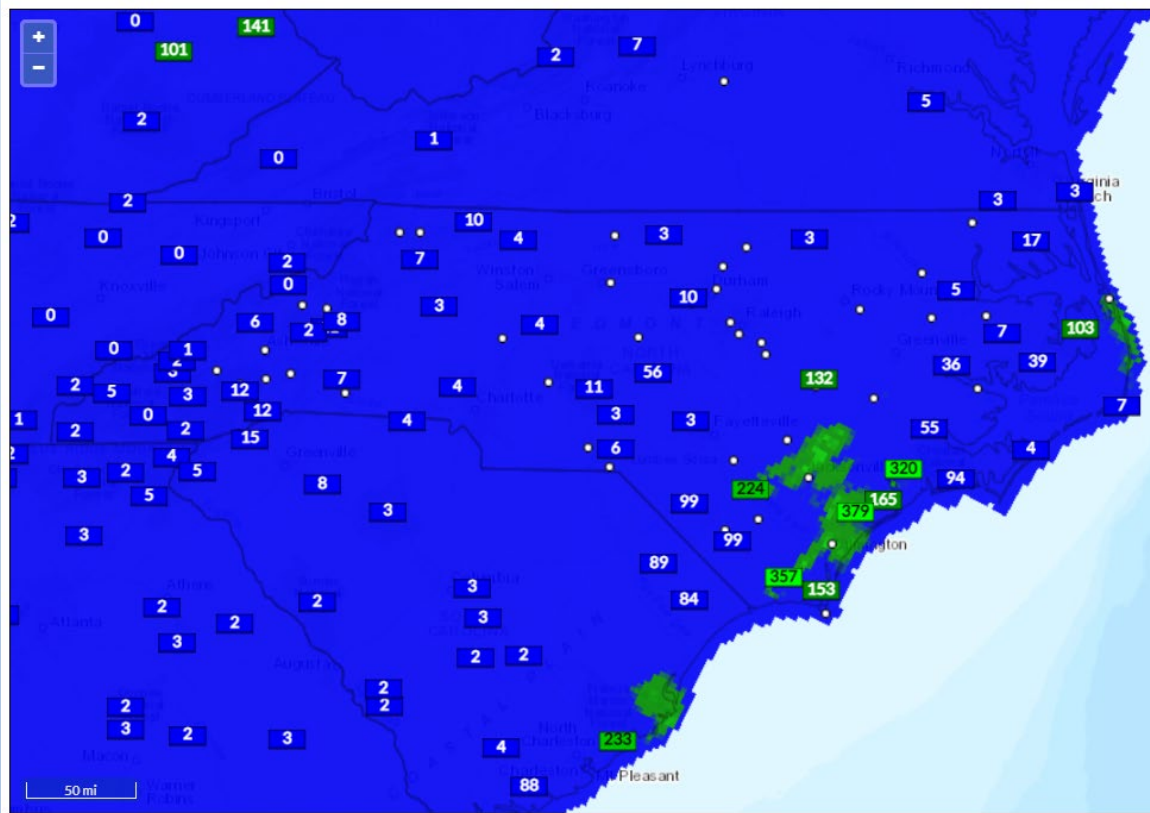




# Spring Fire Outlook



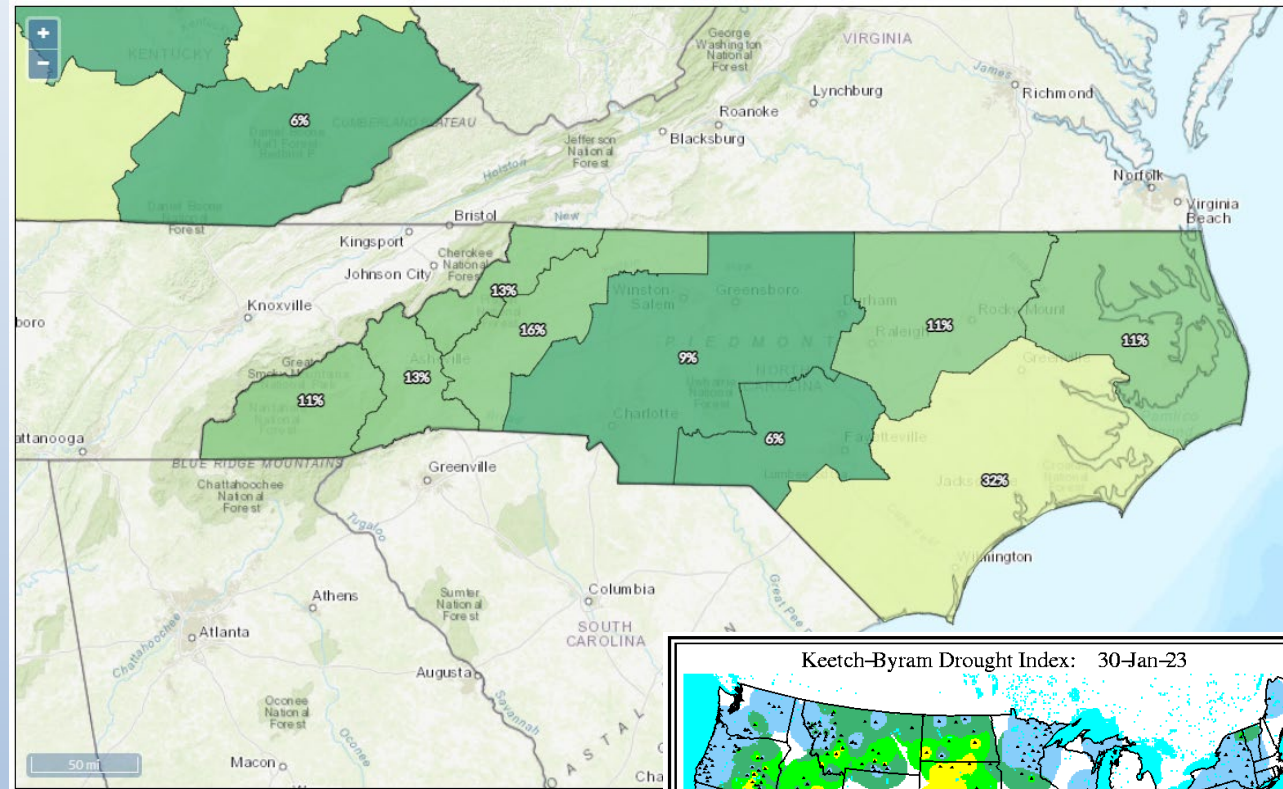
Note: Recent South Coast FDRA Improvement



**POINT DATA** Keetch-Byram Drought Index  
From yesterday (Jan 30) at 1 pm

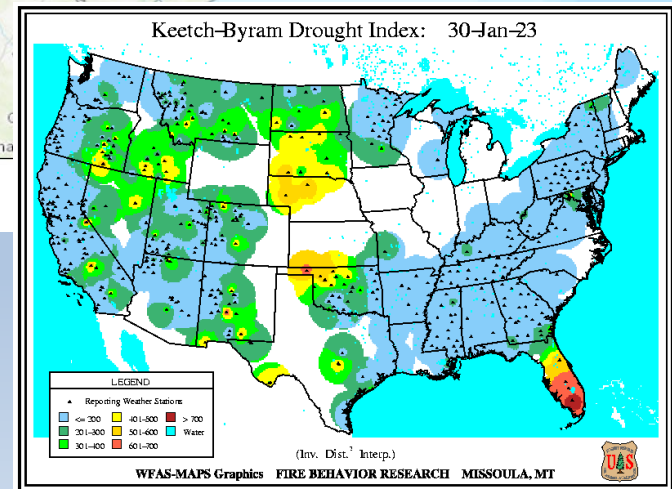
**GRIDDED DATA** Keetch-Byram Drought Index  
From yesterday (Jan 30) at 7 am

*Note: Gridded precipitation and drought data ending at midnight today will be available after noon ET*



**POINT DATA** Forecasted KBDI Pctl. (%)  
For today (Feb 1) at 1 pm

*KBDI Percentile By FDRA 2/1  
(for all days)*





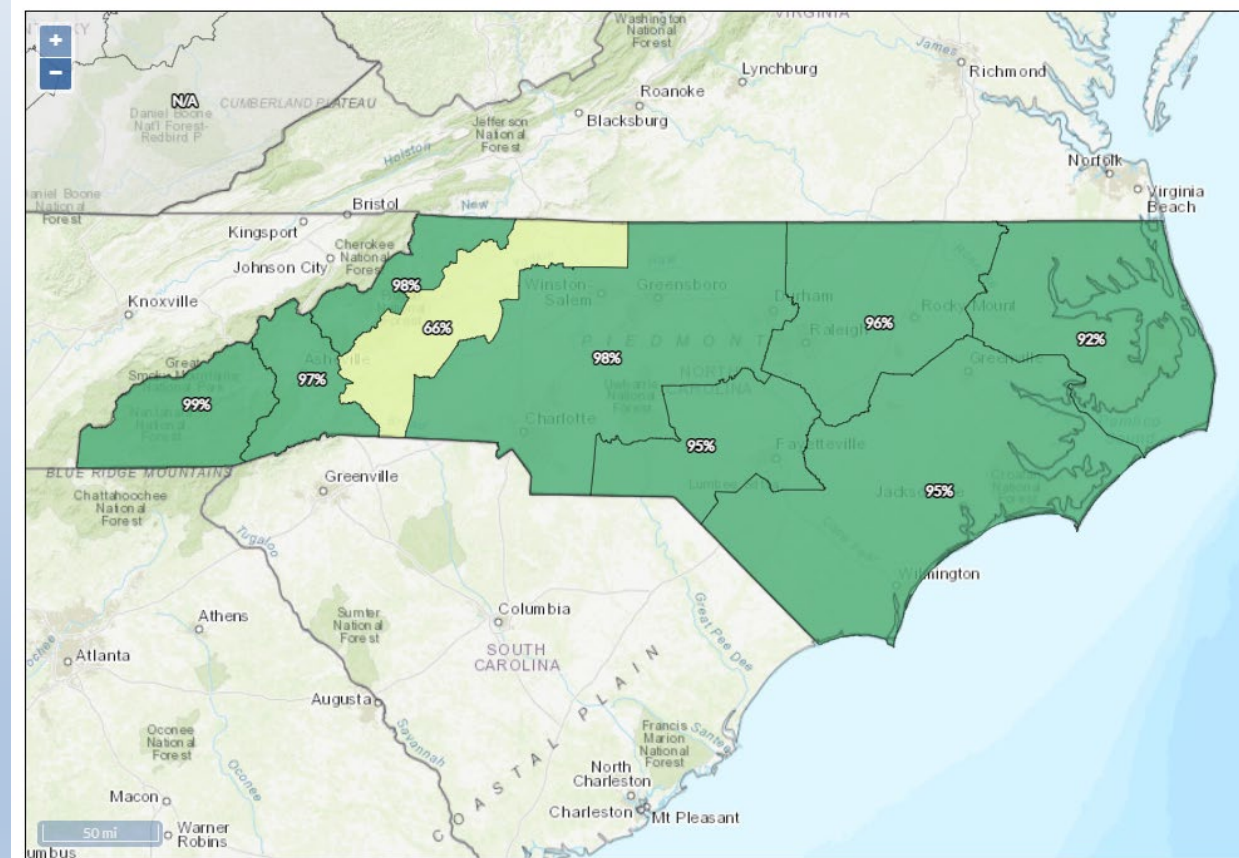
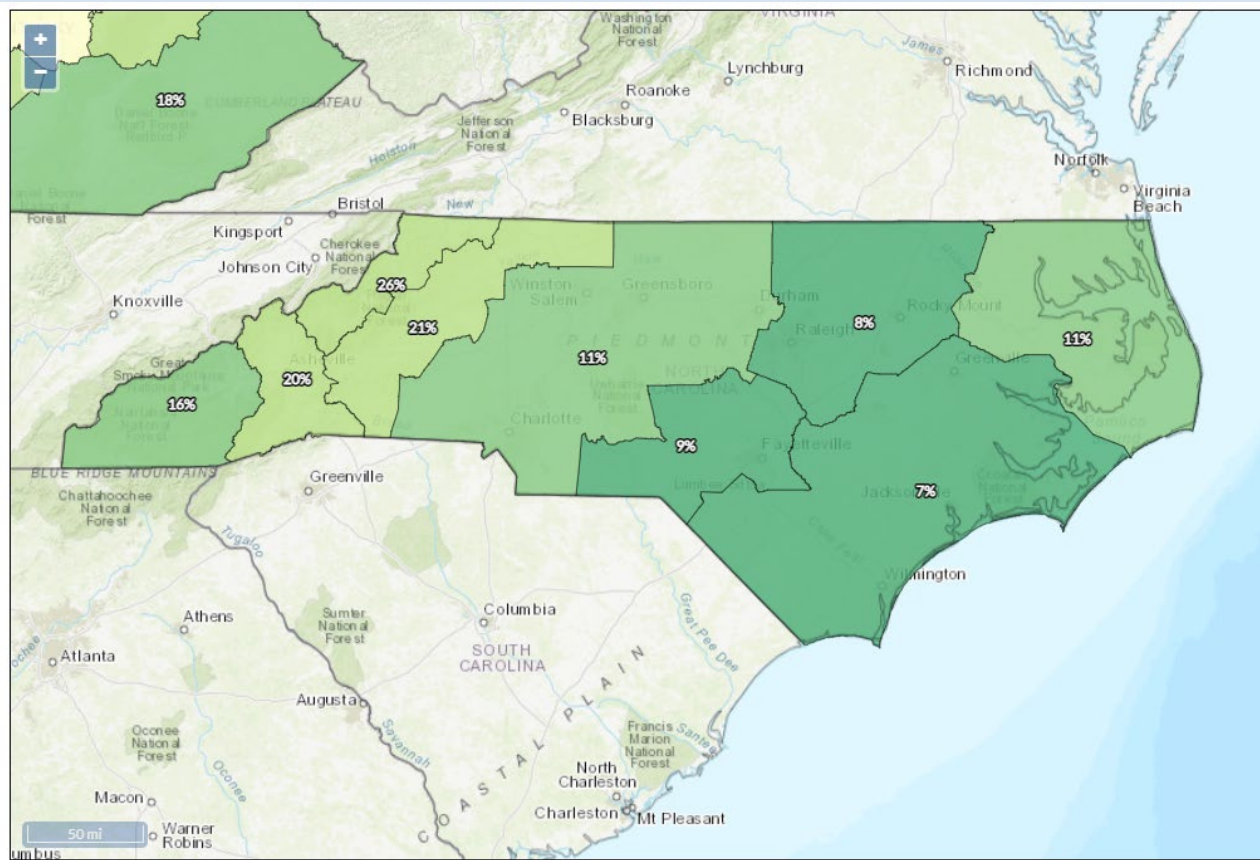


# Spring Fire Outlook



ERC Percentile Forecast for 2/1  
By FDRA (for all days)

1000-Hr Percentile Forecast for 2/1  
By FDRA (for all days)



POINT DATA Forecasted ERC Pctl. (%)  
For today (Feb 1) at 1 pm

POINT DATA Forecasted 1000-Hr. FM Pctl. (%)  
For today (Feb 1) at 1 pm

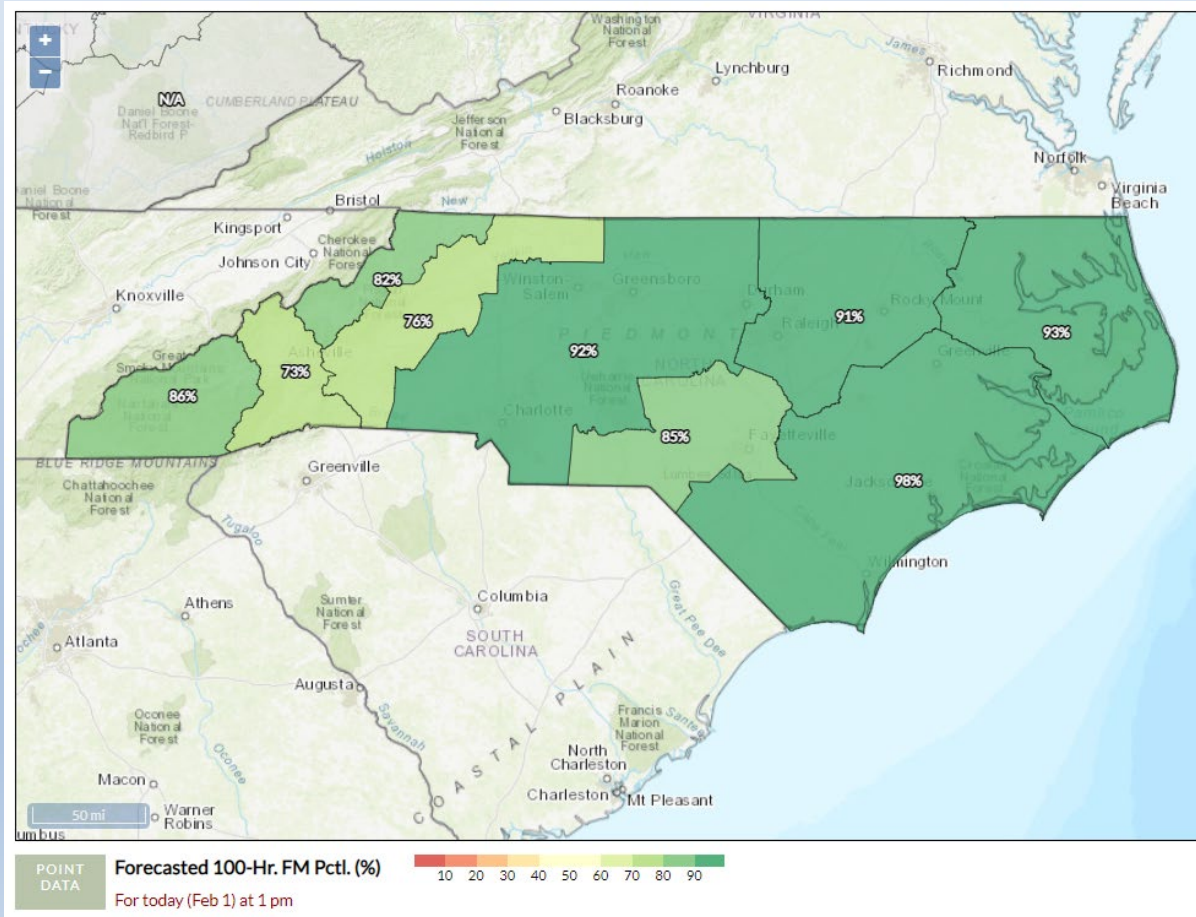




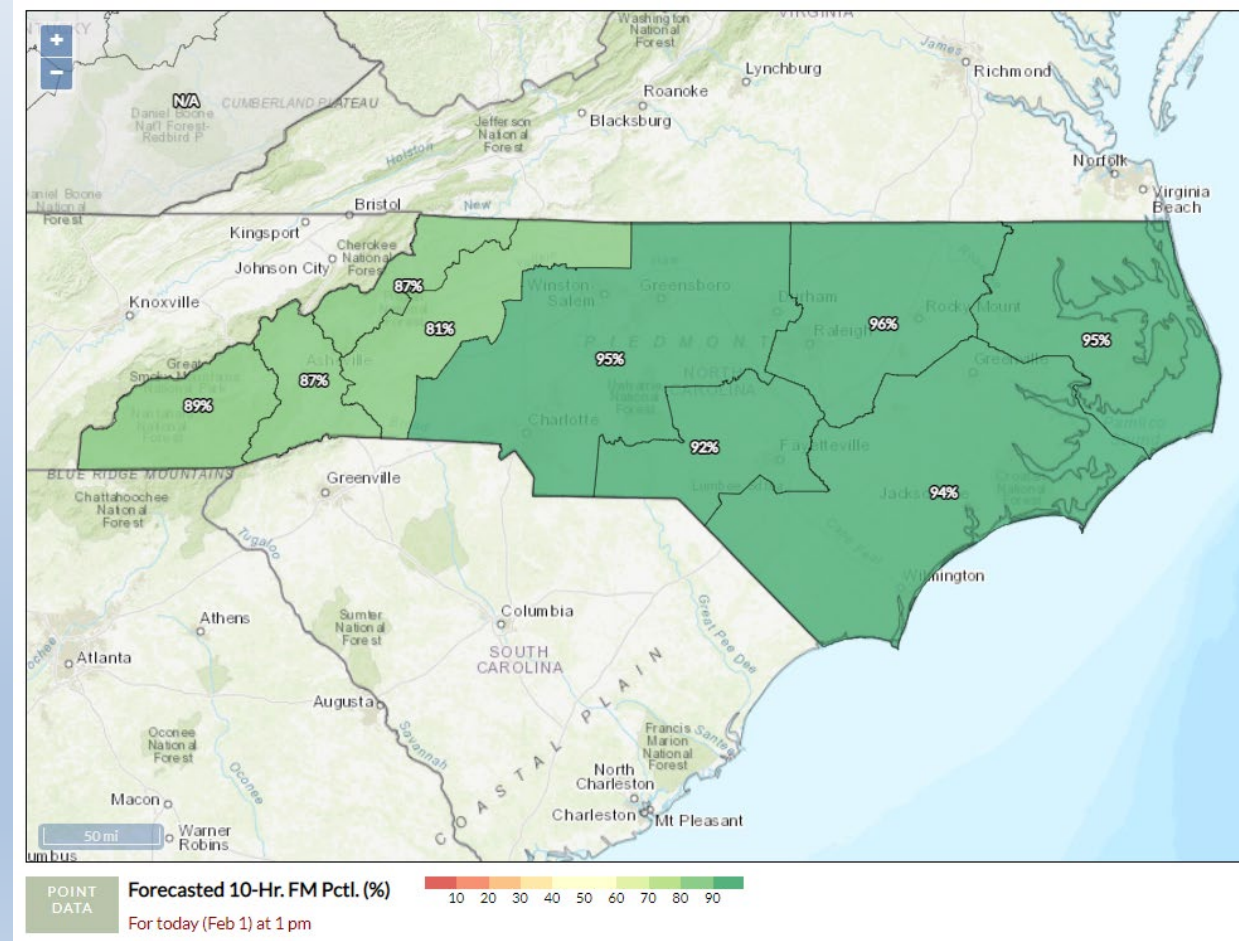
# Spring Fire Outlook



100-Hr Percentile Forecast for 2/1  
By FDRA (for all days)



10-Hr Percentile Forecast for 2/1  
By FDRA (for all days)





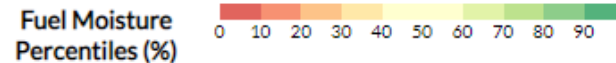
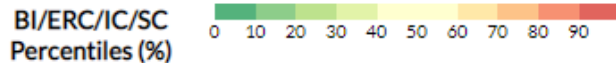


# Spring Fire Outlook

**FWIP EXAMPLE**

Observations on 1/17/23 – FWIP By Station

DIST	FDRA	WIMS_ID	STATION_NAME	NFDR_DATE	MSGC	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
9	S. Highlands	315803	Highlands	2023-01-17	16X2P	0.00	0.00	0.00	0.00	6.00	26.17	24.52	22.26	26.20	30.00	50.00	48°F	96%	NW 4 mph	0.20 in.	5
9	S. Highlands	315802	Locust Gap	2023-01-17	16X3P	0.00	0.00	0.00	0.00	3.00	34.95	28.43	22.56	25.91	30.00	50.00	54°F	86%	W 4 mph	0.57 in.	10
9	S. Highlands	315602	Tusquitee	2023-01-17	16X3P	0.00	0.00	0.00	0.00	2.00	34.96	27.44	23.14	25.96	30.00	50.00	52°F	97%	ENE 2 mph	0.49 in.	8
9	S. Highlands	315501	Cheoah	2023-01-17	16X3P	0.00	0.00	0.00	0.00	2.00	35.00	29.22	22.81	25.51	30.00	60.00	53°F	98%	Calm	0.27 in.	9
9	S. Highlands	313902	Cherokee	2023-01-17	16Y2P	0.00	0.00	0.00	0.00	0.00	35.00	30.90	21.17	24.49	30.00	60.00	48°F	100%	WNW 5 mph	0.58 in.	10
9	S. Highlands	313903	Cow Mountain	2023-01-17	16X3P	0.00	0.00	0.00	0.00	0.00	32.34	26.35	22.11	24.86	30.00	60.00	47°F	100%	Calm	0.61 in.	9
9	S. Highlands	314040	Frying Pan Mountain	2023-01-17	16X2P	0.00	0.00	0.00	0.00	3.00	30.58	26.98	20.13	23.74	30.00	60.00	46°F	96%	Calm	0.07 in.	4
9	S. Highlands	315902	Jackson County	2023-01-17	16X2P	0.00	0.00	0.00	0.00	0.00	34.51	24.15	20.85	24.55	30.00	60.00	46°F	100%	W 2 mph	0.33 in.	7
9	S. Highlands	314041	Mountain Research Station	2023-01-17	16X3P	12.70	2.90	0.00	7.80	2.00	22.95	23.98	20.53	23.82	30.00	60.00	54°F	79%	NE 4 mph	0.15 in.	6
9	S. Highlands	313904	Tow String	2023-01-17	16X3P	0.00	0.00	0.00	0.00	0.00	35.00	27.93	21.90	24.58	30.00	60.00	49°F	99%	Calm	0.53 in.	10
9	S. Highlands	315840	Wayah Bald Mountain	2023-01-17	16X3P	0.00	0.00	0.00	0.00	0.00	34.45	28.15	22.57	26.77	30.00	60.00	42°F	100%	W 8 mph	0.76 in.	9
DIST	FDRA	WIMS_ID	STATION_NAME	NFDR_DATE	MSGC	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
10	W. Piedmont	314602	Lexington	2023-01-17	16X1P	0.00	0.00	0.00	0.00	20.00	34.89	20.08	18.81	24.73	30.00	50.00	49°F	90%	WSW 4 mph	0.05 in.	4
10	W. Piedmont	312342	NC A&T SU Research Farm	2023-01-17	16X1P	0.00	0.00	0.00	0.00	6.00	34.84	18.73	19.11	24.06	30.00	50.00	48°F	87%	SW 4 mph	0.05 in.	3
10	W. Piedmont	314541	Piedmont Research Station	2023-01-17	16X1P	0.00	0.00	0.00	0.00	9.00	34.80	17.72	19.61	24.75	30.00	50.00	48°F	89%	WSW 6 mph	0.03 in.	2
10	Blue Ridge	310302	Pilot Mountain	2023-01-17	16X1P	0.00	0.00	0.00	0.00	9.00	34.96	23.76	19.71	24.53	30.00	60.00	43°F	97%	SW 3 mph	0.13 in.	6
10	Blue Ridge	310301	Raven Knob (surry Cty)	2023-01-17	16X2P	0.00	0.00	0.00	0.00	9.00	34.30	21.33	20.38	24.87	30.00	60.00	45°F	100%	Calm	0.04 in.	4
10	W. Piedmont	310540	Upper Piedmont Research Stn	2023-01-17	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	44°F	87%	W 4 mph	0.14 in.	6
DIST	FDRA	WIMS_ID	STATION_NAME	NFDR_DATE	MSGC	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
11	W. Piedmont	312501	Duke Forest	2023-01-17	16X1P	0.00	0.00	0.00	0.00	33.00	34.89	17.40	18.89	24.63	30.00	50.00	48°F	91%	SW 4 mph	0.05 in.	4
11	E. Piedmont	314941	Lake Wheeler Rd Field Lab	2023-01-17	16X1P	0.00	0.00	0.00	0.00	13.00	34.93	15.49	18.79	23.98	30.00	60.00	48°F	82%	SW 8 mph	0.04 in.	3
11	E. Piedmont	310841	Oxford Tobacco Research Stn	2023-01-17	16X1P	0.00	0.00	0.00	0.00	7.00	33.03	17.59	19.18	23.87	30.00	60.00	45°F	88%	SW 6 mph	0.11 in.	4
11	W. Piedmont	310801	Caswell Game Lands	2023-01-17	16X1P	0.00	0.00	0.00	0.00	10.00	34.80	18.92	19.18	24.12	30.00	50.00	46°F	95%	SSW 2 mph	0.10 in.	4
11	W. Piedmont	312640	North Durham Water Reclamation...	2023-01-17	16X1P	0.00	0.00	0.00	0.00	20.00	33.02	15.39	19.48	24.58	30.00	50.00	47°F	86%	SW 3 mph	0.06 in.	2
11	E. Piedmont	314942	Reedy Creek Field Laboratory	2023-01-17	16X1P	0.00	0.00	0.00	0.00	18.00	34.99	16.70	18.73	24.64	30.00	60.00	49°F	78%	WSW 2 mph	0.04 in.	3
DIST	FDRA	WIMS_ID	STATION_NAME	NFDR_DATE	MSGC	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
12	W. Piedmont	316602	Mt. Island Lake	2023-01-17	16X1P	0.00	0.00	0.00	0.00	14.00	31.96	16.05	19.40	25.41	30.00	50.00	48°F	99%	SW 3 mph	0.07 in.	2
12	Blue Ridge	316302	Rutherford County	2023-01-17	16X2P	2.10	1.70	0.00	0.30	12.00	24.92	21.64	18.15	21.76	30.00	50.00	49°F	91%	Calm	0.02 in.	2
12	Blue Ridge	316341	Spindale Tower	2023-01-17	16X1P	0.00	0.00	0.00	0.00	10.00	28.32	17.14	17.84	24.08	30.00	60.00	47°F	95%	W 5 mph	0.02 in.	2
DIST	FDRA	WIMS_ID	STATION_NAME	NFDR_DATE	MSGC	BI	ERC	IC	SC	KBDI	1HR	10HR	100HR	1000HR	HRB	WOODY	TEMP	RH	WIND	PRECIP	DUR
13	North Coast	317901	Fairfield	2023-01-17	16X0P	52.70	37.80	3.50	13.30	209.00	13.12	14.97	19.84	23.61	50.00	90.00	55°F	52%	SW 3 mph	0.00 in.	0
13	North Coast	315201	Pocosin Lakes	2023-01-17	16X0P	57.70	45.50	5.10	13.50	146.00	11.45	12.96	19.07	23.69	50.00	90.00	54°F	50%	SW 3 mph	0.00 in.	0
13	North Coast	315407	Buxton	2023-01-17	16X0P	119.10	52.20	7.90	56.90	172.00	12.91	14.34	18.94	21.77	30.00	50.00	59°F	59%	SW 8 mph	0.00 in.	0
13	North Coast	315406	Dare Bomb Range (fr2)	2023-01-17	16X1P	122.50	45.60	12.70	69.30	193.00	11.13	14.93	19.90	23.76	50.00	90.00	57°F	43%	SW 11 mph	0.00 in.	0
13	North Coast	315409	Jockey's Ridge State Park	2023-01-17	16X1P	92.50	41.40	4.60	41.40	121.00	14.25	14.80	19.22	22.18	30.00	60.00	54°F	54%	WSW 5 mph	0.00 in.	0
13	North Coast	315240	Tidewater Research Station	2023-01-17	16X1P	106.00	39.40	8.30	58.50	41.00	12.57	13.41	19.35	24.26	50.00	90.00	54°F	53%	SW 12 mph	0.00 in.	0



<https://products.climate.ncsu.edu/fwip/nfdrs.php?data=ob>



# Spring Fire Outlook

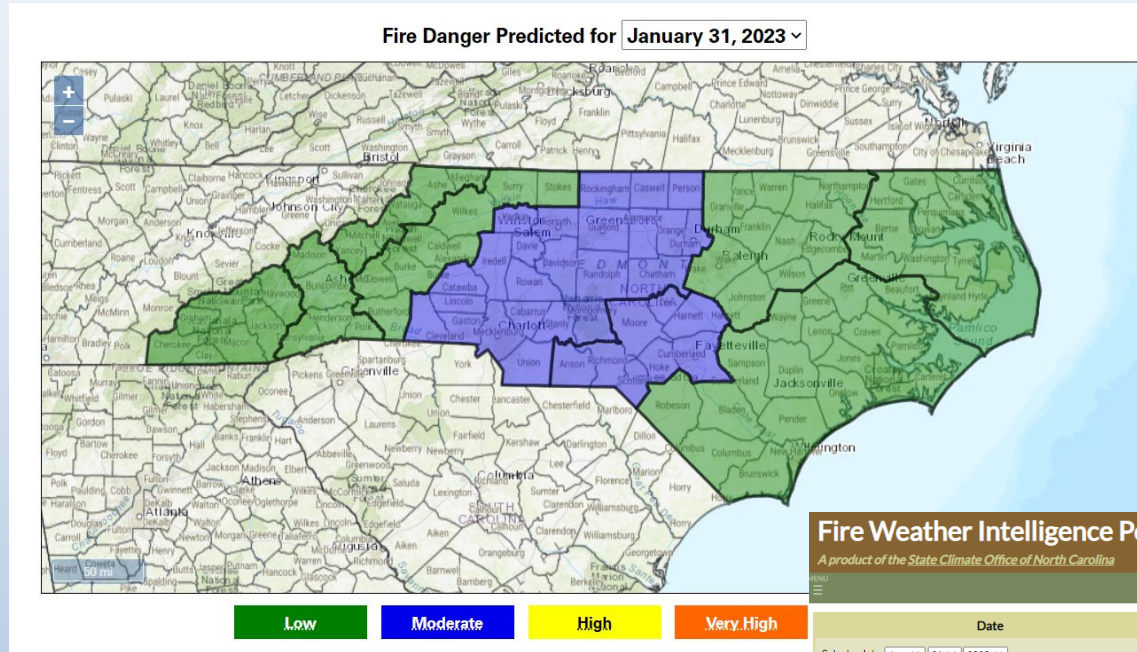


Adjective Rating Map

Smokey Signs, Public Facing

(Uses ERC + 100hr Matrix)

[https://climate.ncsu.edu/fwip/nc\\_danger/](https://climate.ncsu.edu/fwip/nc_danger/)



Low Moderate High Very High

Hazard Level – relevant to NCFS manning and Daily Hazard

(Uses BI + 100hr Matrix)

<https://products.climate.ncsu.edu/fwip/hazard.php>

### Fire Weather Intelligence Portal

A product of the State Climate Office of North Carolina

#### Hazard Assessment Tool

Date: Select a date: Jan 31 2023  
 Note: This tool will use forecasted NFDRS values for this date

Location: Select a county: [dropdown] | Select an FDRA: Southern Coastal [dropdown]

Submit

For the Southern Coastal FDRA on January 31, 2023  
 Includes Beaufort, Bladen, Brunswick, Carteret, Columbus, Craven, Duplin, Greene, Jones, Lenoir, New Hanover, Onslow, Pamlico, Pender, PI

Hazard/Staffing Level: **1**

Past 10-day average level: **1.8**

Using NFDRSv4	100-hr FM (Fuel Model X)	100-hr FM (Fuel Model X)				
		0-8	8-16	16-17	17-19	19+
BI (Fuel Model X)	110+	5	5	4	4	3
	90-110	5	5	4	4	3
	65-90	4	4	3	3	2
	35-65	3	3	2	2	2
	0-35	2	2	1	1	1

Data from stations in this region:

WIMS ID	Station Name	Forecasted 100-hr FM	Forecasted BI	Max 24-Hr. Precip. (Jan 17 to Jan 30)
317501	Finch's Station	23.66	10.9	0.97
317801	Beaufort	22.70	10.8	1.28
319004	New Bern	21.78	18.7	2.07
319302	Turnbull Creek	24.12	8.7	2.51
319507	Hofmann Forest	22.93	18.8	1.57
319701	Whiteville	24.27	5.9	1.45
319803	Sunny Point	24.81	6.6	2.77
<b>Average</b>		<b>23.47</b>	<b>11.5</b>	<b>1.80</b>

Page took 0.36 seconds to load.



# Spring Fire Outlook



# Looking Ahead



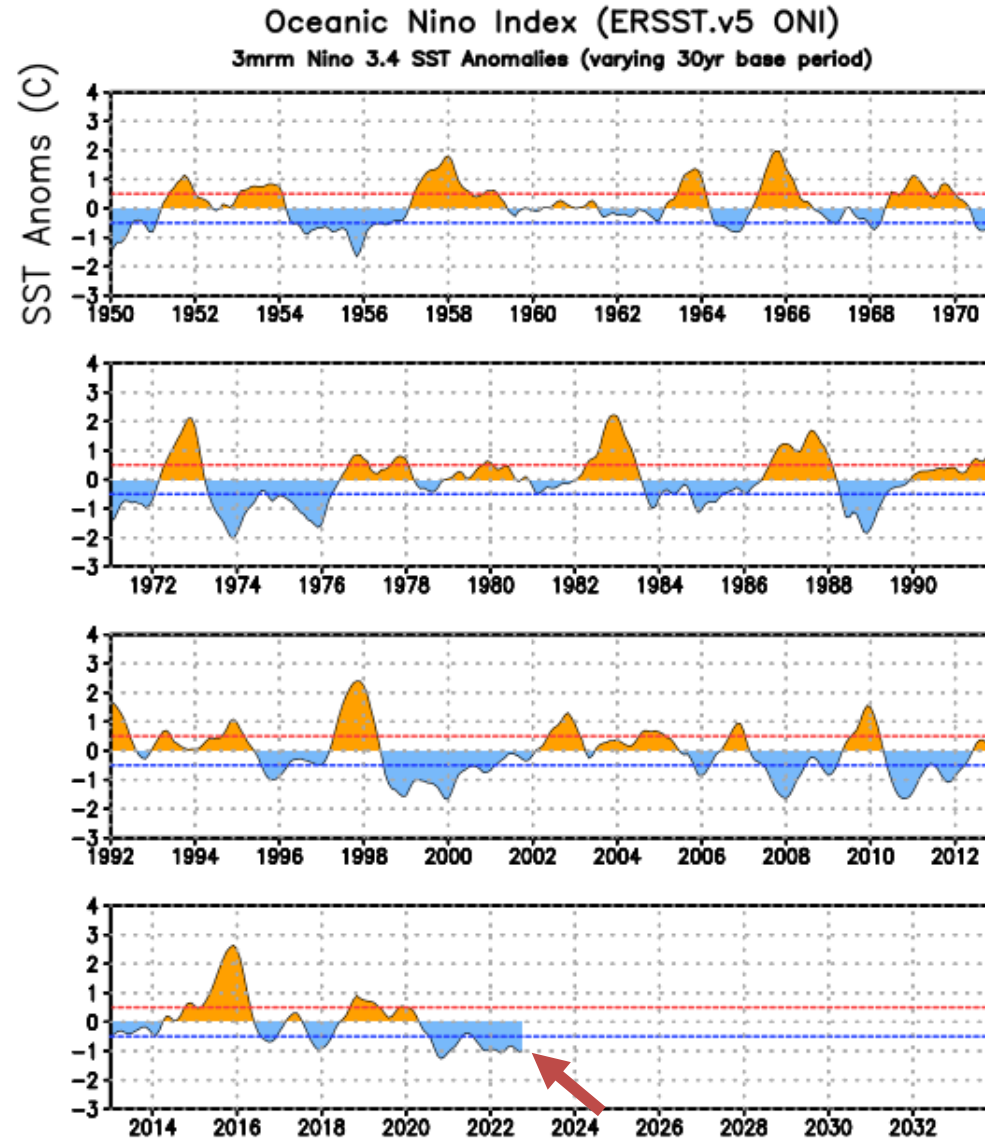


# Spring Fire Outlook



ENSO is currently in Moderate La Nina, and likely to transition into Neutral and possibly El Nino into the Fall.

Much uncertainty going into April/May and associated weather lag.



El Niño ↑  
Neutral  
La Niña ↓



# Spring Fire Outlook

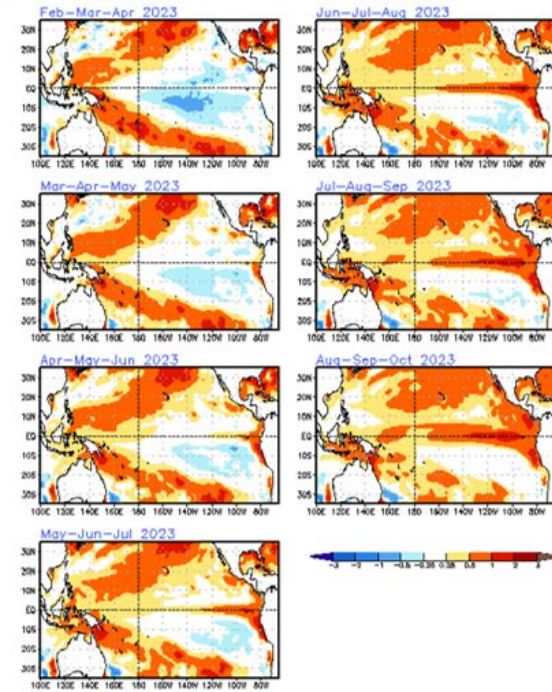
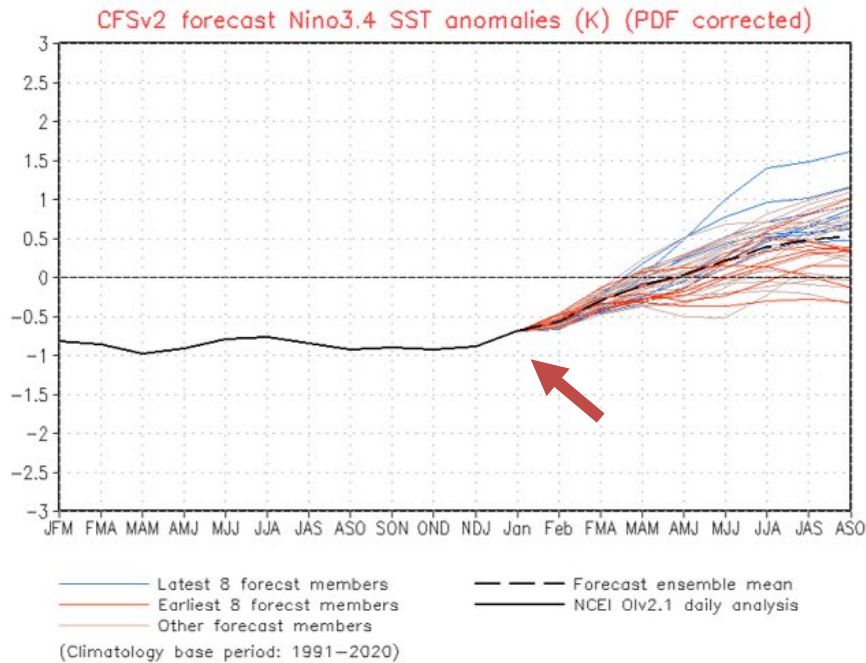


## SST Outlook: NCEP CFS.v2 Forecast (PDF corrected)

Issued: 30 January 2023

The CFS.v2 ensemble mean (black dashed line) indicates La Niña is expected to transition to ENSO-neutral by February-April 2023.

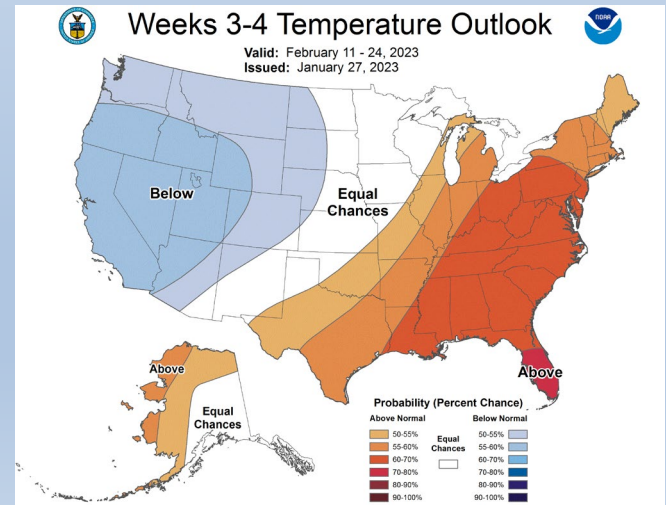
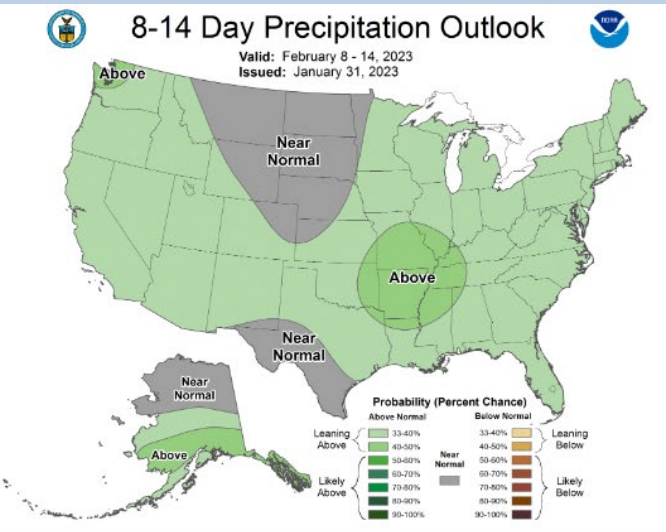
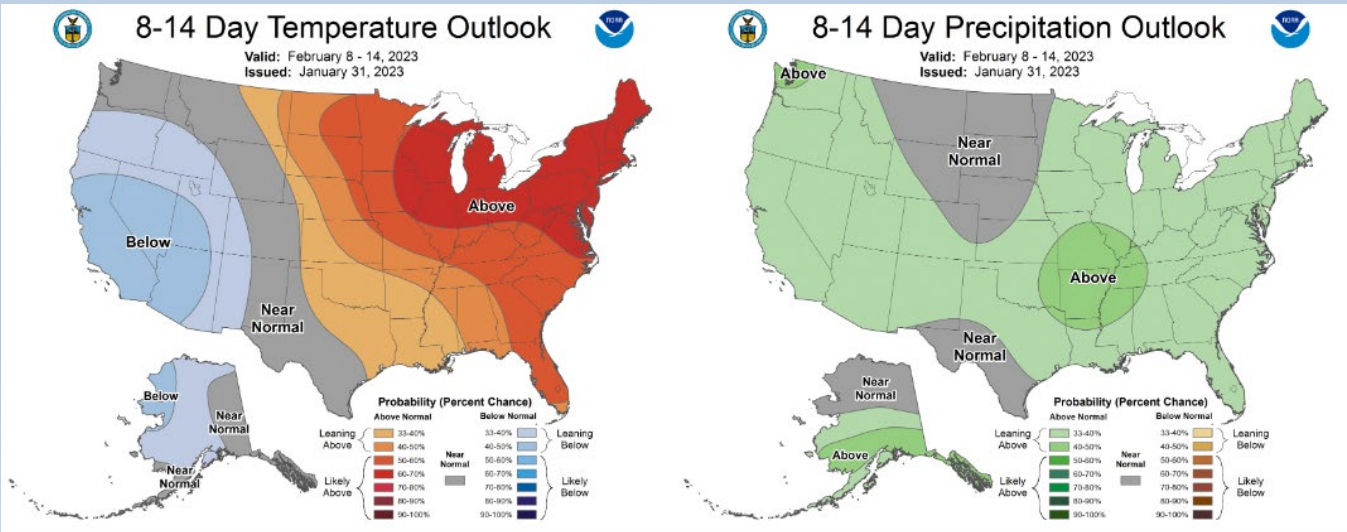
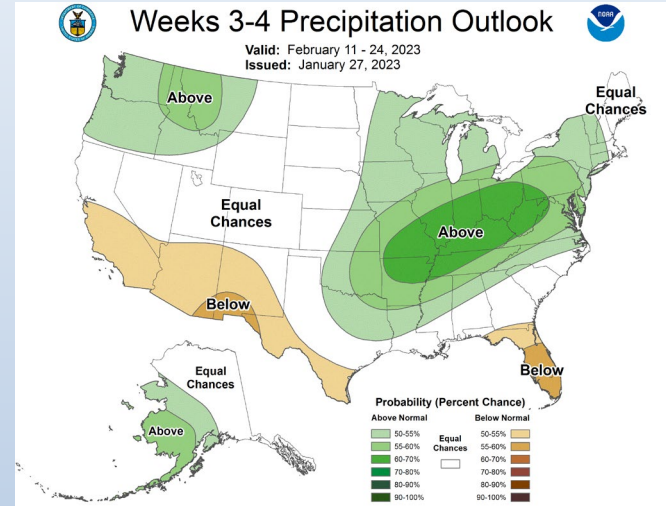
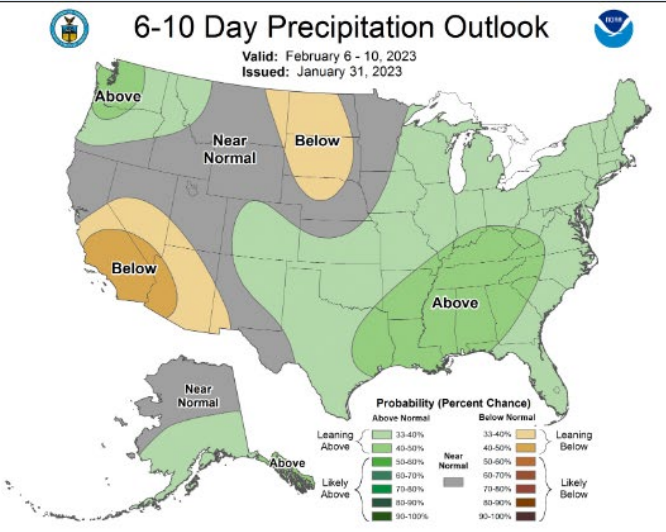
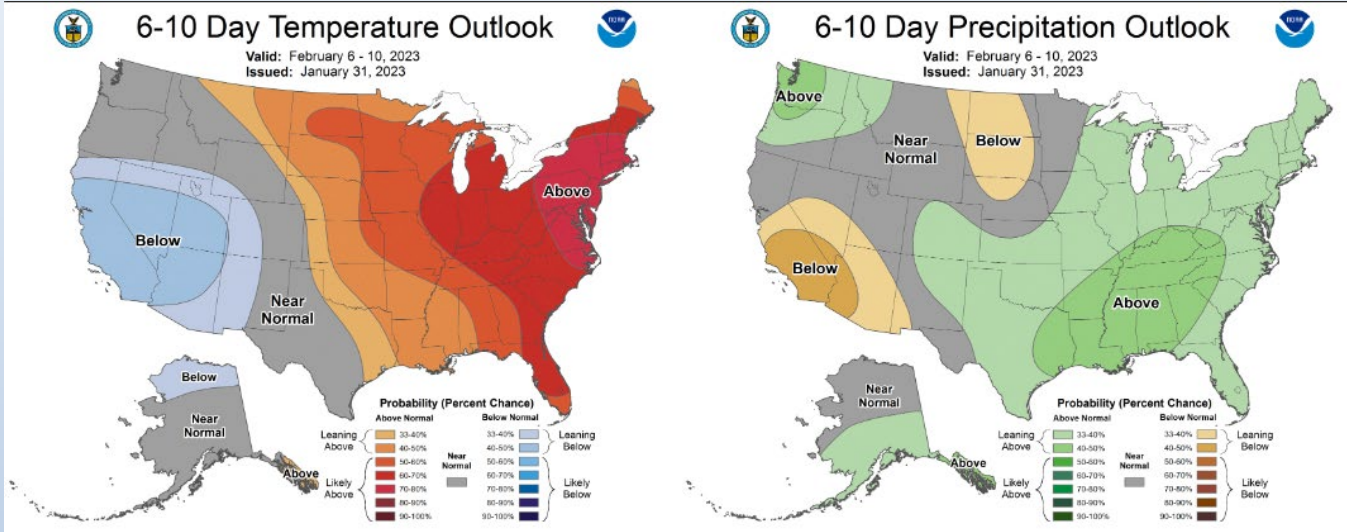
82% chance of ENSO-Neutral Conditions developing for Mar-May period.







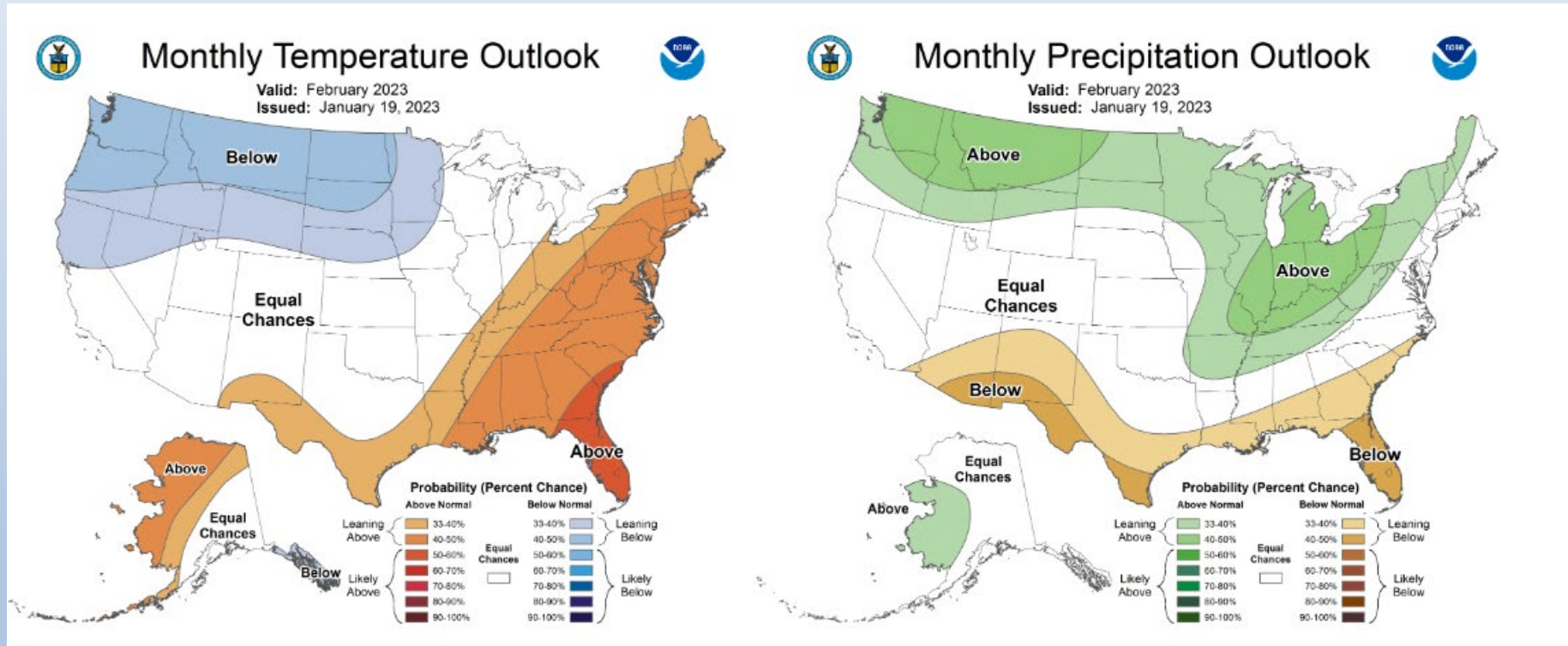
# Spring Fire Outlook







# Spring Fire Outlook



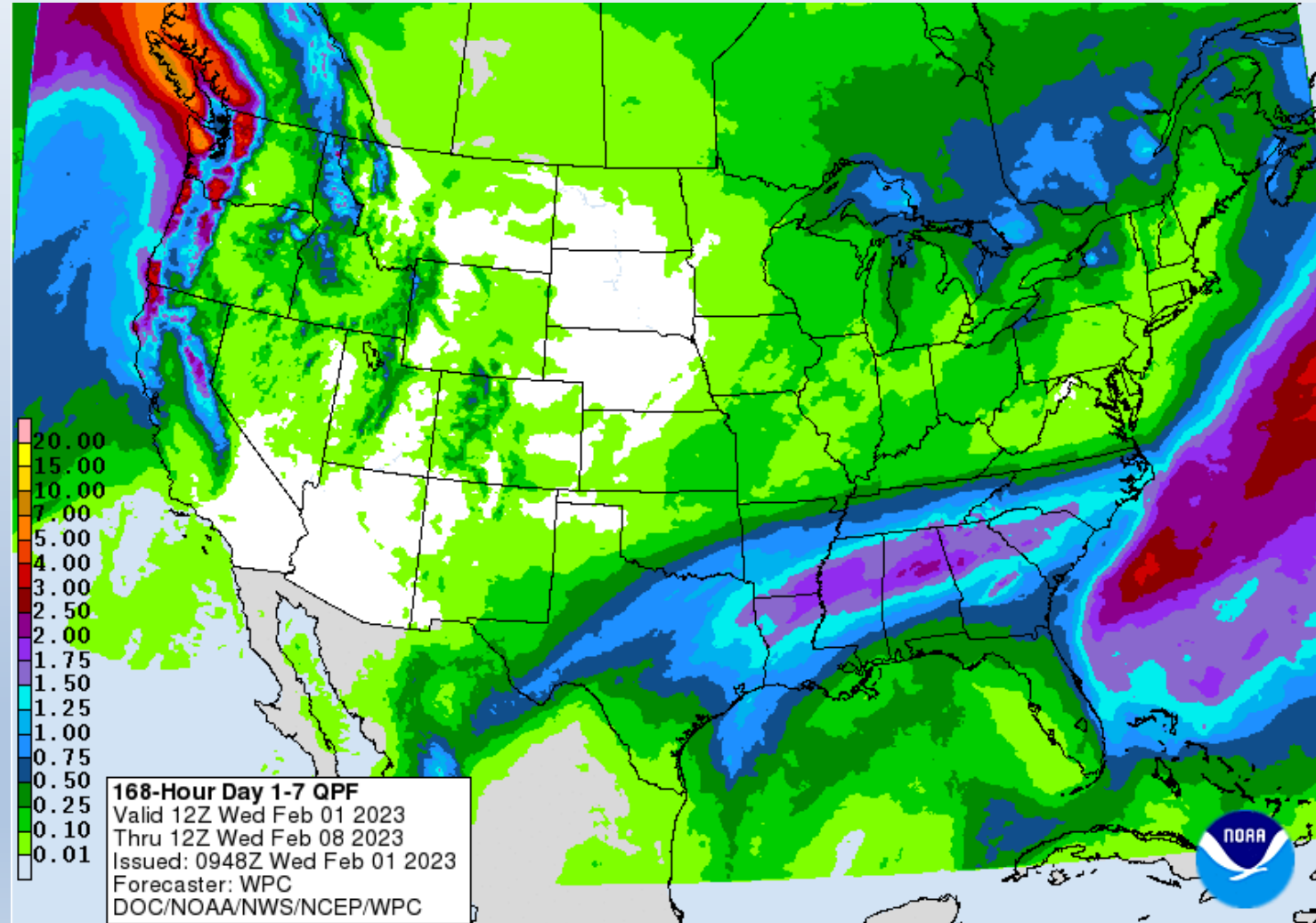


# Spring Fire Outlook



Three Events in the upcoming Period for  $\frac{1}{2}$  - 1" + rain across much of the state.

Models/Trends still indicate a shift back from unsettled pattern to more typical La Nina (Warmer & Drier) Later in Feb.

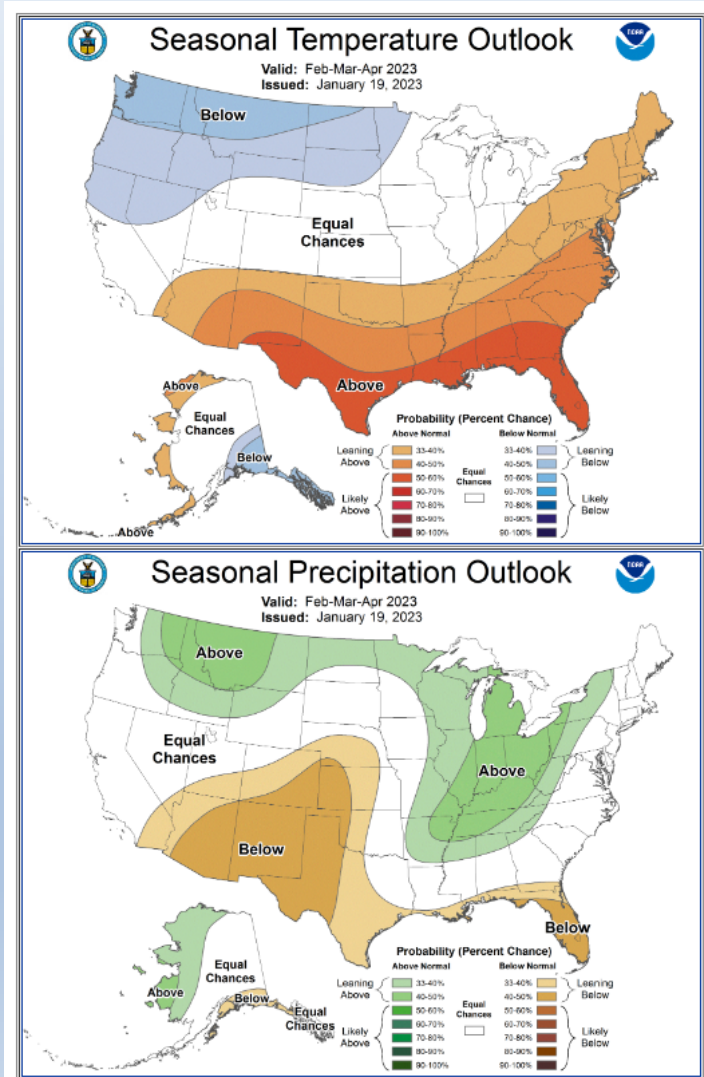




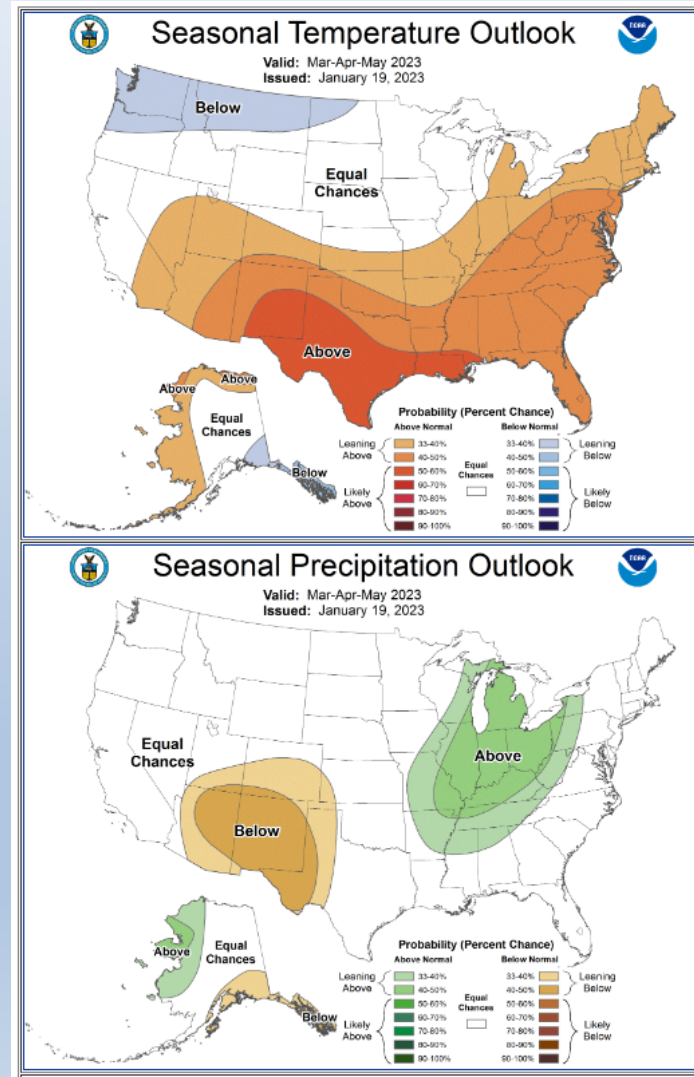
# Spring Fire Outlook



## Feb/Mar/Apr Outlook



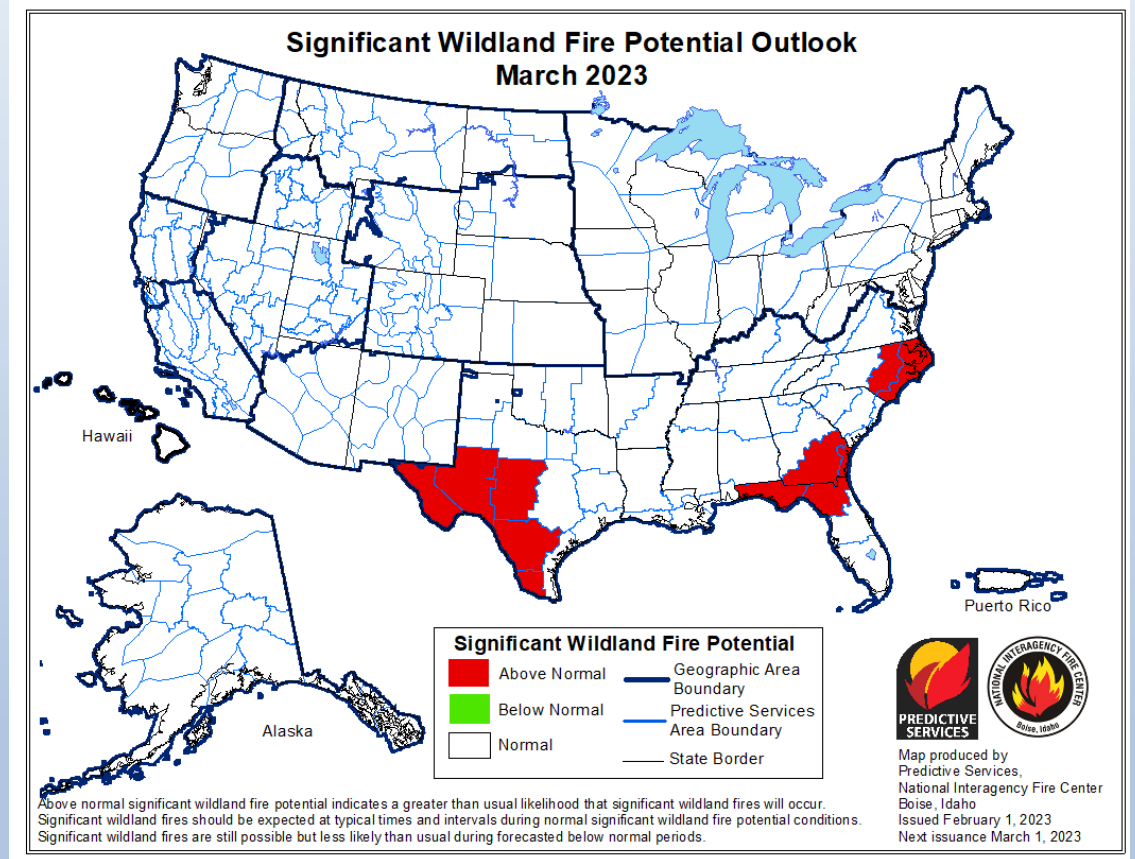
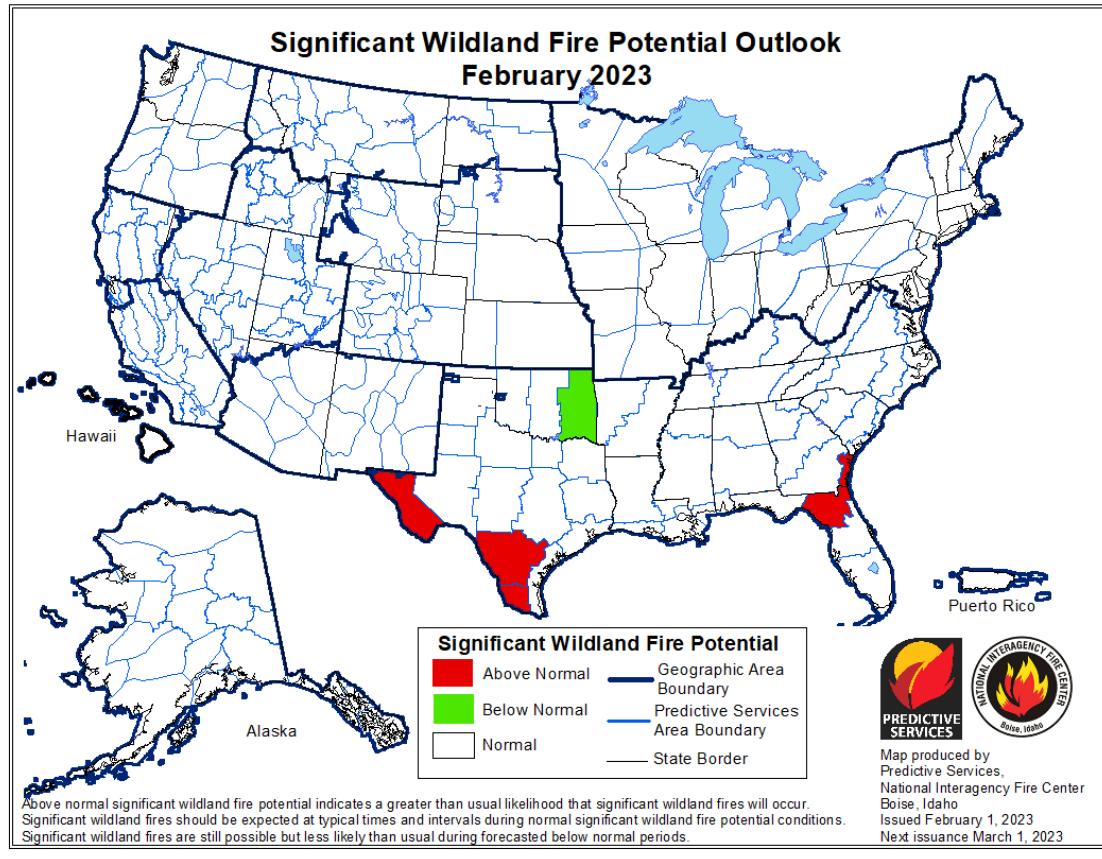
## Mar/Apr/May Outlook







# Spring Fire Outlook

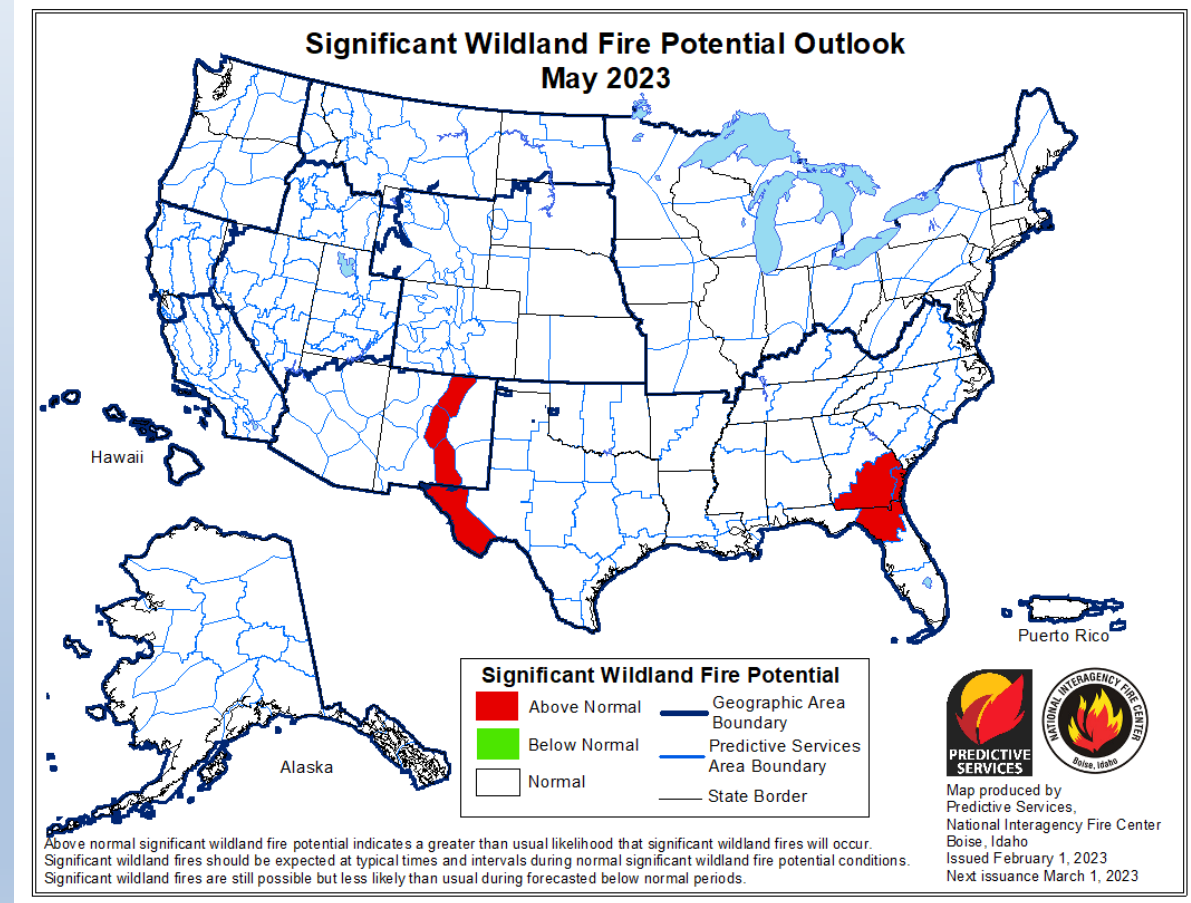
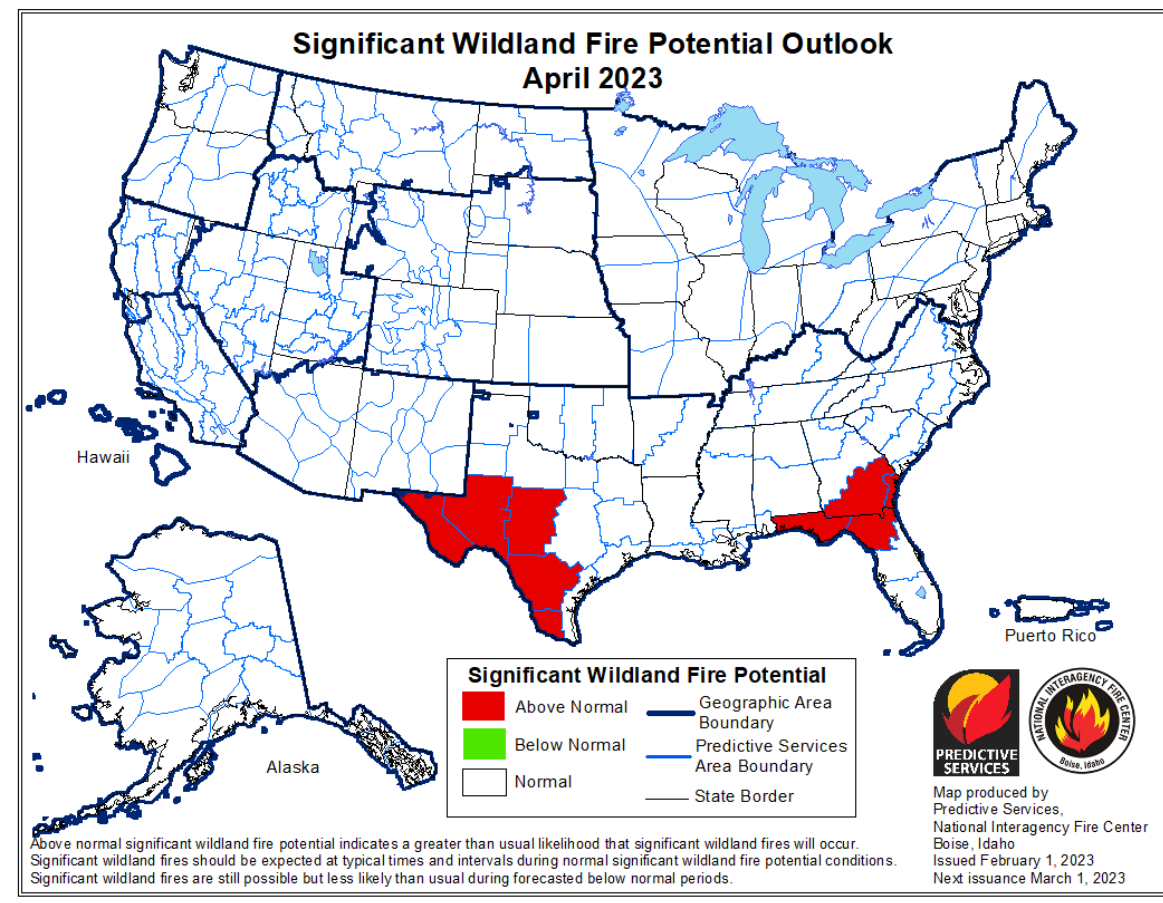


**Note: Significant fire potential is defined as the likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates.**

**New Outlook on 2/1 for Next 4-Month Cycle**



# Spring Fire Outlook



**Note: Significant fire potential is defined as the likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates.**

**New Outlook on 2/1 for Next 4-Month Cycle**



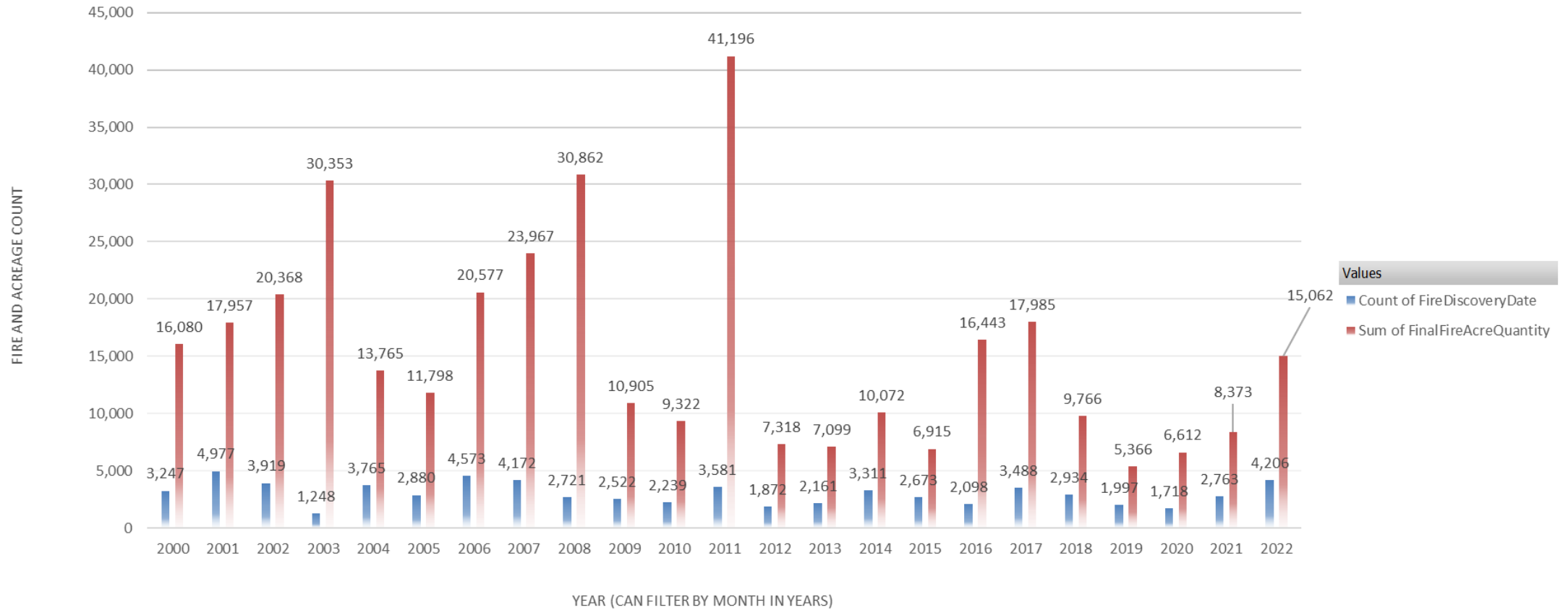


# Spring Fire Outlook

Month ▾

## STATEWIDE FIRE COUNTS & ACRES, 2000 - 2022 BY CY (FIRE LISTED BY REPORTED START DATE, THIS CAN BE FILTERED BY MONTH) JAN, FEB, MAR, APR, MAY ONLY

22-YR FARS Extract by  
Calendar Year (Approval  
Status = All; 2022  
Preliminary)



Year ▾

Extracted from FARS NASF Report. \*2022 Values are Preliminary

JAN - MAY



# Spring Fire Outlook



## Statewide Summary

- Currently in La Nina and forecast to transition to Neutral into Summer
- Warmer and drier is still favored to develop into Spring 23'
- A warmer February likely - speed bud break?
- Still chances for cold outbreaks, impacts to green-up?
- January - Normal Activity Was Favored
  - Weather Bumps created periods of busy IA
- **February** - \*Normal\* Activity Now Favored Statewide (See Significant WF Potential Outlook Slides)
- March - Above Normal Activity Favored East (See Significant WF Potential Outlook Slides)
  - Timing of green-up and drying will determine fire danger into Feb and March.
  - Unsettled Pattern Favored to End Mid February – trending warmer/dry more typical of La Nina
- April, May, June - Too early to tell based on expert discussion
- Pattern of heaviest moisture events may continue to track west, favoring Ohio River Valley
- D0-D1 Drought, Expansion (Category/Extent) still likely as we warm up & move into Spring
- Seasonal Drought Outlook Map Signals are Still Mixed
- Recent Soaking Rains have Helped Short-term





# Spring Fire Outlook



Comments/Questions?

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