Weather Forecast Office
Detroit, MI

2023 Summer Outlook for Southeast Michigan

90 Day Outlook Valid June 1 to August 31, 2023

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2023 Summer Outlook for Southeast Michigan

ENSO Outlook

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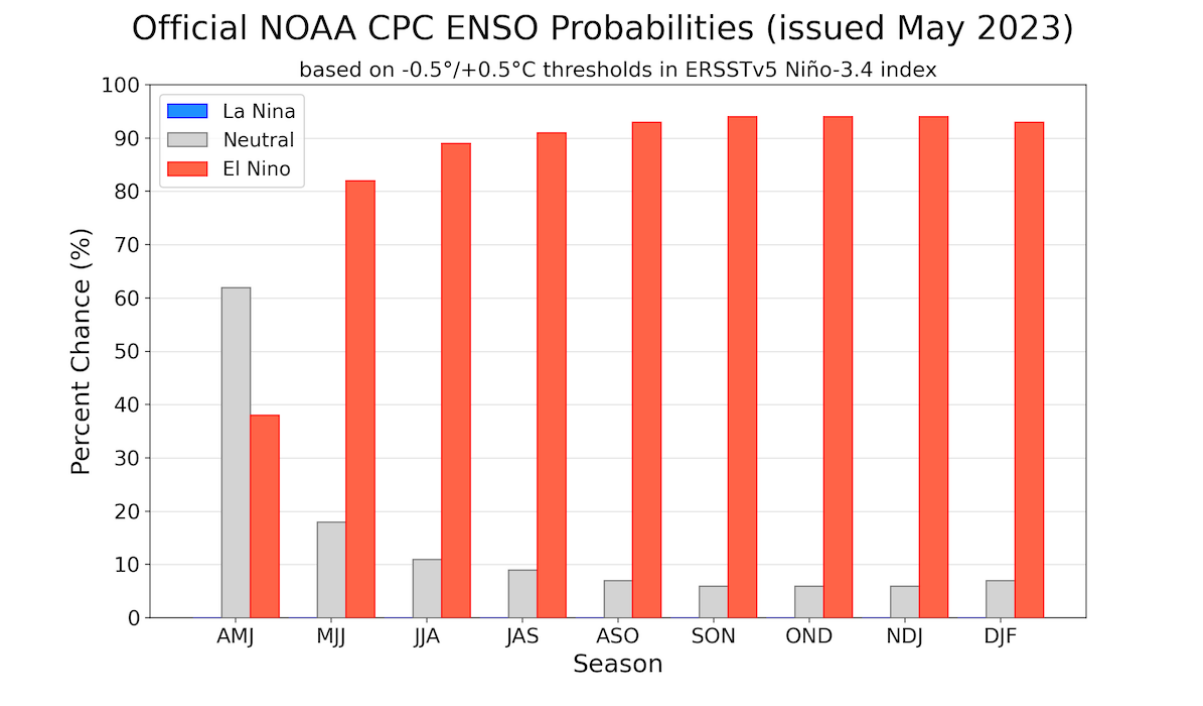
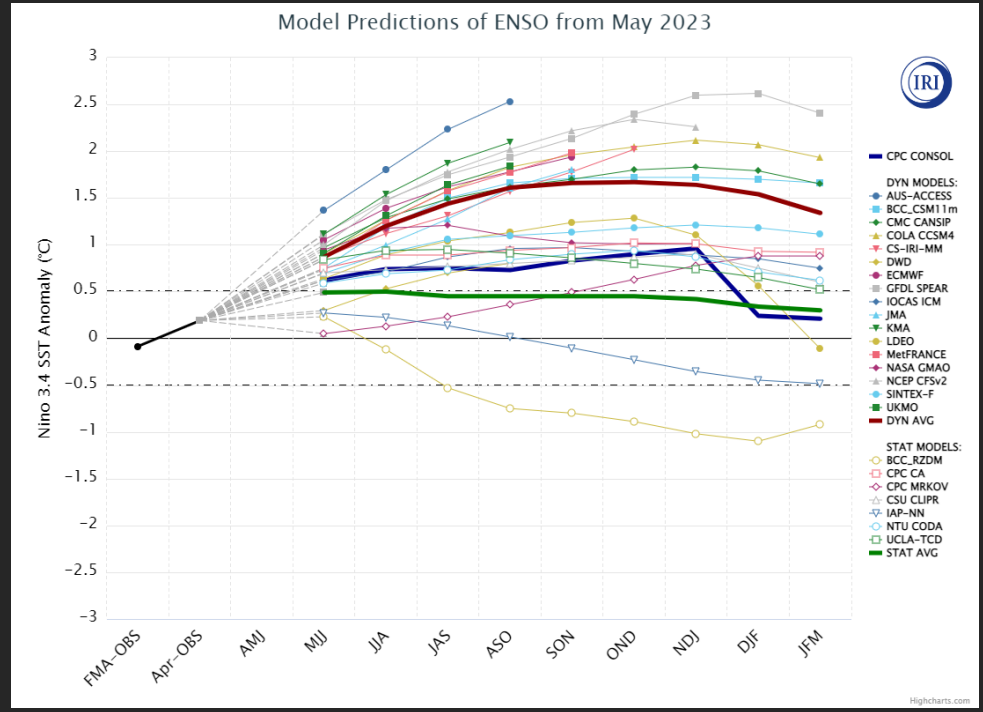
CPC/IRI Probabilistic ENSO Forecast



https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

CPC/IRI ENSO Predictions Plume



https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

ENSO-neutral conditions exist as of May 11 and an El Niño watch is in effect. El Niño is expected to be declared in the next couple of months and is likely to persist into this fall and winter. Impacts of ENSO are typically less pronounced during the summer compared to the winter, but ENSO still provides a background influence for upper air patterns across the northern hemisphere.

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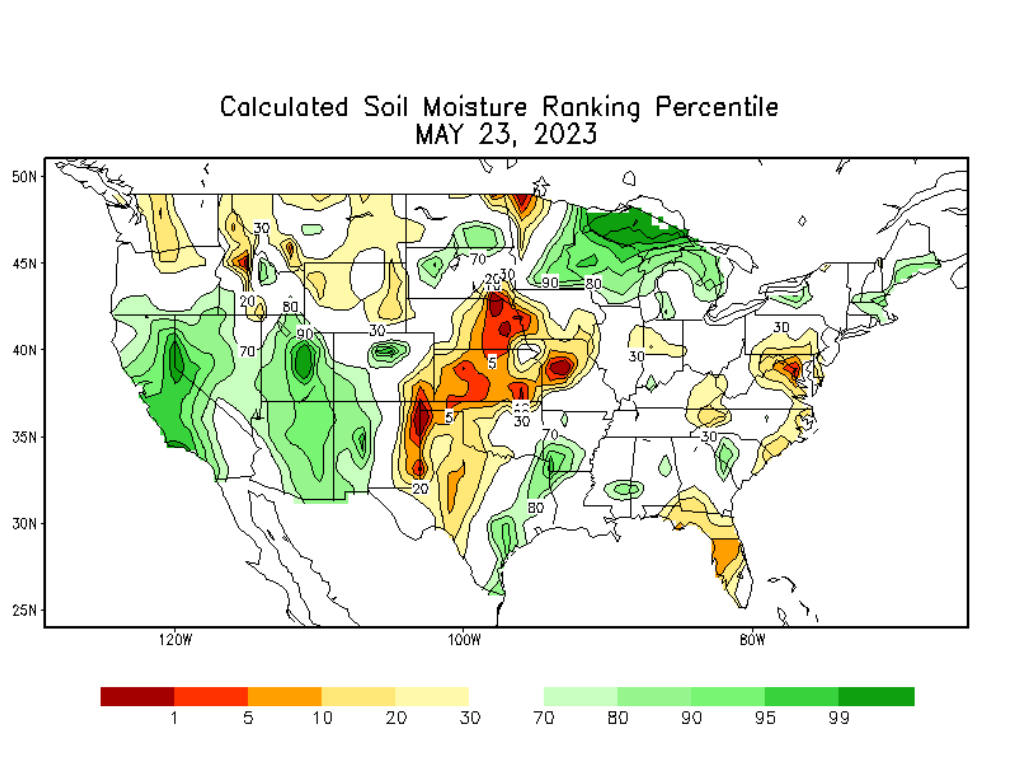
Recent Conditions

Soil Moisture



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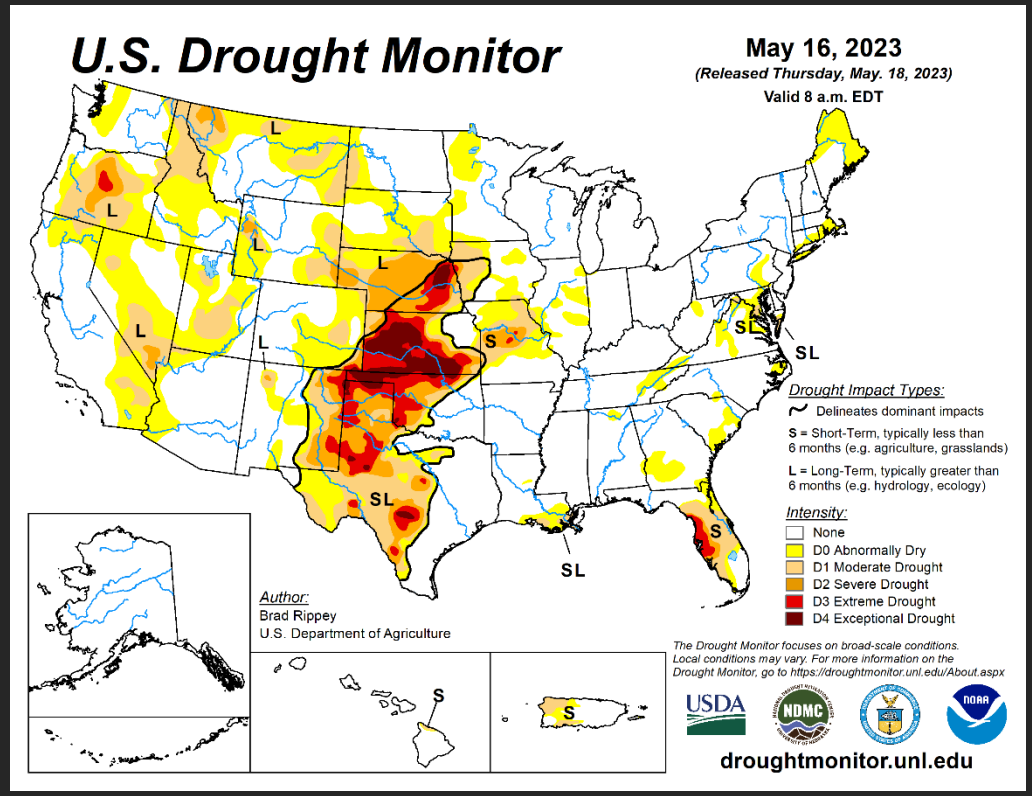
Drought



https://droughtmonitor.unl.edu/data/png/current/current_usdm.png

Despite a dry May (rainfall of only an inch or less), Southeast Michigan had a wet start to the year with rainfall totals since January 1 ranging from 1 to 4 inches above normal. Soil moisture is calculated to be near to above normal for the Great Lakes and drought is not evident across the area. Widespread severe to exceptional drought is observed across the central and southern Great Plains. Great Lakes water temperatures (not pictured) are near long-term averages for this time of year.

2023 Summer Outlook for Southeast Michigan

Climate Prediction Center Soil Moisture Analogs

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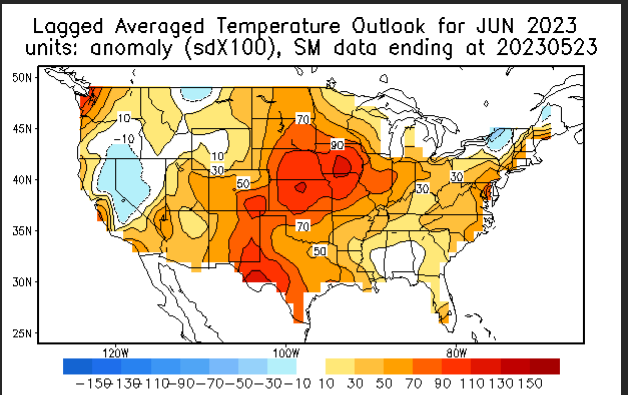
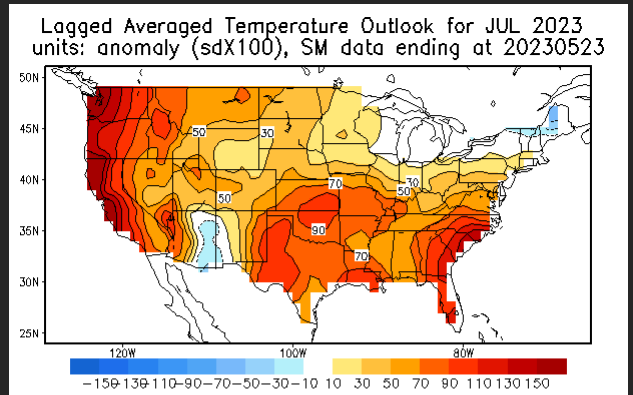
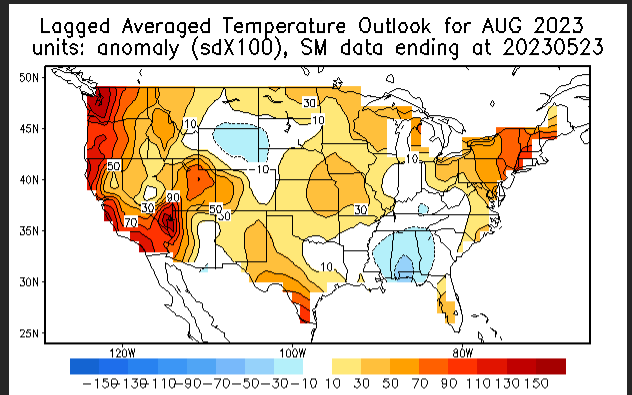
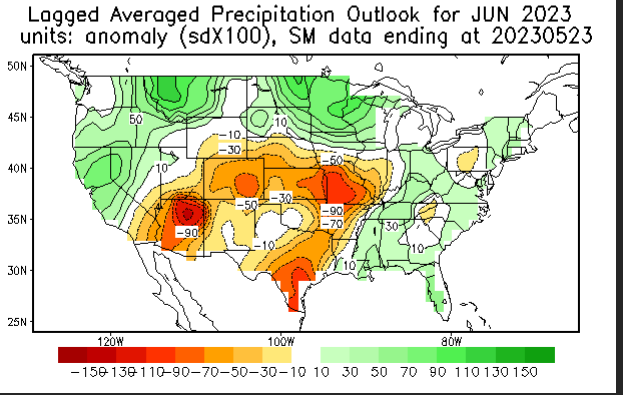
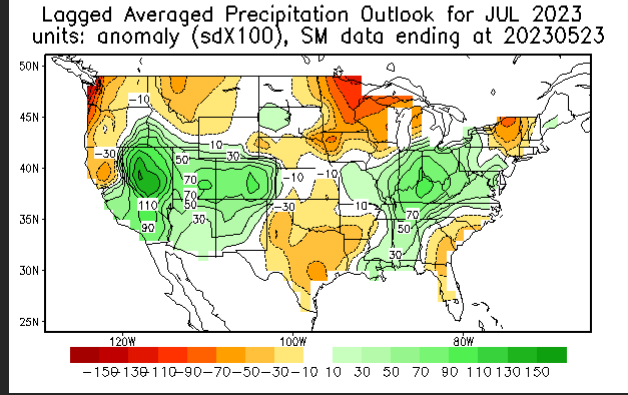
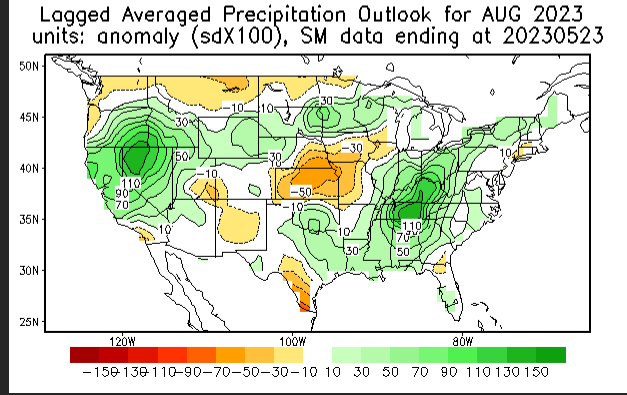
	June	July	August
Temperature			
Precipitation			
	https://www.cpc.ncep.noaa.gov/soilmst/img/cas_pt_mon.lead1.gif	https://www.cpc.ncep.noaa.gov/soilmst/img/cas_pt_mon.lead2.gif	https://www.cpc.ncep.noaa.gov/soilmst/img/cas_pt_mon.lead3.gif

Soil moisture and drought have predictive value leading into the summer, and CPC soil moisture analogs provide a depiction of how summers with similar antecedent conditions evolved. Analogs (above) with similar soil moisture conditions to this year generally showed warmer than normal conditions across the Great Lakes for June and August with less signal in either direction for July. The analogs generally showed wetter than normal conditions for the Ohio Valley and Southeast Michigan, though the northern extent of these conditions does carry some uncertainty.

2023 Summer Outlook for Southeast Michigan

Climate Model Output – North American Multi-Model Ensemble (NMME)

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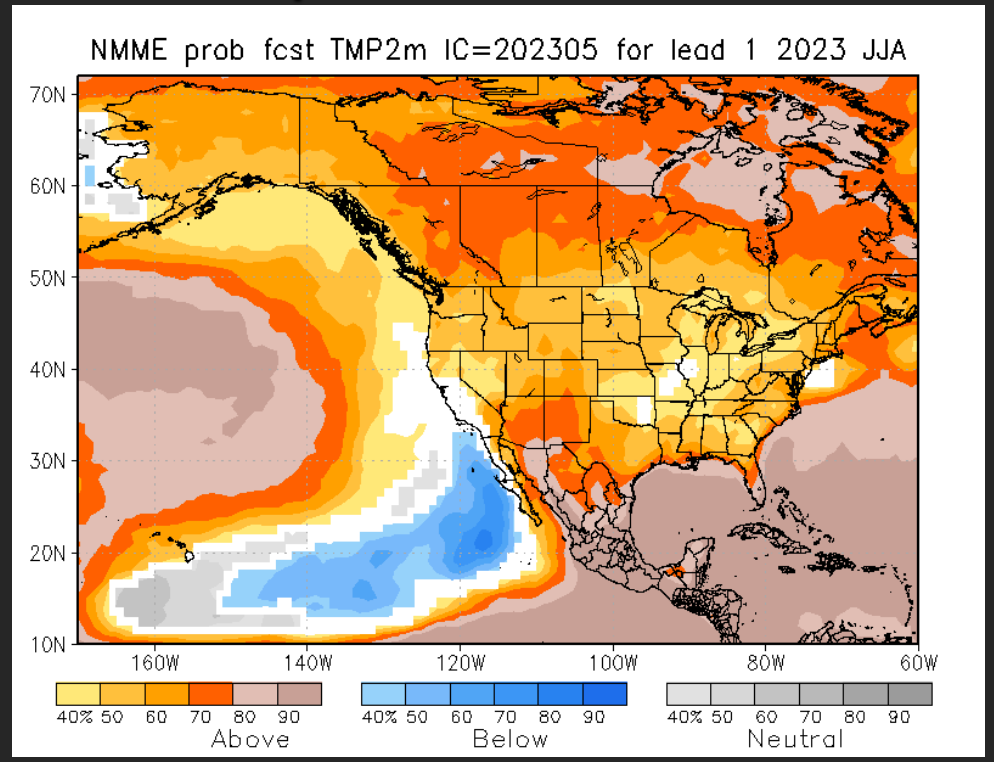
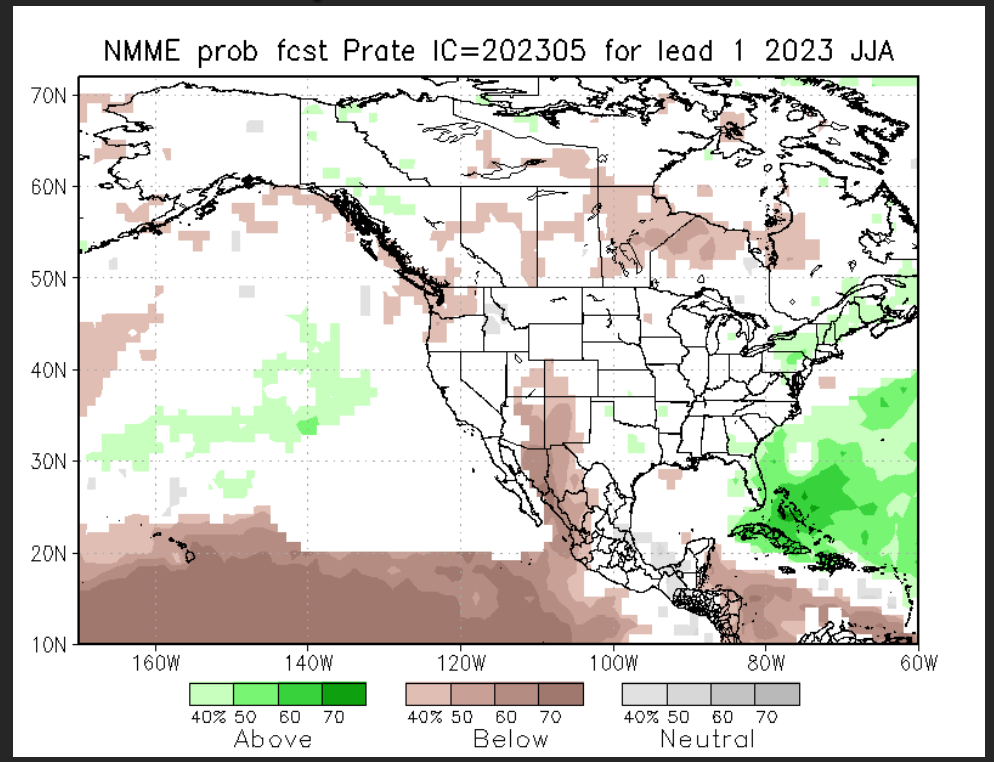
Summer 2023
Temperature Probabilities



https://www.cpc.ncep.noaa.gov/products/NMME/prob/images/prob_ensemble_tmp2m_us_season1.png

Summer 2023
Precipitation Probabilities



https://www.cpc.ncep.noaa.gov/products/NMME/prob/images/prob_ensemble_prate_us_season1.png

The NMME is the averaged output of several climate models and is another tool to guide seasonal-scale predictions. Recent output (above) favors warmer than normal temperatures for the local area this summer. Meanwhile, near to above normal precipitation is favored. Temperature output from the NMME generally has higher skill than that for precipitation for this period.

2023 Summer Outlook for Southeast Michigan

Trends in Recent Summers

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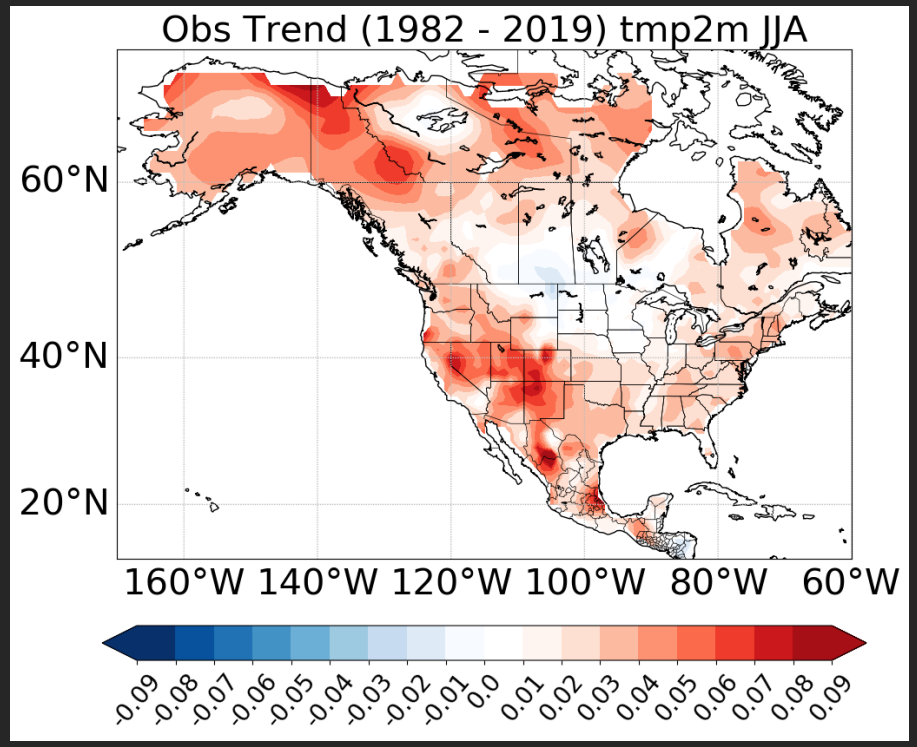
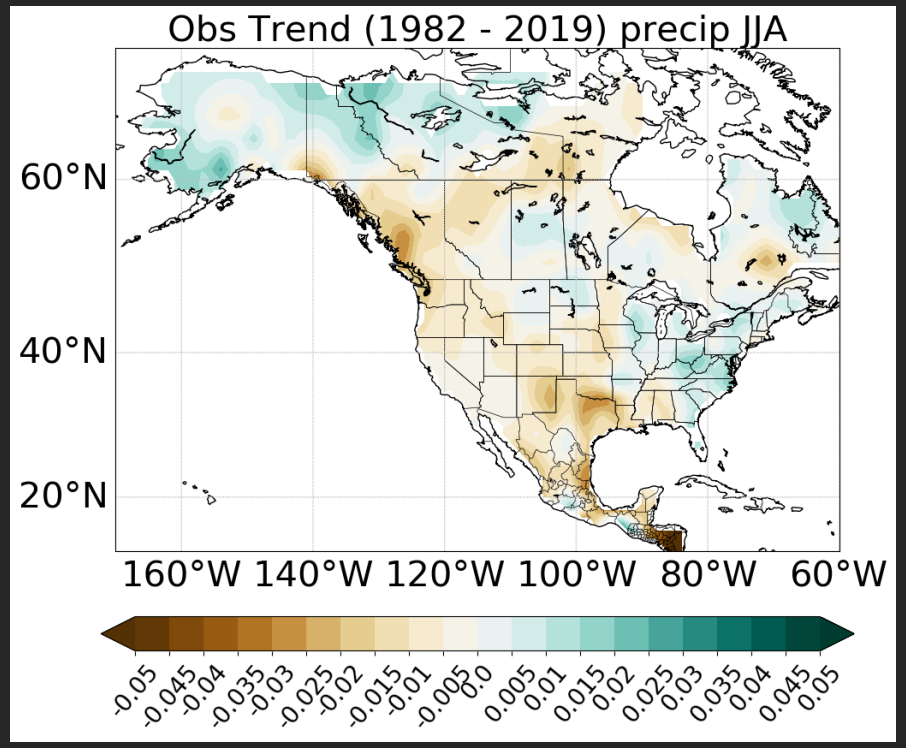
Summer Temperature Trends (1982-2019)



https://www.cpc.ncep.noaa.gov/products/people/sstrazzo/cbam/trend/05/Obs_TrendMap1982-2019_tmp2m.png

Summer Precipitation Trends (1982-2019)



https://www.cpc.ncep.noaa.gov/products/people/sstrazzo/cbam/trend/05/Obs_TrendMap1982-2019_prate.png

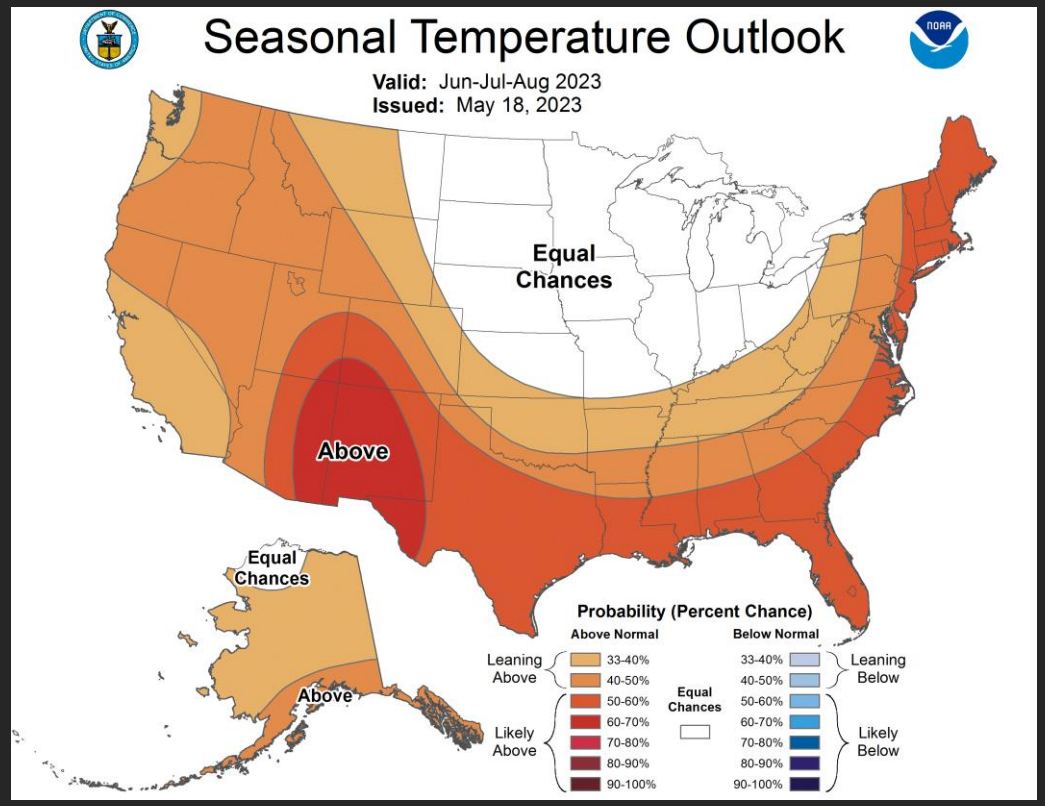
Over the past several decades, average summertime temperatures and precipitation have both trended slightly upward across Southeast Michigan. These trends highlight the changing "normal" and are important factors to consider in the seasonal forecast.

2023 Summer Outlook for Southeast Michigan

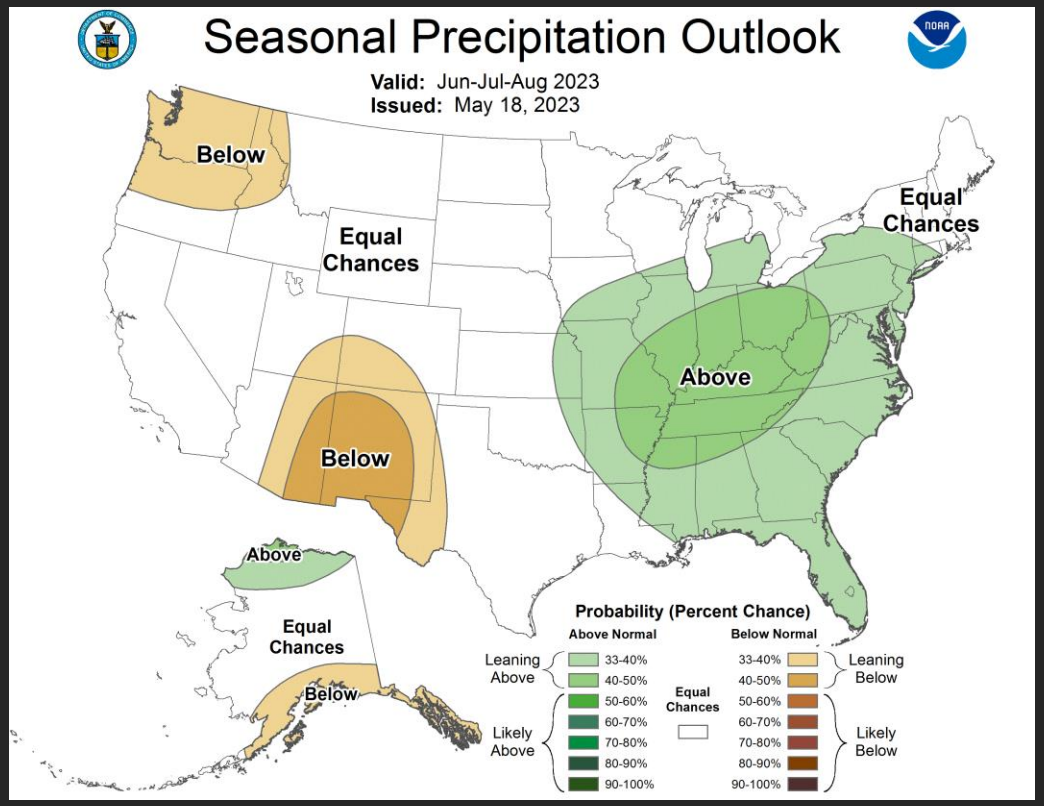
Official CPC Summer Outlook

Weather Forecast Office
Detroit, MI

Temperature



Precipitation



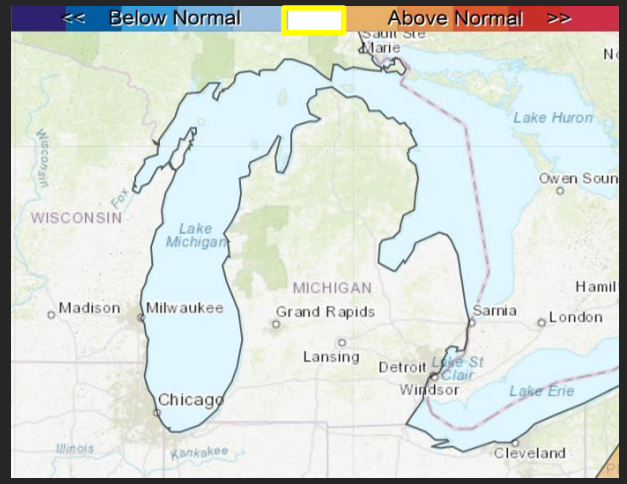
In the official summer outlook from the Climate Prediction Center, Southeast Michigan resides within **equal chances for above, near, or below normal temperatures.** Meanwhile, probabilities lean toward **above normal precipitation**. This outlook accounts for many factors including ENSO, dynamical guidance such as the NMME, statistical tools, soil moisture conditions, and trends in recent years.

2023 Summary Outlook for Southeast Michigan

Official CPC Summer Outlook

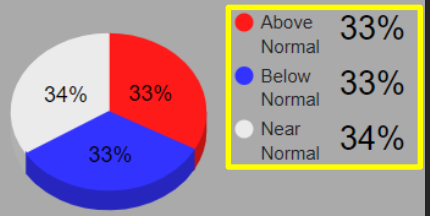
Weather Forecast Office
Detroit, MI

Temperature



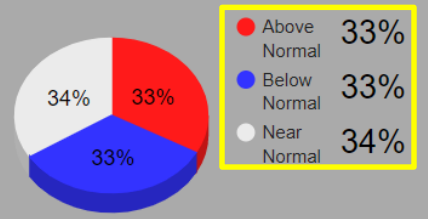
Detroit

Three Category Temperature Outlook
Normal Maximum Temperature: **81**
Normal Minimum Temperature: **61**



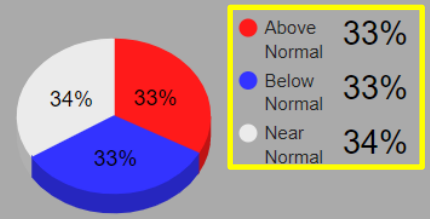
Flint

Three Category Temperature Outlook
Normal Maximum Temperature: **80**
Normal Minimum Temperature: **58**



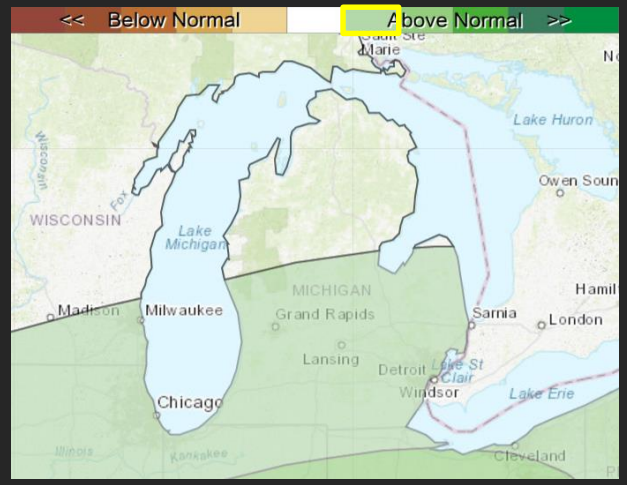
Saginaw

Three Category Temperature Outlook
Normal Maximum Temperature: **80**
Normal Minimum Temperature: **58**



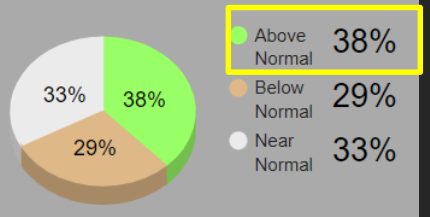
Equal Chances for Above, Below, or Near Normal Temperatures

Precipitation



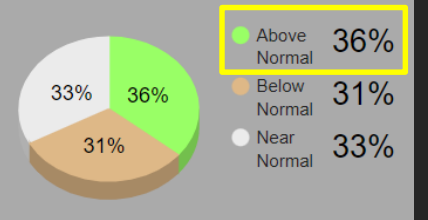
Detroit

Three Category Precipitation Outlook
Normal Precipitation: **9.85**



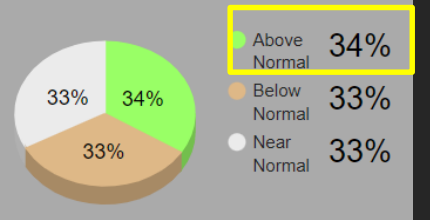
Flint

Three Category Precipitation Outlook
Normal Precipitation: **9.59**



Saginaw

Three Category Precipitation Outlook
Normal Precipitation: **9.26**



Leaning Toward Above Normal Precipitation

2023 Summer Outlook for Southeast Michigan

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Southeast Michigan Summer Records and Trivia

Normal High/Low	June	July	August
Detroit	79.7 / 60.2	83.7 / 64.4	81.4 / 63.2
Flint	78.2 / 55.9	82.1 / 59.7	79.9 / 58.3
Saginaw	78.5 / 57.7	82.2 / 61.2	80.0 / 59.4

Normal Precip	June	July	August
Detroit	3.26”	3.51”	3.26”
Flint	3.12”	3.41”	3.16”
Saginaw	3.28”	2.83”	3.85”

Warmest…	Temperature	Month	Summer
Detroit	105 (Jul. 24, 1934)	79.3 (Jul. 2011)	74.9 (2016)
Flint	108 (Jul. 13, 1936)	78.0 (Jul. 1921)	74.2 (1933)
Saginaw	111 (Jul. 13, 1936)	77.5 (Jul. 1936)	73.0 (1931)

Wettest…	Month	Summer
Detroit	8.76” (Jul. 1878)	16.96” (1896)
Flint	11.18” (Aug. 1937)	18.39” (1937)
Saginaw	10.76” (Jun. 2017)	16.28” (1928)

Coolest…	Temperature	Month	Summer
Detroit	36 (Jun. 11, 1972)	62.8 (Jun. 1985)	66.5 (1915)
Flint	33 (Jun. 4, 1998)	60.1 (Jun. 1969)	65.4 (1992)
Saginaw	33 (Jun. 8, 1949)	60.6 (Jun. 1982)	64.8 (1915)

Driest…	Month	Summer
Detroit	0.16” (Aug. 1894)	3.58” (1911)
Flint	0.16” (Jul. 1939)	3.76” (1930)
Saginaw	0.27” (Aug. 1927)	3.54” (1927)

Normal # of 90+ degree days per summer… Detroit: 11.2; Flint: 9.7; Saginaw: 7.7

All temps in °F; normals reflect 1991-2020 period