



2024

Summer Outlook for Southeast Michigan

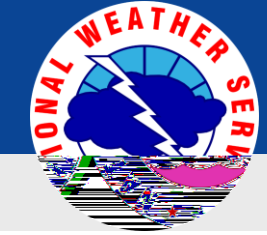
Seasonal Outlook Valid June 1 to August 31, 2024



**National Oceanic and
Atmospheric Administration**

U.S. Department of Commerce

**National Weather Service
Detroit, MI**



Official CPC Summer Outlook

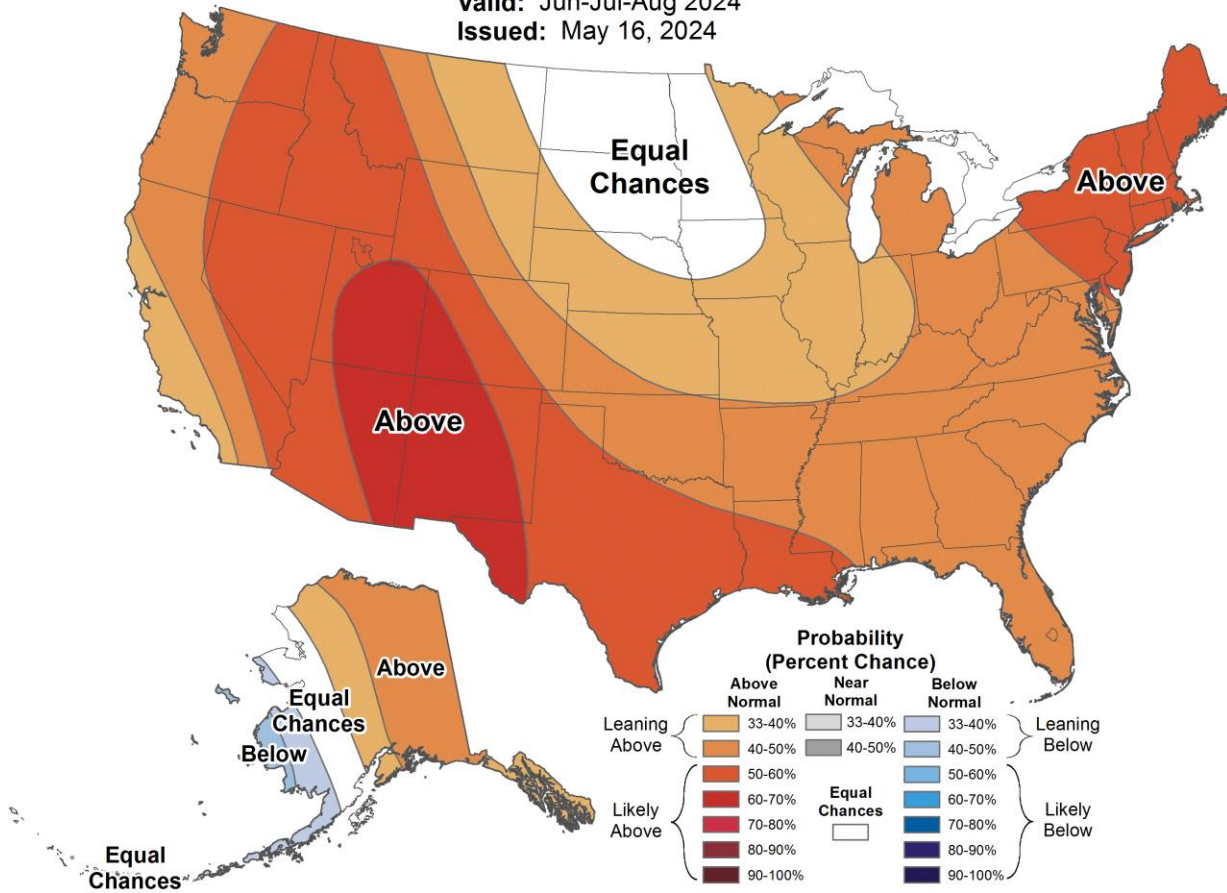
2024 Summer Outlook for SE MI



Seasonal Temperature Outlook



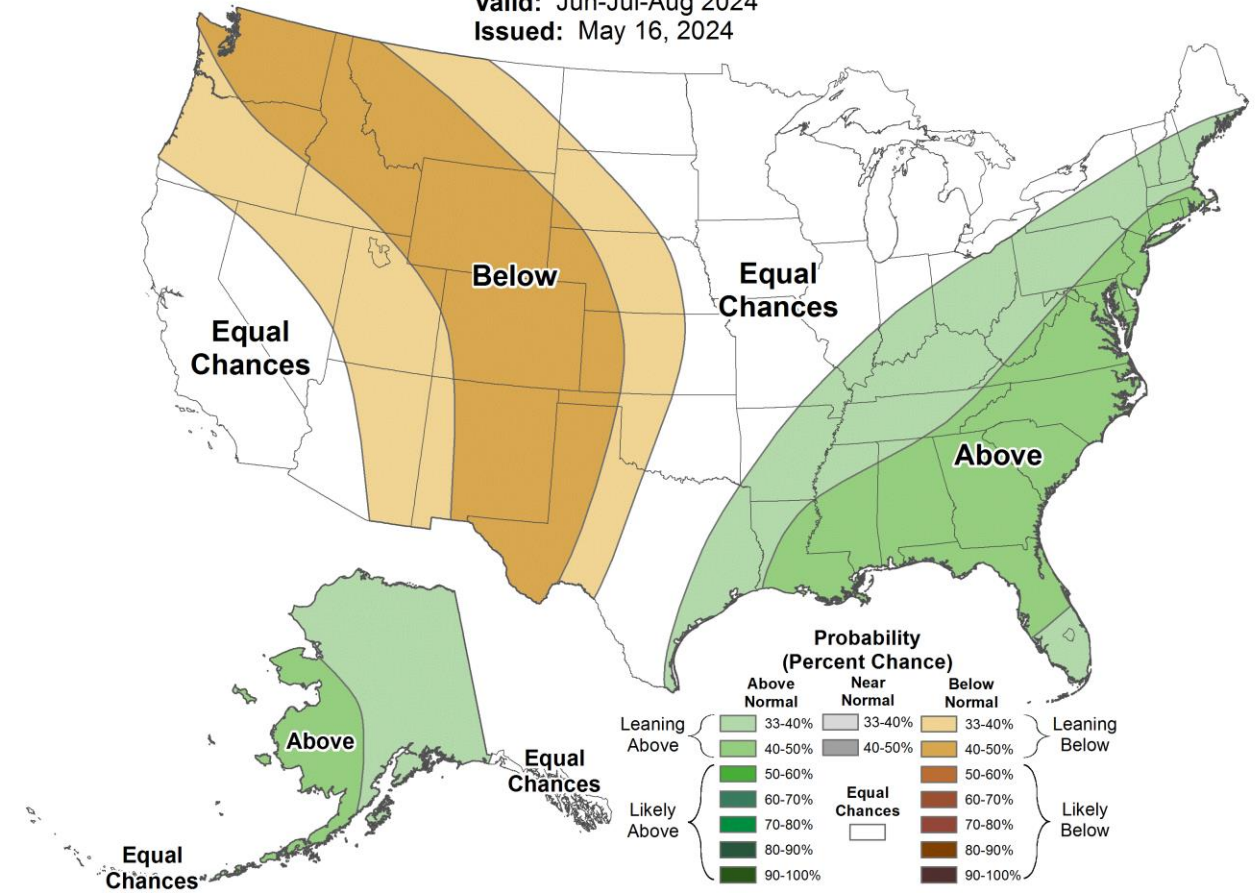
Valid: Jun-Jul-Aug 2024
Issued: May 16, 2024



Seasonal Precipitation Outlook

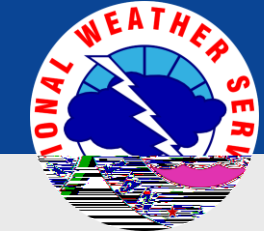


Valid: Jun-Jul-Aug 2024
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In the official summer outlook from the Climate Prediction Center, probabilities lean toward **above normal temperatures** for Southeast Michigan. Meanwhile, we have **equal chances for above, near, or below normal precipitation**. This outlook accounts for many factors including ENSO, dynamical guidance such as the NMME, statistical tools, soil moisture conditions, and trends in recent years.

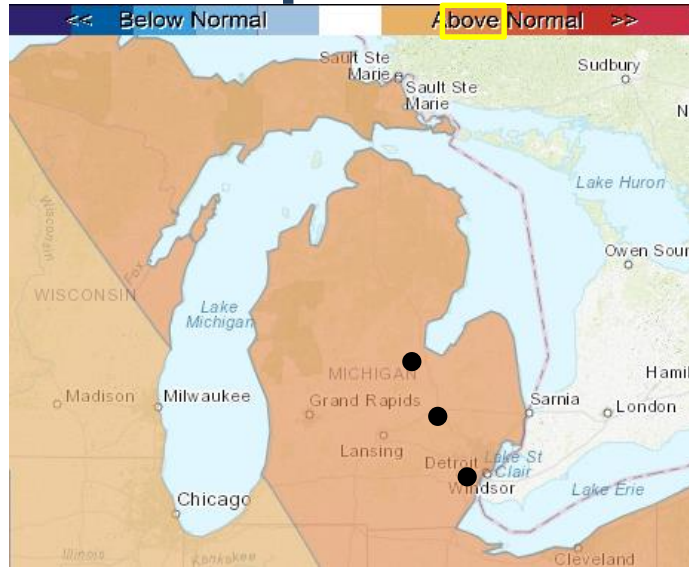




Official CPC Summer Outlook Probabilities

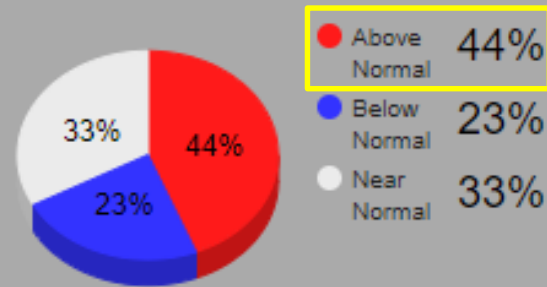
2024 Summer Outlook for SE MI

Temperature



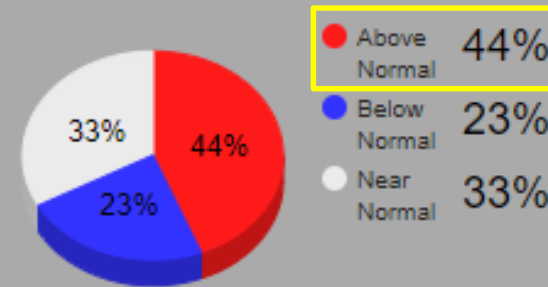
Detroit

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



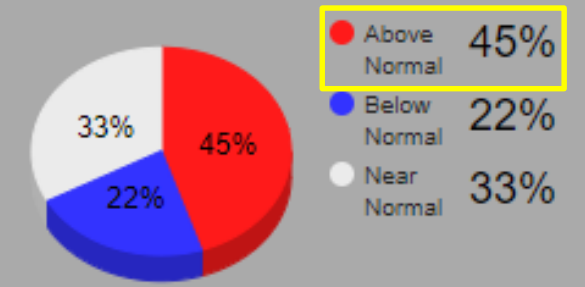
Flint

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



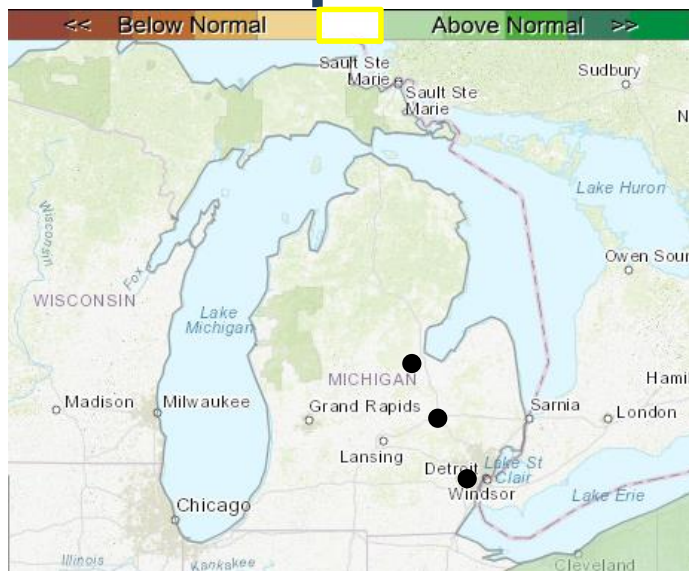
Saginaw

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



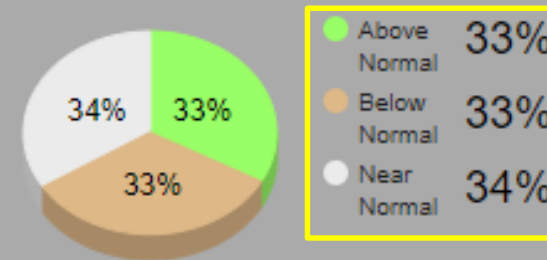
Leaning Toward Above Normal Temperatures

Precipitation



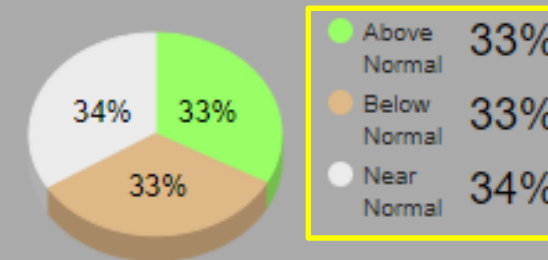
Detroit

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



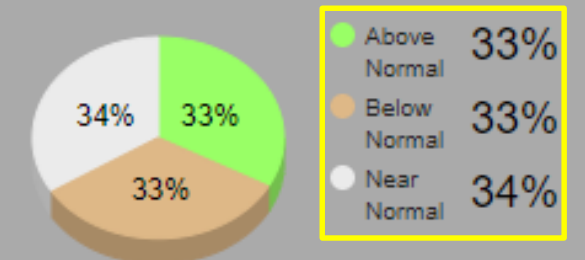
Flint

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



Saginaw

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



Equal Chances for Above, Below, or Near Normal Precipitation

https://www.cpc.ncep.noaa.gov/products/predictions/long_range/interactive/index.php



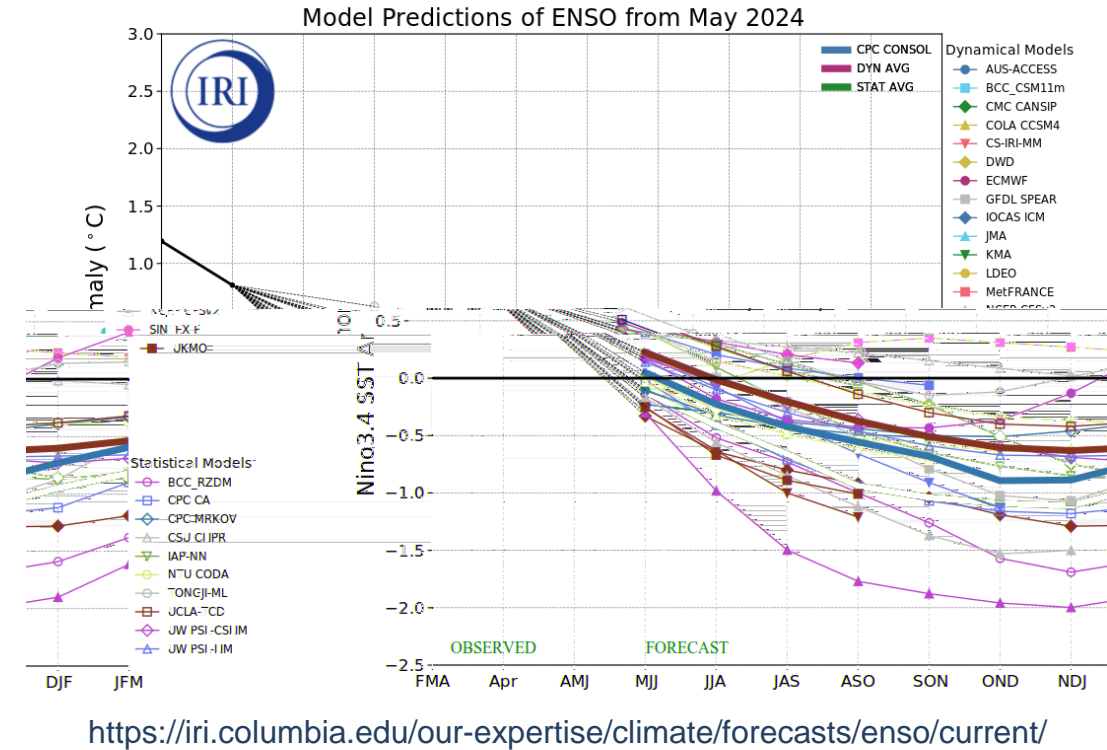
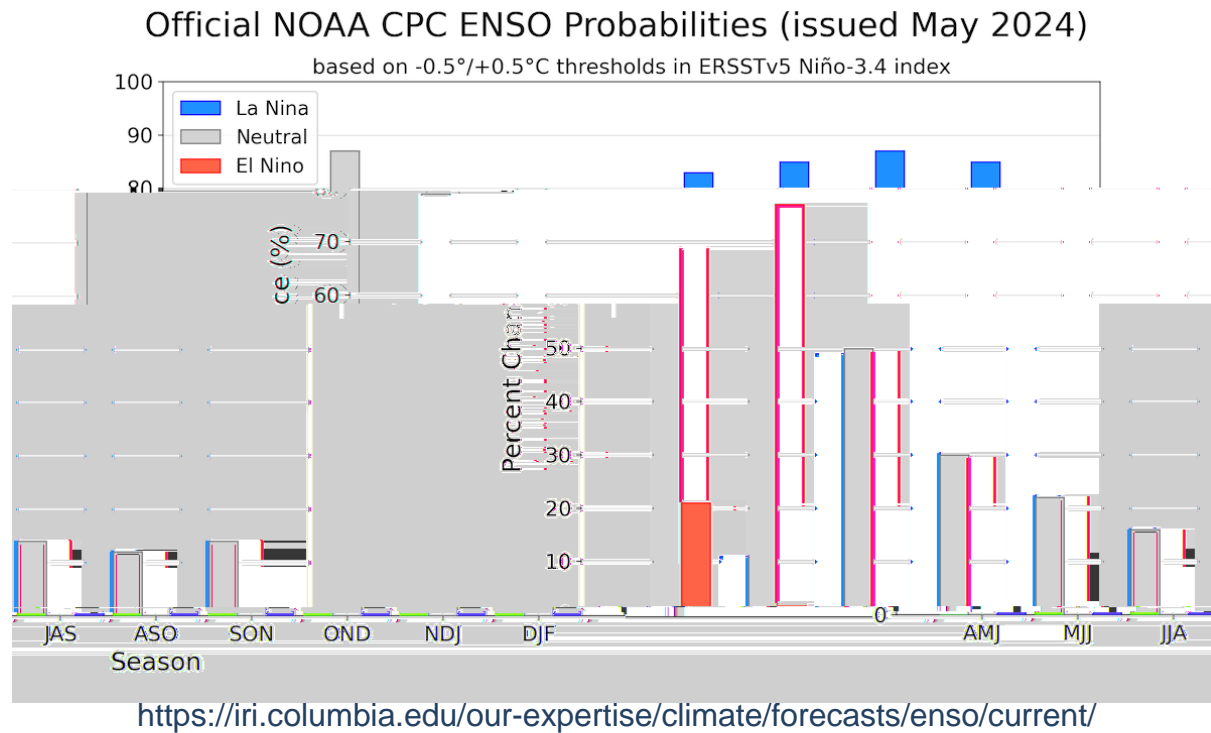


ENSO Outlook

2024 Summer Outlook for SE MI

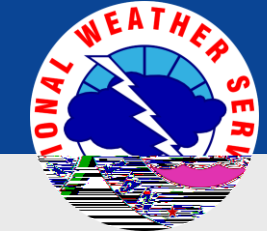
CPC/IRI Probabilistic ENSO Forecast

CPC/IRI ENSO Predictions Plume



An El Niño Advisory remains in effect as of May 16, but atmospheric and oceanic patterns associated with El Niño are decreasing. A transition from El Niño to ENSO-neutral is likely in the next month. La Niña may develop in June-August (49% chance) or July-September (69% chance), and is then likely to continue into the fall/winter.

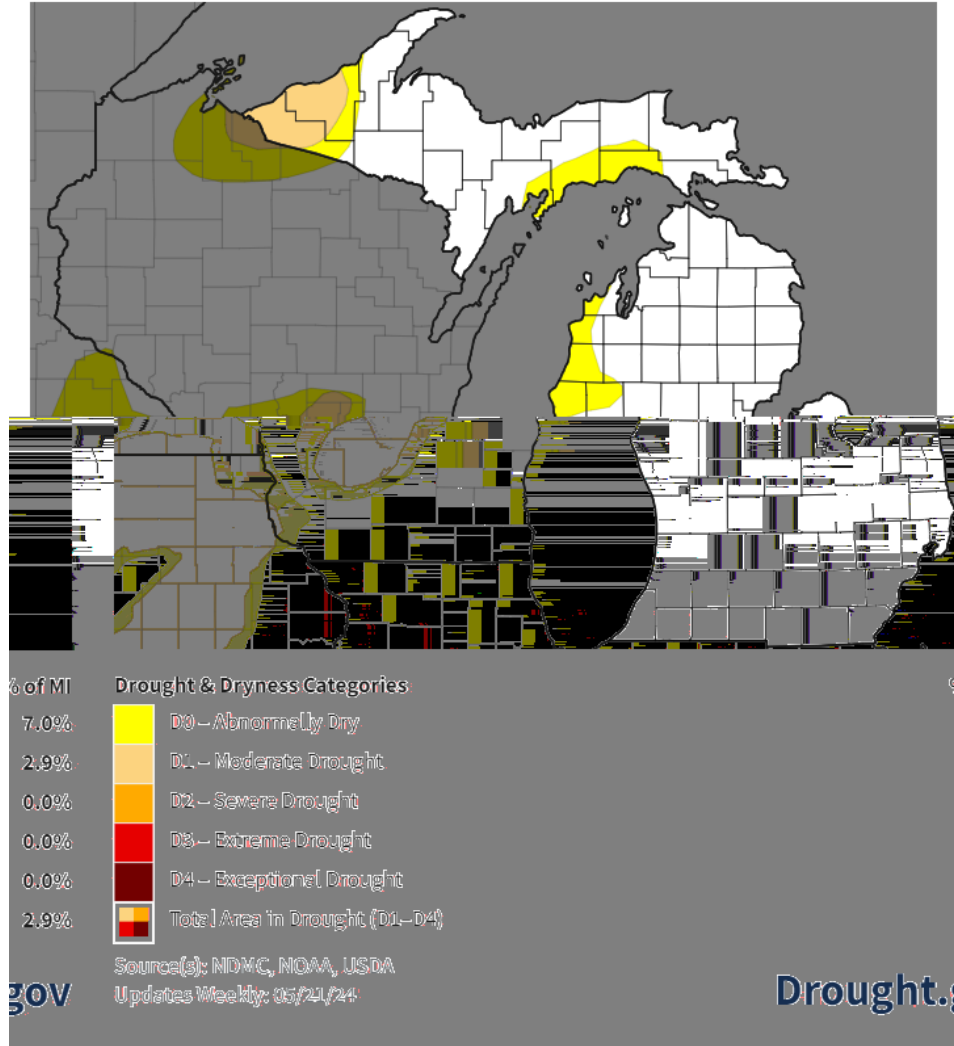
Impacts of ENSO are typically less pronounced during the summer compared to the winter, but ENSO still provides a background influence for upper air patterns across the northern hemisphere. Read more about the latest ENSO status and forecast from CPC [here](#) (updated weekly).



Local Drought Status and Seasonal Drought Outlook

2024 Summer Outlook for SE MI

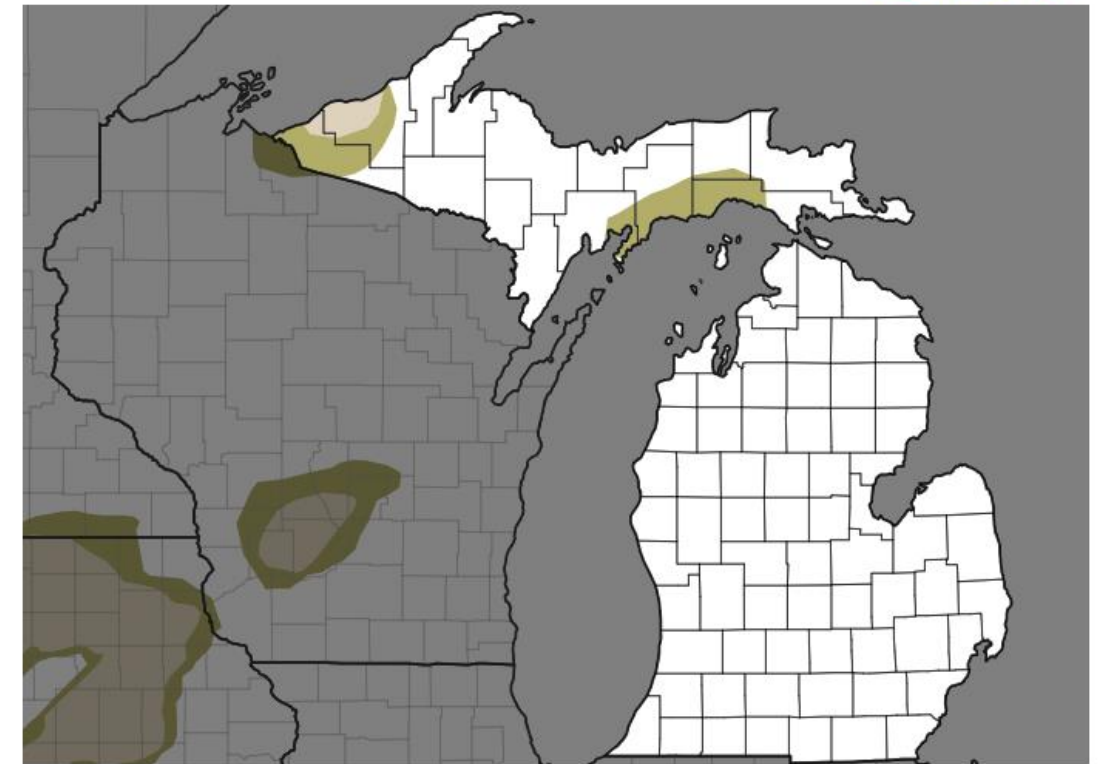
U.S. Drought Monitor: Michigan



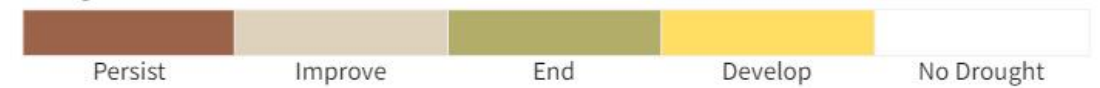
Recent Rainfall

Rainfall (Departure)	Detroit	Flint	Saginaw
1 Month Apr 23 to May 22	2.48" (-1.16")	2.59" (-1.00")	1.84" (-1.51")
3 Months Feb 23 to May 22	7.55" (-1.35")	7.61" (-0.57")	6.71" (-1.41")
6 Months Nov 23 to May 22	15.45" (-0.19")	13.09" (-0.82")	11.14" (-2.64")
1 Year May 22, 2023 to May 22, 2024	35.64" (+1.32")	32.82" (+0.85")	32.21" (-0.09")
2 Years May 22, 2022 to May 22, 2024	62.59" (-6.05")	59.68" (-4.26")	62.06" (-2.18")

Seasonal (3-Month) Drought Outlook



Drought Is Predicted To...



Source(s): Climate Prediction Center

Data Valid: 05/16/24

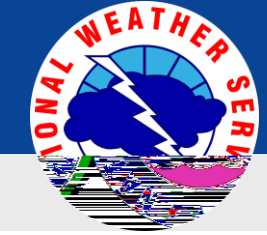
Drought.gov

Southeast Michigan is free of drought as of May 21. Rainfall amounts have been about 1 inch below normal since May 1. Drought conditions are not expected to expand across the region in the latest seasonal drought outlook.



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Detroit, MI

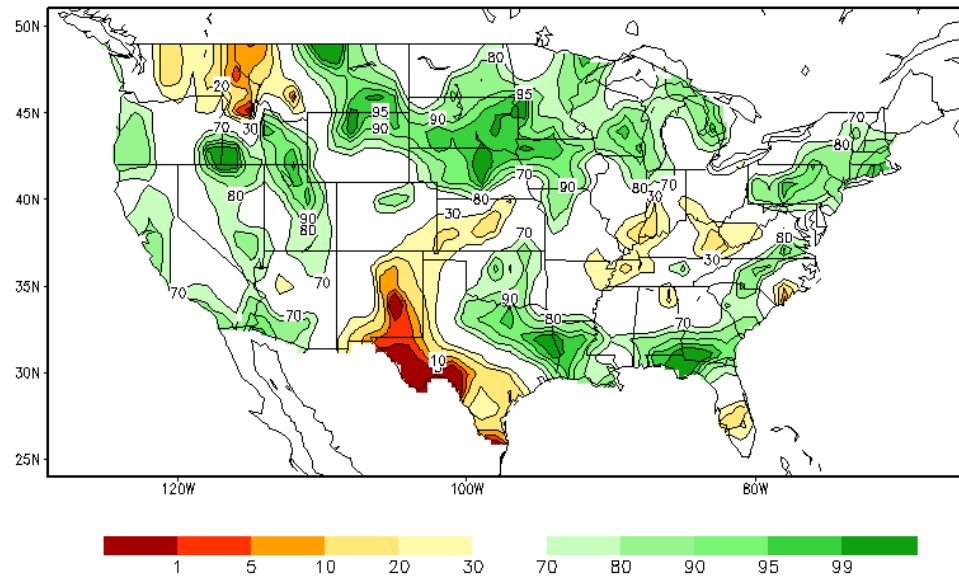


Recent Conditions

2024 Summer Outlook for SE MI

Soil Moisture

Calculated Soil Moisture Ranking Percentile
MAY 22, 2024

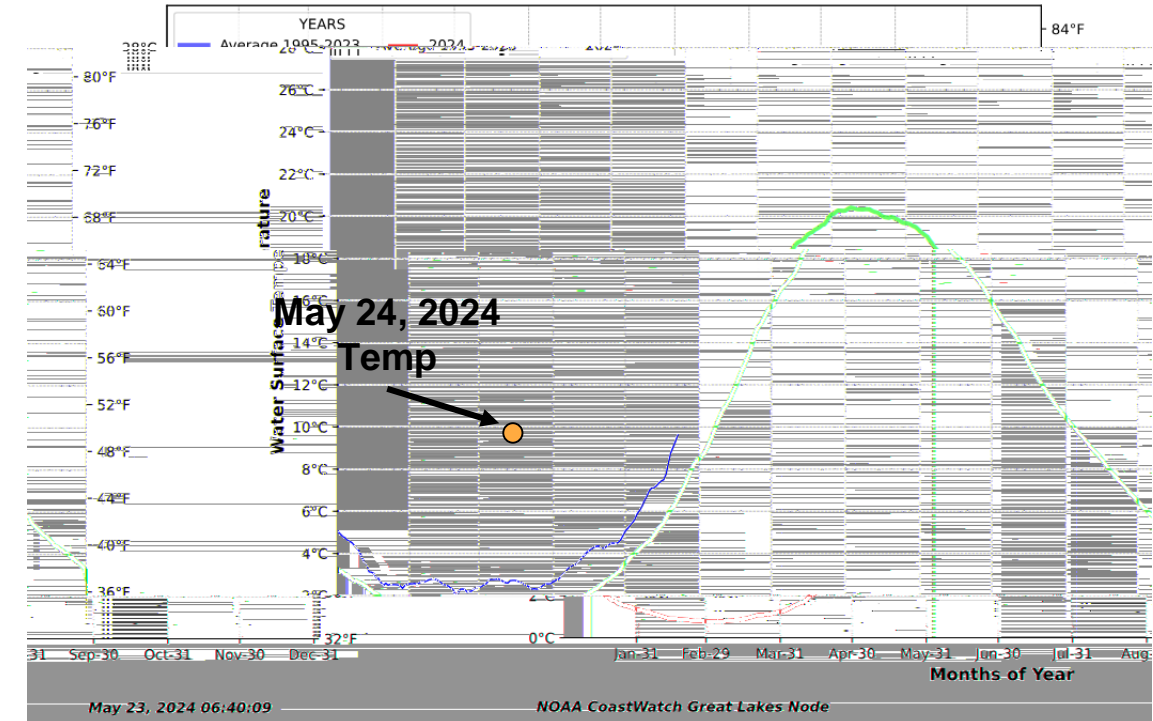


https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/Figures/daily/curr.w.rank.daily.gif

Lake Huron Temperature



Lake Huron Average Great Lakes Surface Environmental Analysis (GLSEA)
Surface Water Temperature Compared to Current Year



https://apps.glerl.noaa.gov/coastwatch/webdata/statistic/pdf/avgtemps-h_1995-2024.pdf

Soil moisture is calculated to be above normal for parts of the Great Lakes region including parts of Southeast Michigan. These positive soil moisture anomalies may temper excessive heat potential, at least early in the season. Meanwhile, Great Lakes water temperatures (Lake Huron shown above) are running on the warm side of long-term averages for this time of year.





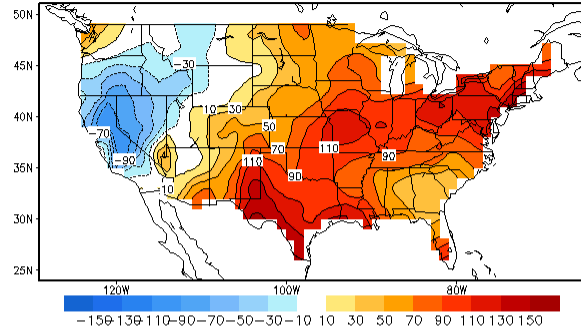
CPC Soil Moisture Analogs

2024 Summer Outlook for SE MI

Temperature
Precipitation

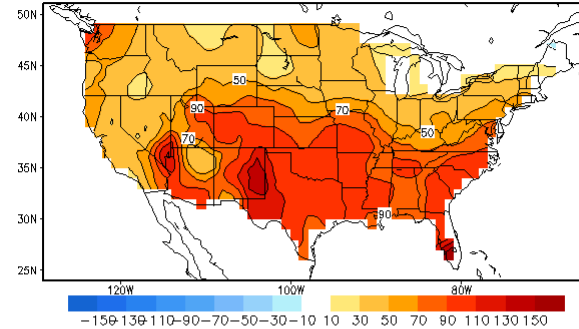
June

Lagged Averaged Temperature Outlook for JUN 2024
units: anomaly (sdX100), SM data ending at 20240522



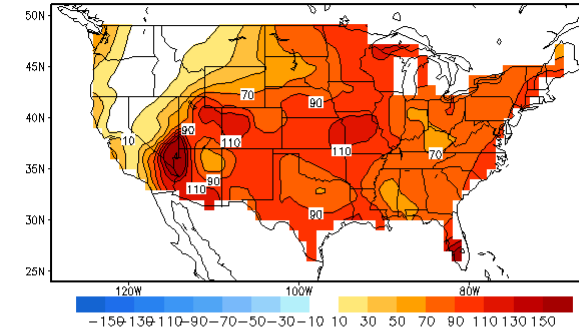
July

Lagged Averaged Temperature Outlook for JUL 2024
units: anomaly (sdX100), SM data ending at 20240522

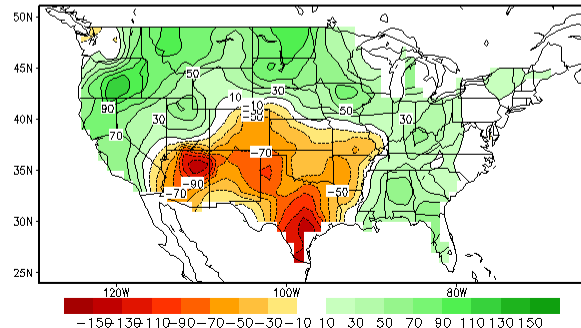


August

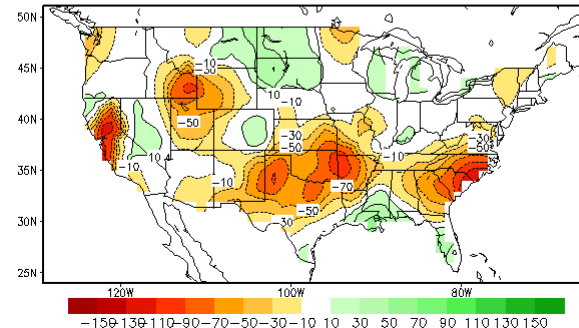
Lagged Averaged Temperature Outlook for AUG 2024
units: anomaly (sdX100), SM data ending at 20240522



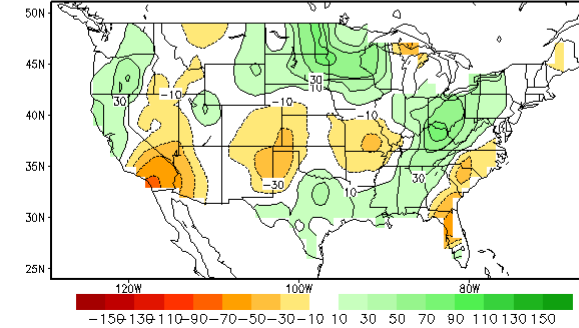
Lagged Averaged Precipitation Outlook for JUN 2024
units: anomaly (sdX100), SM data ending at 20240522



Lagged Averaged Precipitation Outlook for JUL 2024
units: anomaly (sdX100), SM data ending at 20240522



Lagged Averaged Precipitation Outlook for AUG 2024
units: anomaly (sdX100), SM data ending at 20240522



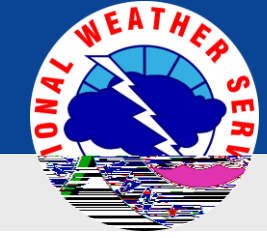
https://www.cpc.ncep.noaa.gov/soilmst/img/cas_pt_mon.lead1.gif

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 showed warmer than normal conditions across the Great Lakes for each month of the summer. The analogs also generally showed a slight lean toward wetter than normal conditions for most of the region.





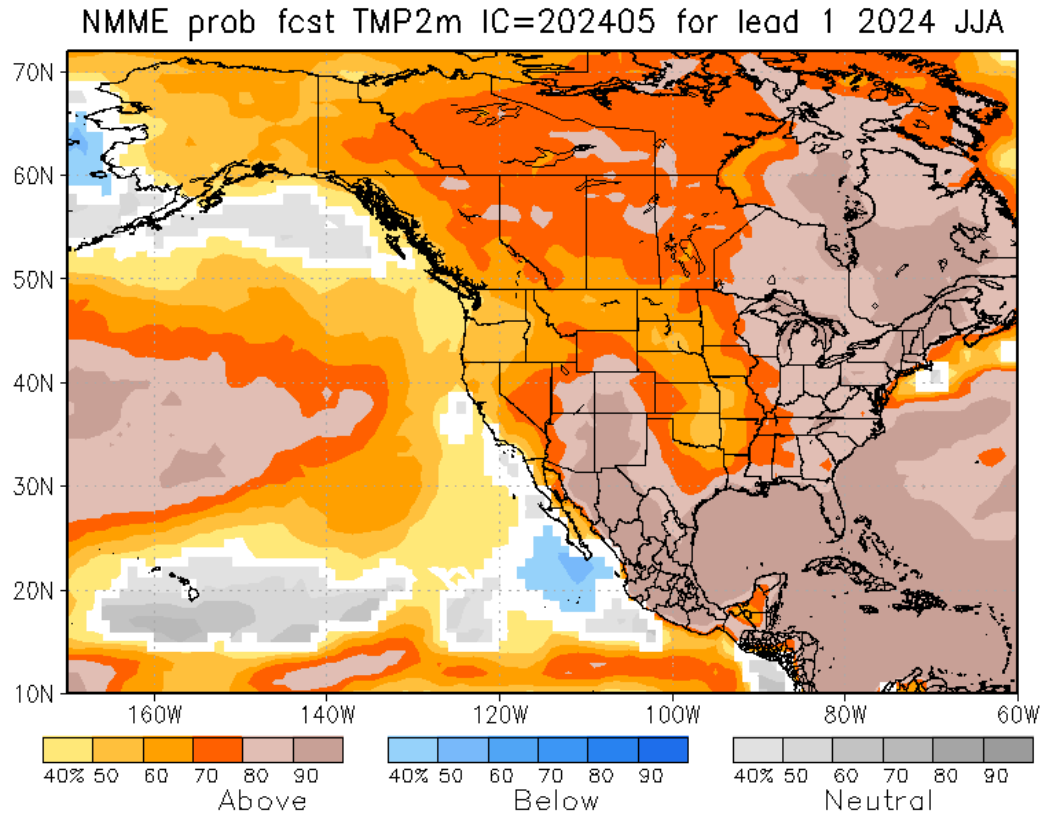
Model Ensemble Guidance

2024 Summer Outlook for SE MI

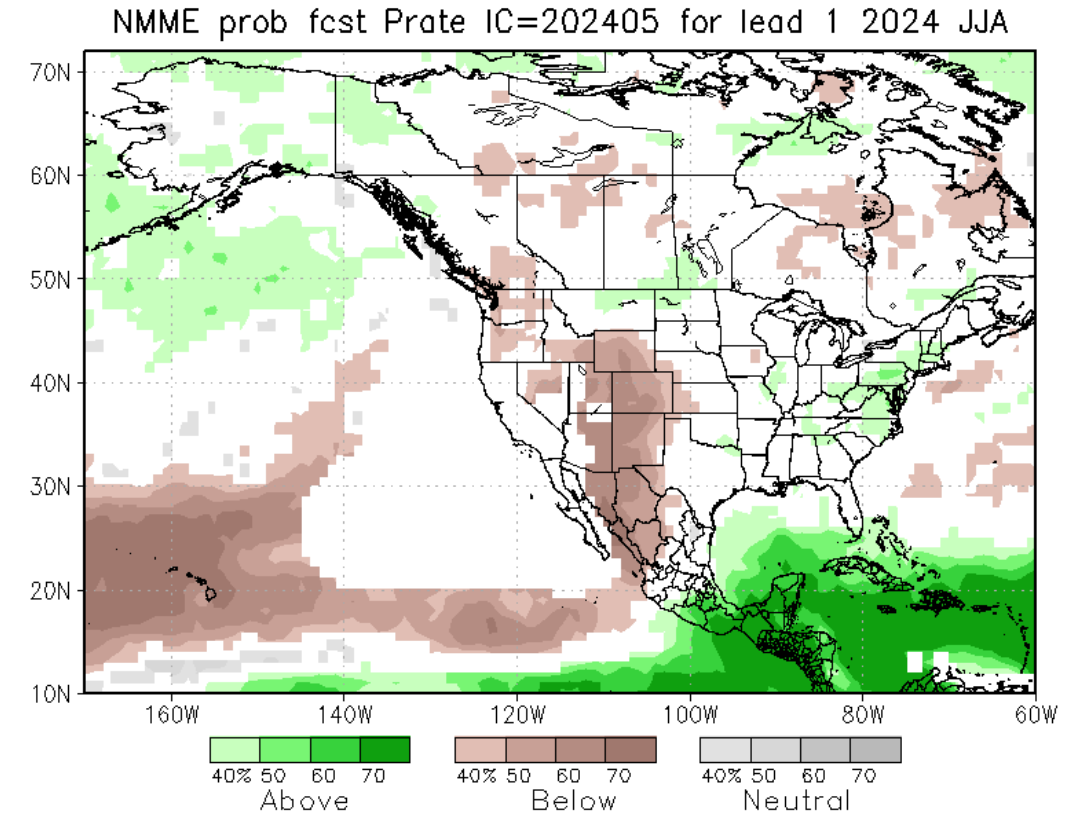
Temperature

Precipitation

The North American Multi-Model Ensemble ([NMME](#)), a seasonal forecasting system featuring coupled models from US and Canadian modeling centers, is another tool that provides additional guidance to inform seasonal forecasters. The latest output offers a 80-90% probability for above normal temperatures across the Great Lakes. Little signal is present for precipitation.



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



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





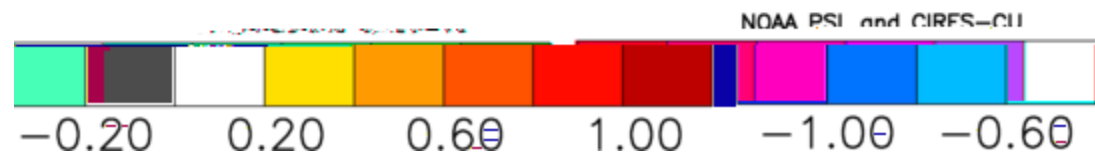
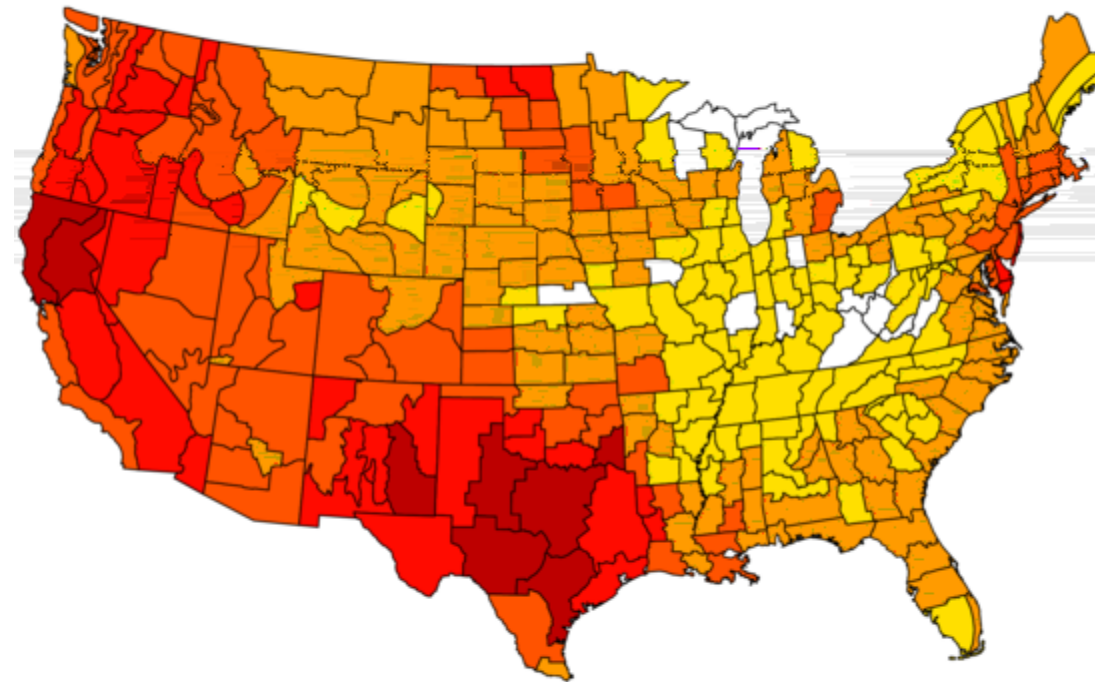
Trends in Recent Summers

2024 Summer Outlook for SE MI

Composite anomalies of the past 15 years show that summers have trended warmer and wetter across Southeast Michigan. These trends highlight the changing “normal” and are important factors to consider in the seasonal forecast.

Temperature

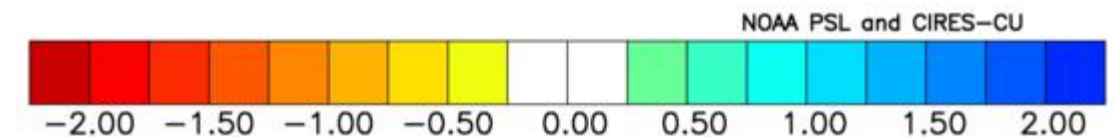
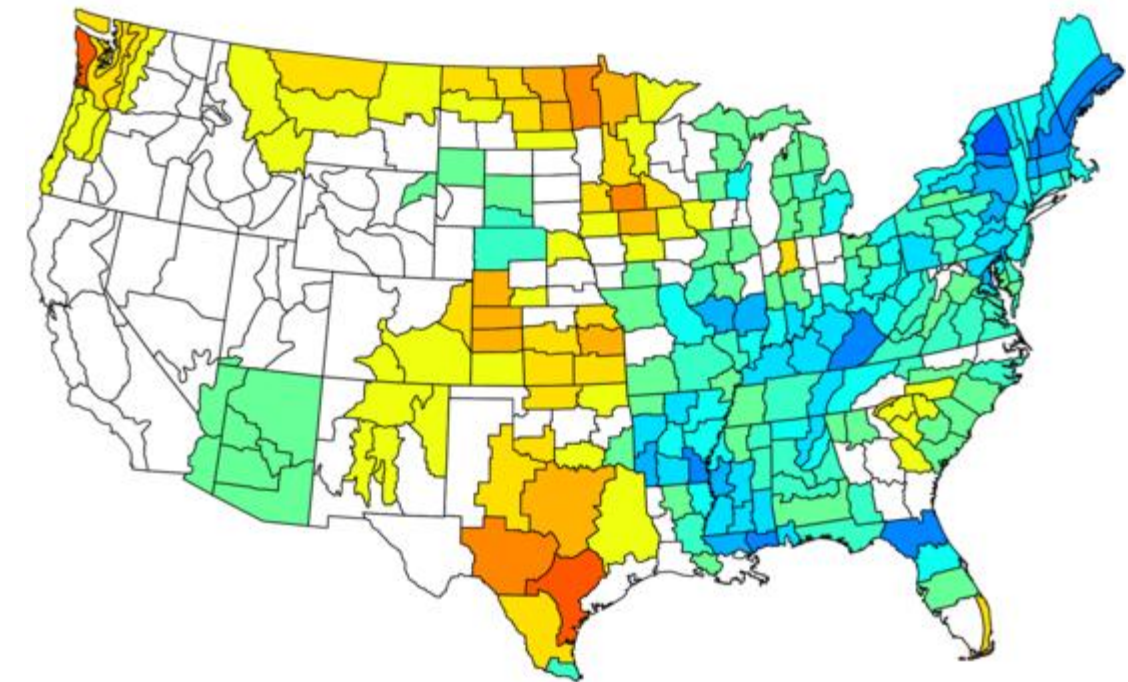
NOAA/NCEI Climate Division Composite Temperature Anomalies (F)
Jun to Aug 2008 to 2023
Versus 1991–2020 Longterm Average



<https://psl.noaa.gov/data/usclimdivs/>

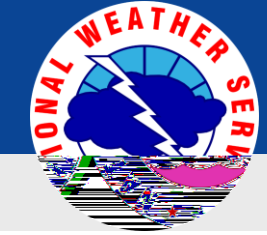
Precipitation

NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)
Jun to Aug 2008 to 2023
Versus 1991–2020 Longterm Average



<https://psl.noaa.gov/data/usclimdivs/>



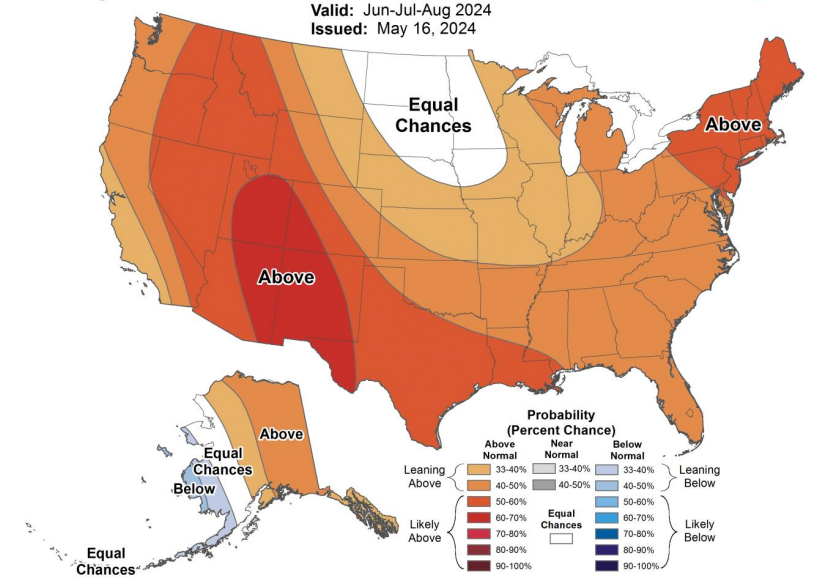


Outlook Summary

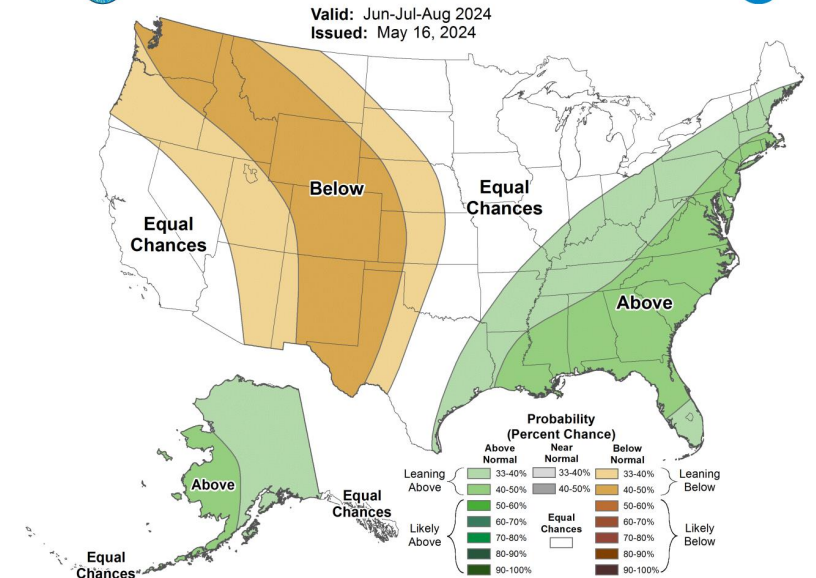
2024 Summer Outlook for SE MI

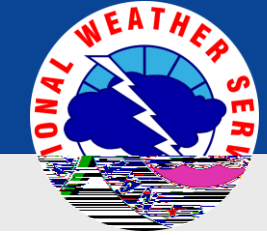
- The official summer outlook shows that **probabilities lean toward above normal temperatures** across the region. Meanwhile, we have **equal chances for above, below, or near normal precipitation**.
- El Niño is quickly dissipating and La Niña is likely to develop by late summer. However, the impacts of these climate patterns are relatively low during the summer months compared to during the winter.
- Trends over recent years are accounted for in the outlook, which show Southeast Michigan summers gradually becoming warmer and wetter.
- Despite odds favoring a warmer summer overall, that does not rule out periods of cooler weather at times.
- Drought conditions are currently not expected to expand across the region.

Seasonal Temperature Outlook



Seasonal Precipitation Outlook





Summer Records and Trivia – Temperature

2024 Summer Outlook for SE MI

Normal High Temp	June	July	August	Summer (JJA)
Detroit	79.7	83.7	81.4	81.6
Flint	78.2	82.1	79.9	80.1
Saginaw	78.5	82.2	80.0	80.2

Normal Low Temp	June	July	August	Summer (JJA)
Detroit	60.2	64.4	63.2	62.6
Flint	55.9	59.7	58.3	58.0
Saginaw	57.7	61.2	59.4	59.4

Warmest...	Temperature	Month	Summer (JJA)
Detroit	105 (7/24/1934)	79.3 (July 2011)	74.9 (2016)
Flint	108 (7/8/1936 & 7/13/1936)	78.0 (July 1921)	74.2 (1933)
Saginaw	111 (7/13/1936)	77.5 (July 1921)	73.0 (1931)

Coollest...	Temperature	Month	Summer (JJA)
Detroit	36 (6/1/1966 & 6/11/1972)	62.8 (June 1903 & June 1985)	66.5 (1915)
Flint	33 (6/1/1966 & 6/4/1998)	60.1 (June 1969)	65.4 (1992)
Saginaw	33 (6/10/1941 & 6/8/1949)	60.6 (June 1982)	64.8 (1915)

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

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



Summer Records and Trivia – Precipitation

2024 Summer Outlook for SE MI

Normal Precipitation	June	July	August	Summer (JJA)
Detroit	3.26"	3.51"	3.26"	10.03"
Flint	3.12"	3.41"	3.16"	9.69"
Saginaw	3.28"	2.83"	3.85"	9.96"

Wettest...	Day	Month	Summer (JJA)
Detroit	4.74" (7/31/1925)	8.76" (July 1878)	16.96" (1896)
Flint	4.50" (8/8/1937)	11.18" (Aug. 1937)	18.39" (1937)
Saginaw	6.93" (8/10/2012)	10.76" (June 2017)	16.28" (1928)

Driest...	Month	Summer (JJA)
Detroit	0.16" (Aug. 1894)	3.58" (1911)
Flint	0.16" (July 1939)	3.76" (1930)
Saginaw	0.27" (Aug. 1927)	3.54" (1927)





Volunteer Weather Observers Needed!

2024 Summer Outlook for SE MI

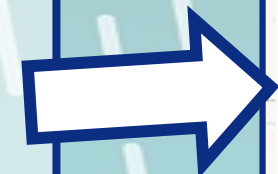
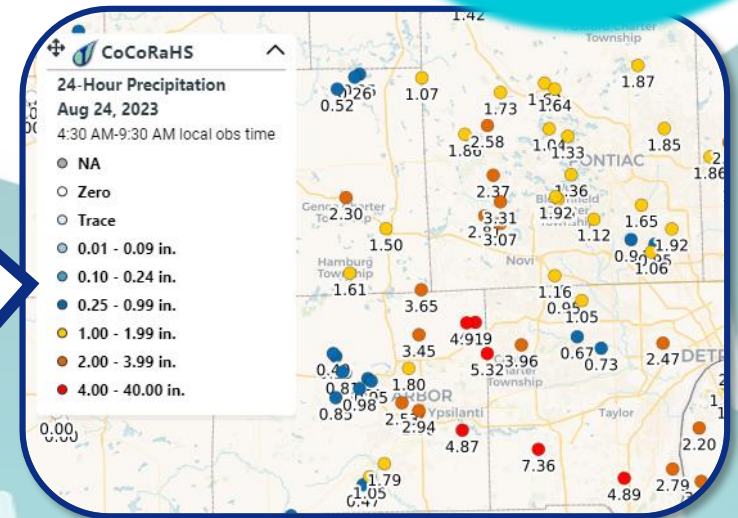
Measure precipitation in your own backyard with **CoCoRaHS**

The **Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS)** is a grassroots network of volunteers of all ages and backgrounds working together to measure and map precipitation. The only requirements are an enthusiasm for watching and reporting weather conditions and a desire to learn more about how weather can affect and impact our lives.

For more info and to sign up, visit cocorahs.org



Rainfall amounts can vary greatly even over short distances! This summer, help us get a more accurate picture of how much rain fell and where.



BECAUSE EVERY DROP COUNTS!