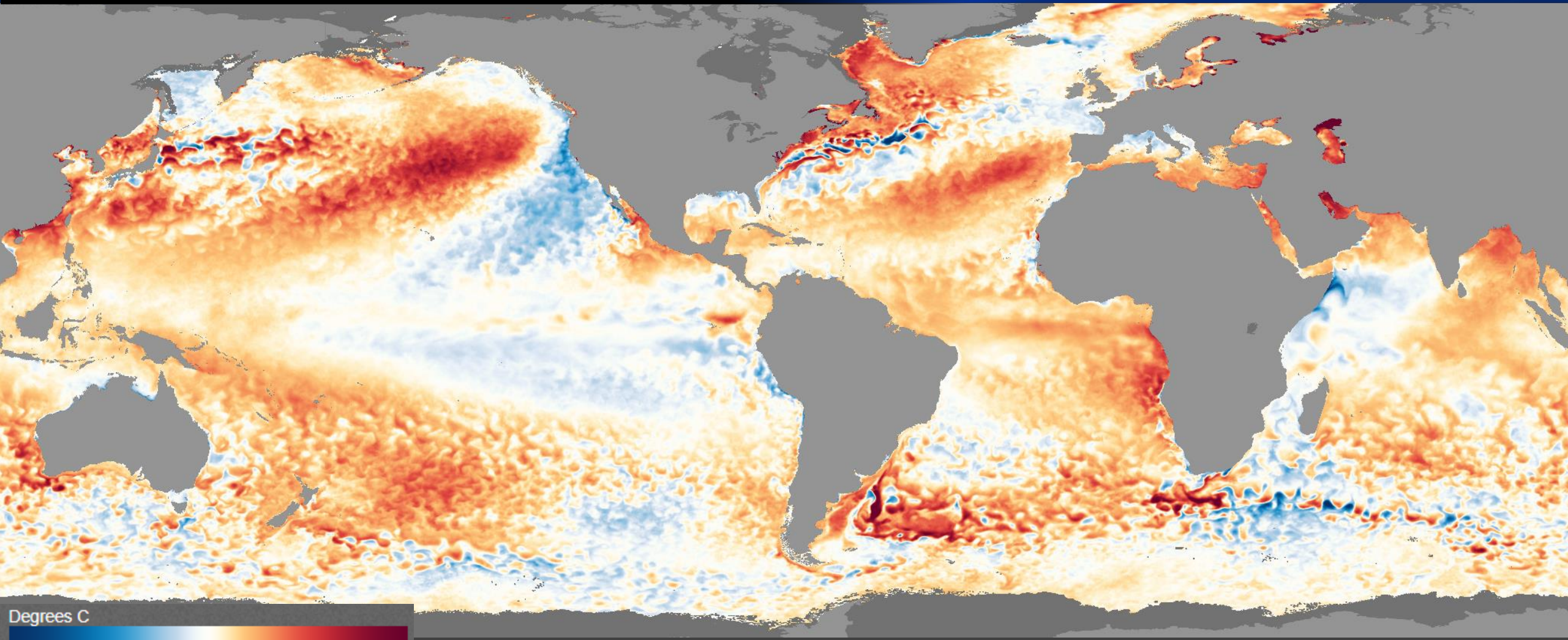
2021 Summer Outlook for Southeast Michigan

Weather Forecast Office
Detroit, MI

90 Day Outlook Valid June 1 to August 31, 2021



Sea Surface Temperature Anomaly – May 17–23, 2021

Image Courtesy NOAA View

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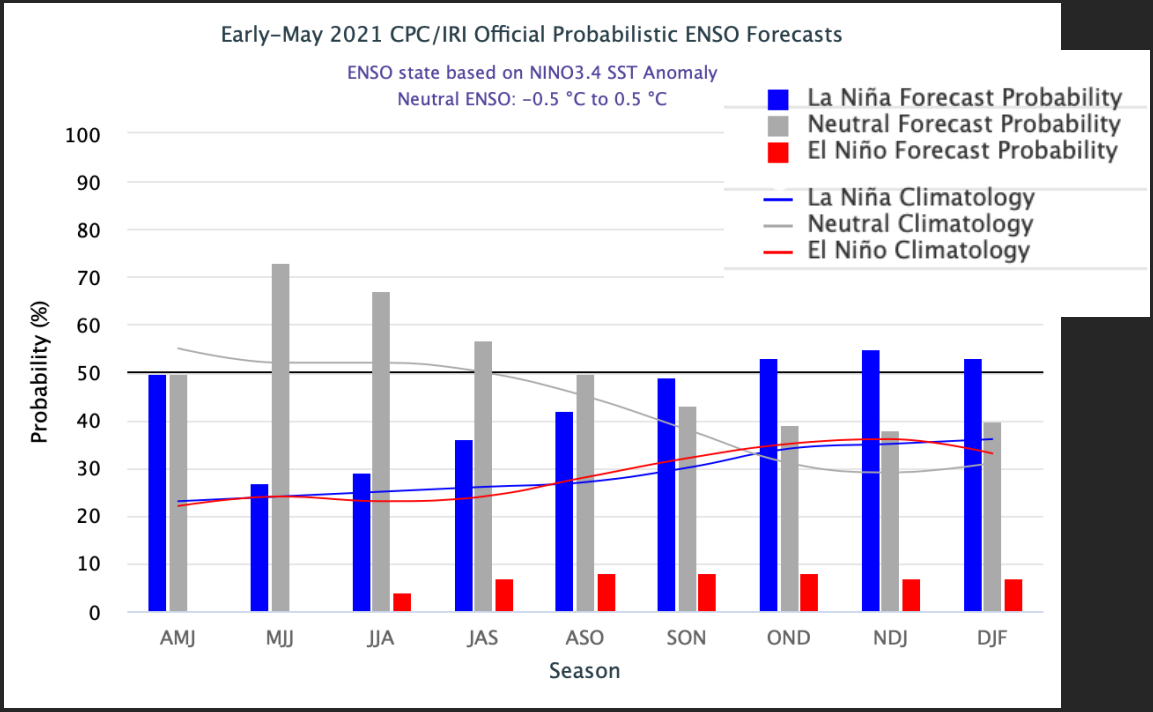
Weather Forecast Office
Detroit, MI

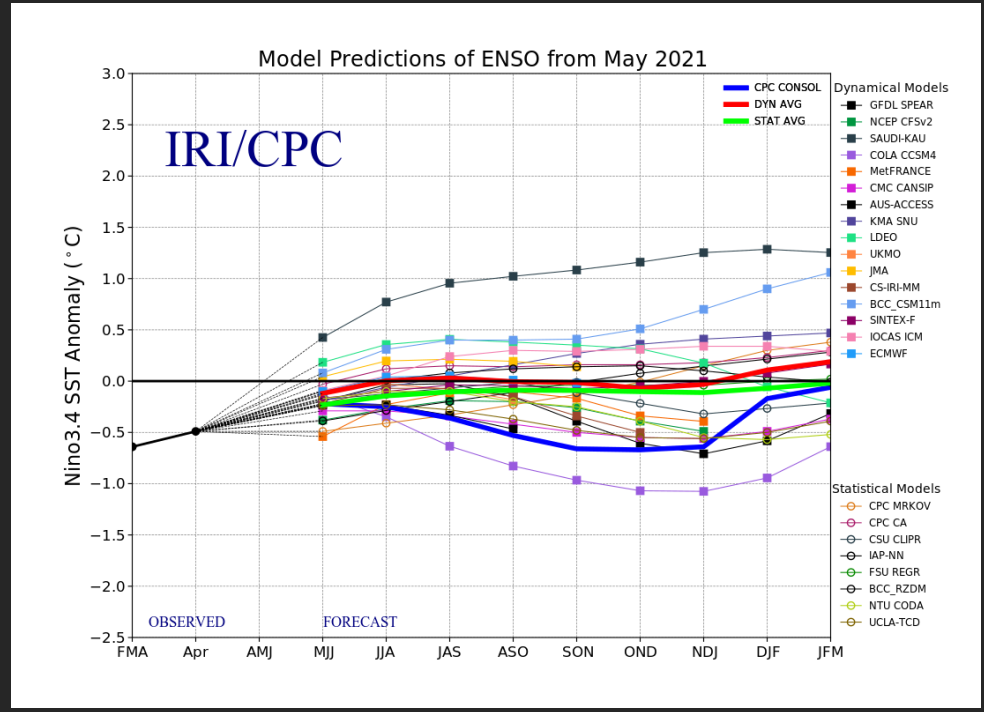
State of ENSO

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/

After a period of La Niña conditions this past winter, ENSO has transitioned to a neutral state as of early May. This is most likely to continue through the summer months. ENSO typically doesn't have a strong influence on local conditions during the warm season, especially during periods of neutral conditions.

2021 Summer Outlook for Southeast Michigan

Recent Conditions

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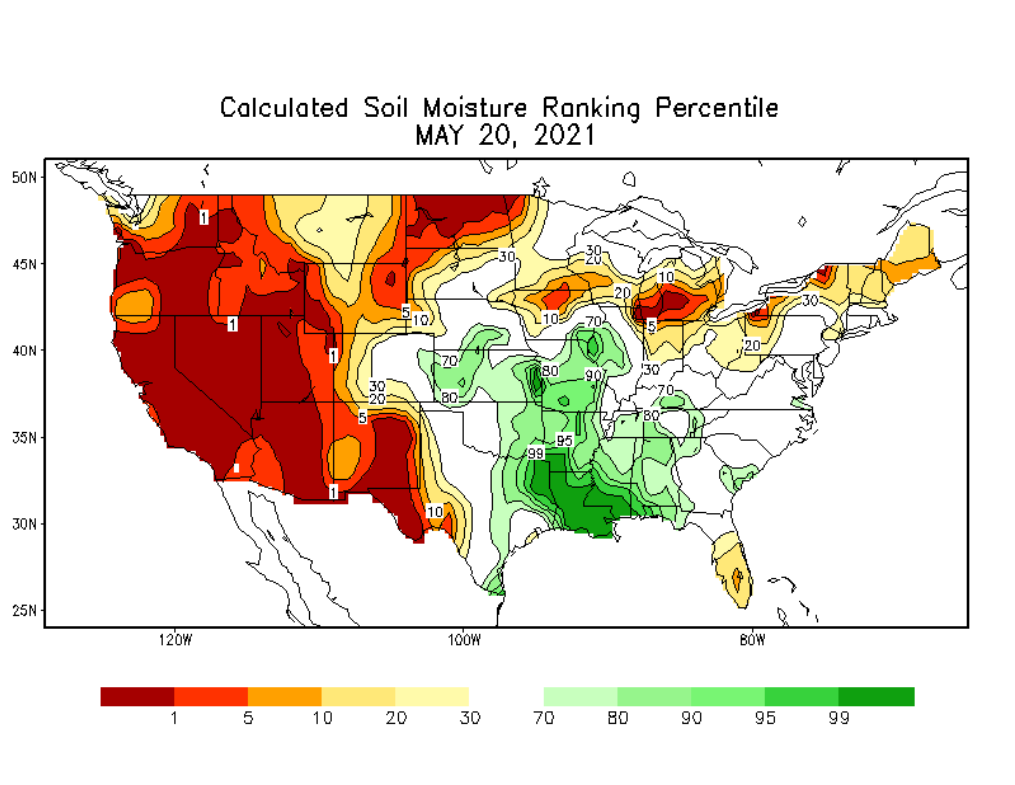
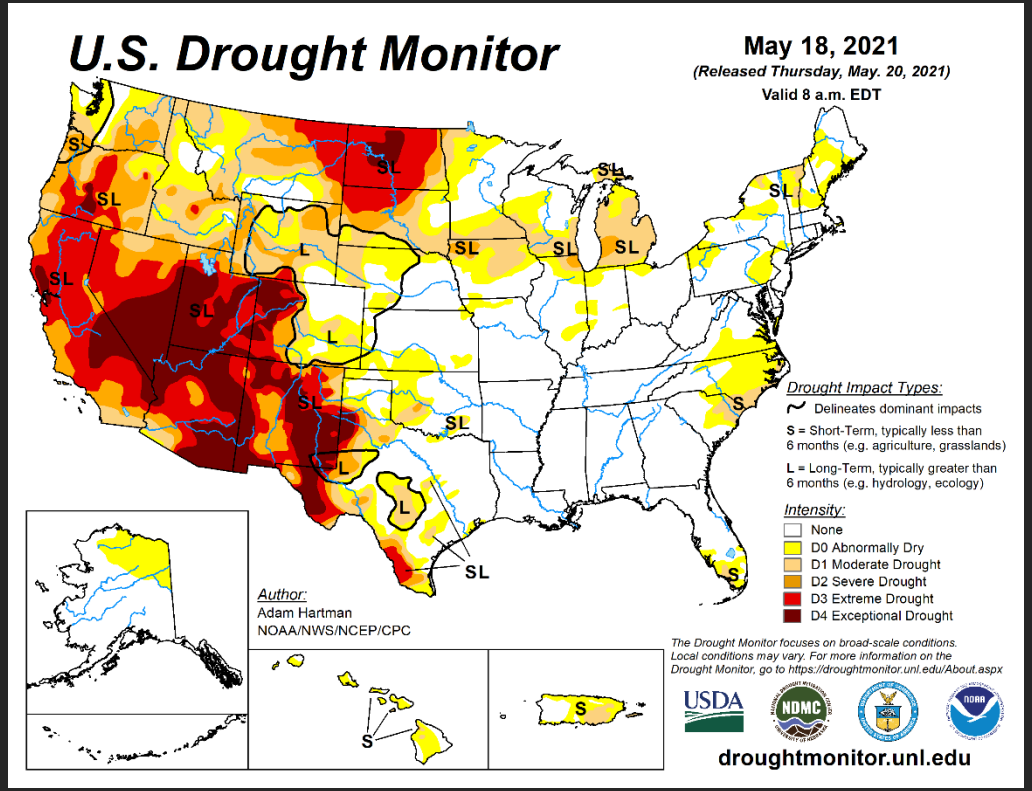
Detroit, MI

Soil Moisture



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

Drought



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

Extreme to exceptional drought (D3-D4) is prominent over the southwestern CONUS and northern Plains. Moderate to severe drought (D1-D2) is present across parts of the Great Lakes region, including much of lower MI. Most of southeast MI is between 2 and 6 inches below normal rainfall for the January 1 to May 24 period.

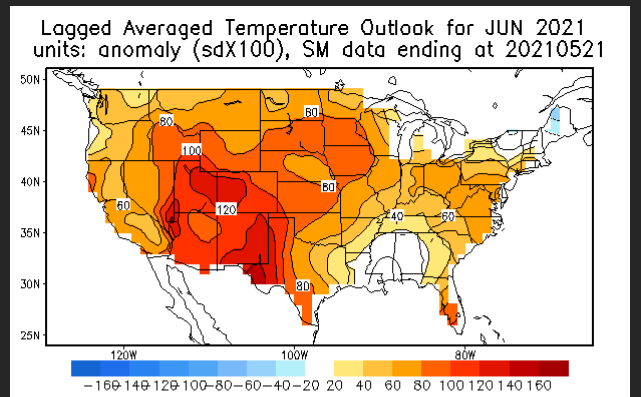
2021 Summer Outlook for Southeast Michigan

CPC Soil Moisture Analogs

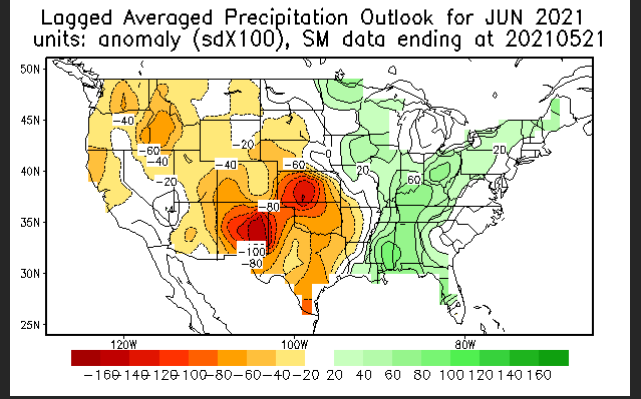
Weather Forecast Office
Detroit, MI

June

Temperature



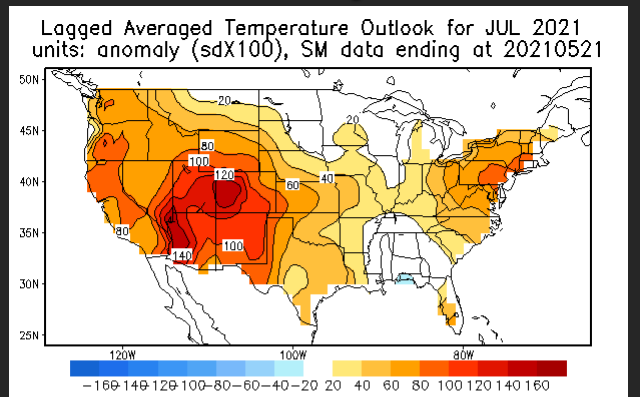
Precipitation



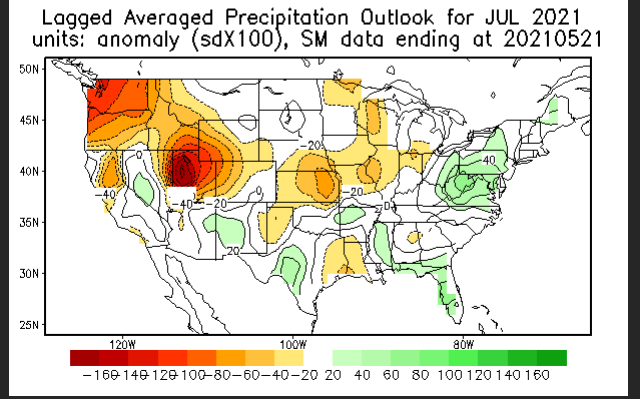
https://www.cpc.ncep.noaa.gov/soilmst/img/cas_pt_mon.lead1.gif

July

Temperature



Precipitation



https://www.cpc.ncep.noaa.gov/soilmst/img/cas_pt_mon.lead2.gif

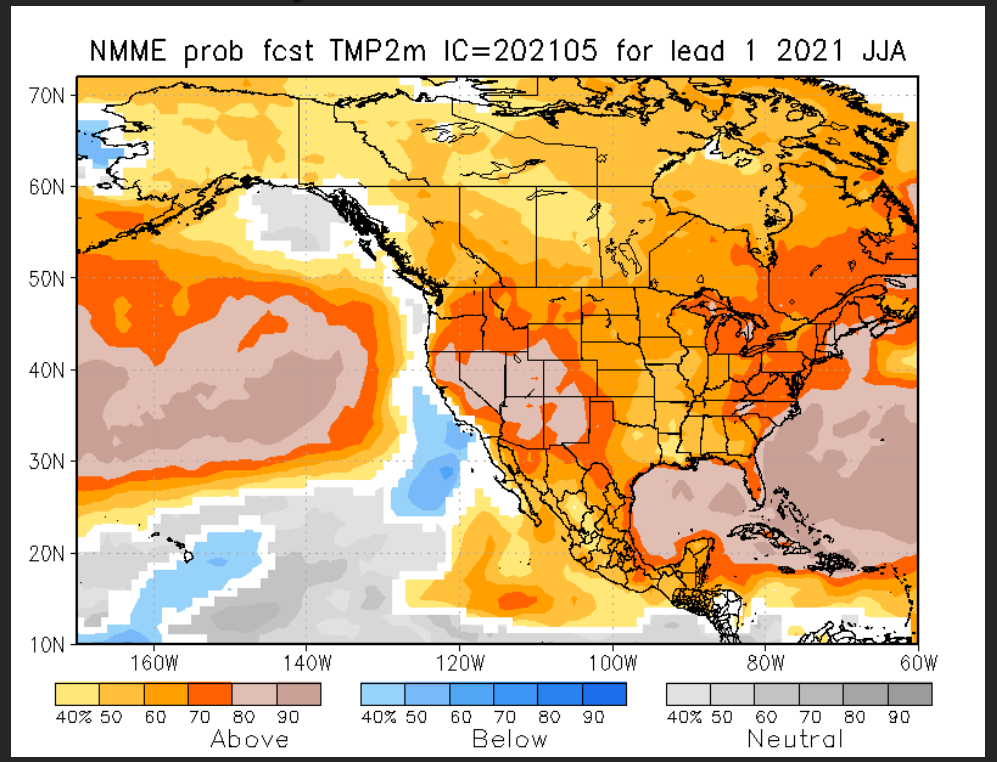
Soil moisture/drought has predictive value leading into the summer, and CPC soil moisture analogs provide a depiction of how summers with similar antecedent conditions evolved. Analogs (above) with similar soil moisture conditions to this year generally showed warmer than normal conditions for most of the CONUS and wetter than normal conditions for parts of the eastern CONUS for the early to middle part of the summer.

2021 Summer Outlook for Southeast Michigan

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

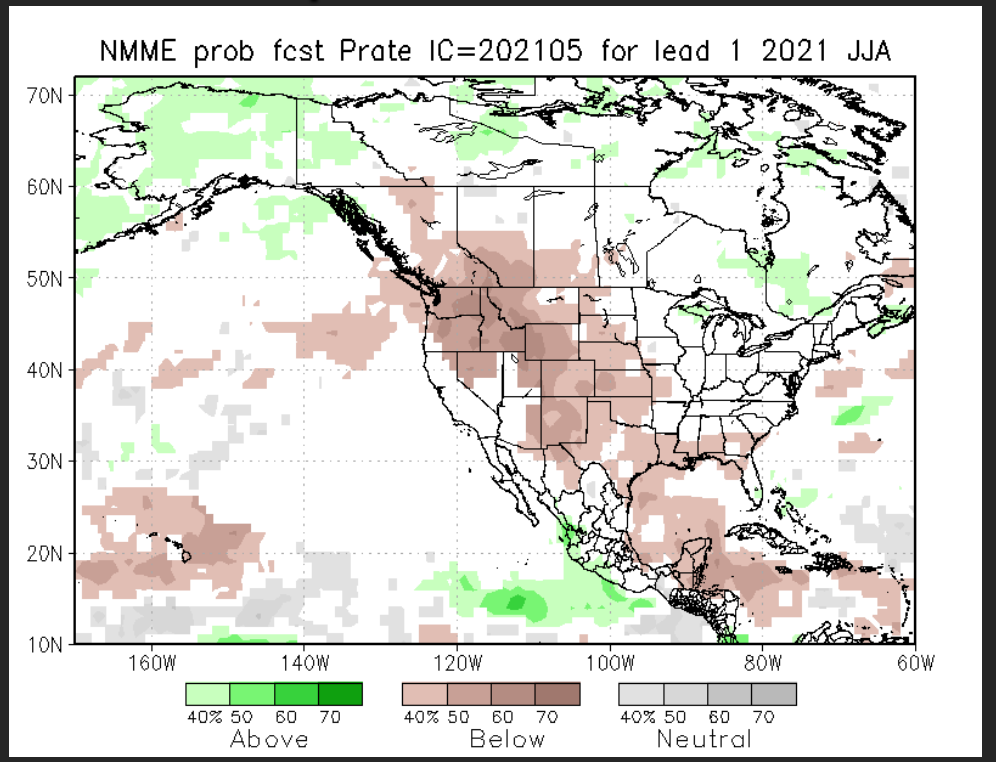
Weather Forecast Office
Detroit, MI

Summer 2021
Temperature Probabilities



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

Summer 2021
Precipitation Probabilities



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

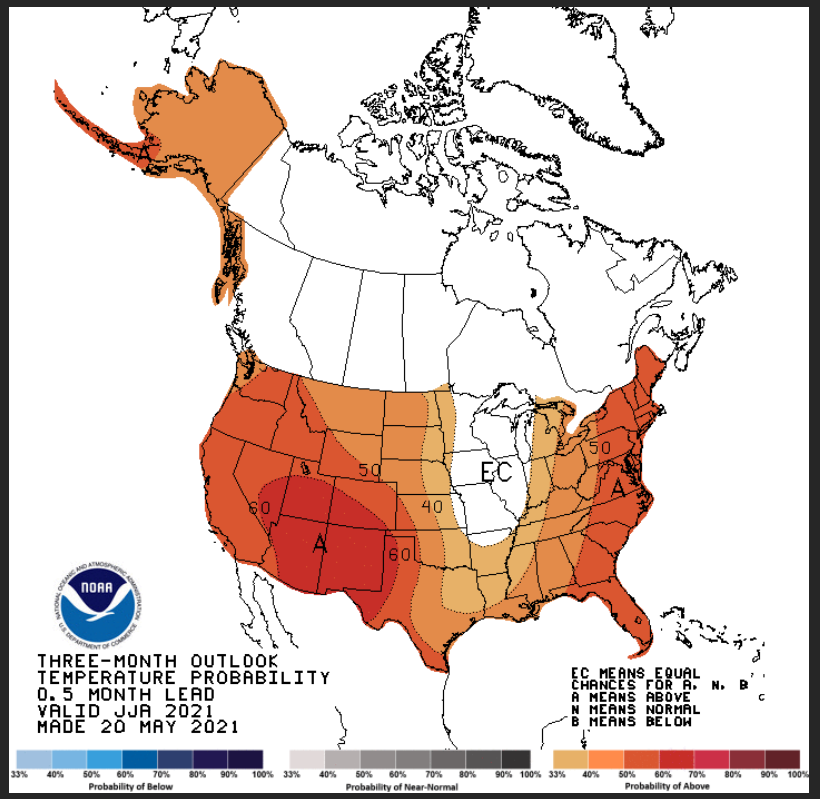
The NMME is the averaged output of several climate models and is another tool to make seasonal-scale predictions. Recent output (above) generally agrees with the soil moisture analogs that suggest warmer than normal conditions for much of the CONUS and drier than normal conditions over the western CONUS this summer. Temperature output from the NMME generally has higher skill than that for precip for this period.

2021 Summer Outlook for Southeast Michigan

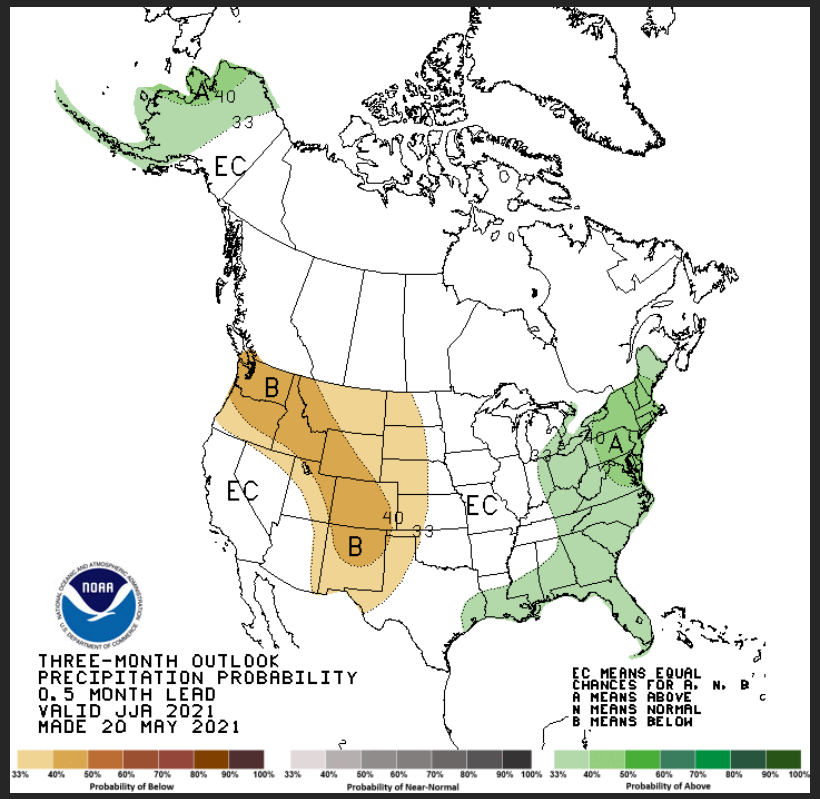
Official CPC Summer Outlook

Weather Forecast Office
Detroit, MI

Temperature



Precipitation



In CPC's official summer outlook, southeast MI falls within better chances for **above normal temperatures** and **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. The new 1991-2020 climate normals are now factored into the outlooks.

2021 Summer Outlook for Southeast Michigan

Summer Records and Trivia

Weather Forecast Office
Detroit, MI

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