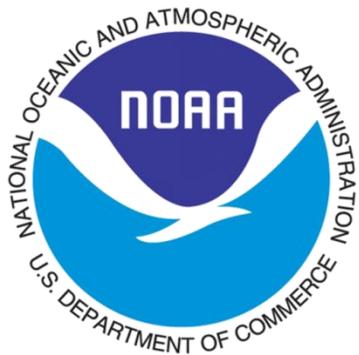


2021 heat season:
CPC forecasts, NWS heat advisories and met observations

Evan M Oswald (CPC/Innovim)

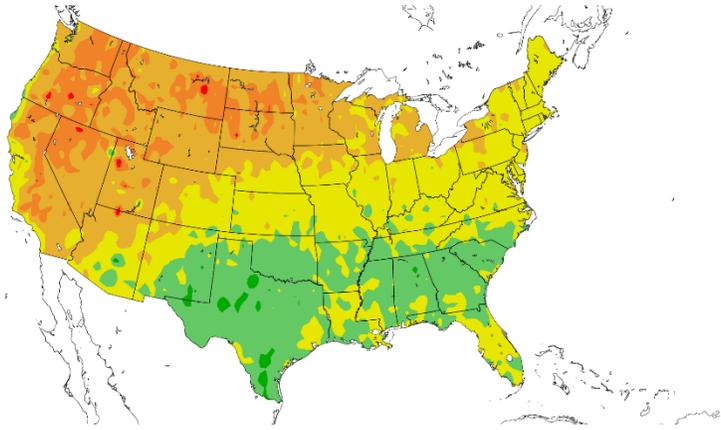
Jon Gottschalck (CPC/NOAA)

10/27/21



2021 heat season synopsis

Departure from Normal Temperature (F)
6/1/2021 - 8/31/2021



Generated 9/20/2021 at HPRCC using provisional data.

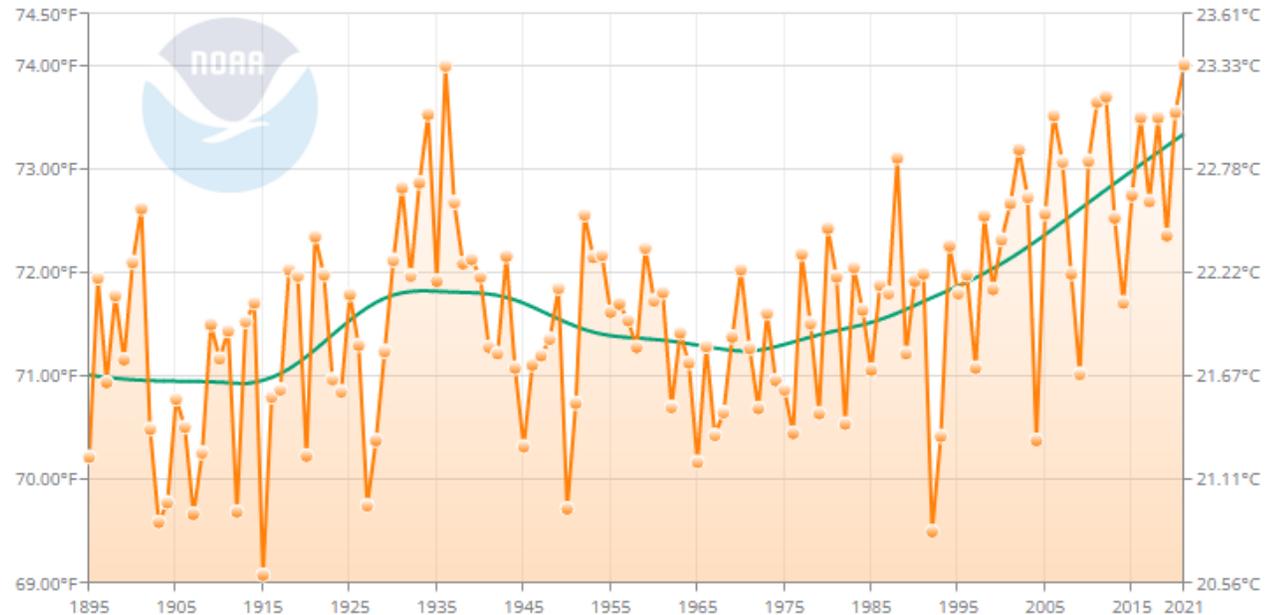
NOM Regional Climate Centers

Extreme Heat Melts Streetcar Cable in Portland, Service Suspended for Days

BY ZOE KALEN HILL ON 6/28/21 AT 2:52 PM EDT

Newsweek.com

Contiguous U.S. Average Temperature
June–August



July 12, 2021

9:45 AM EDT

Last Updated 4 months ago

ago

Reuters.com

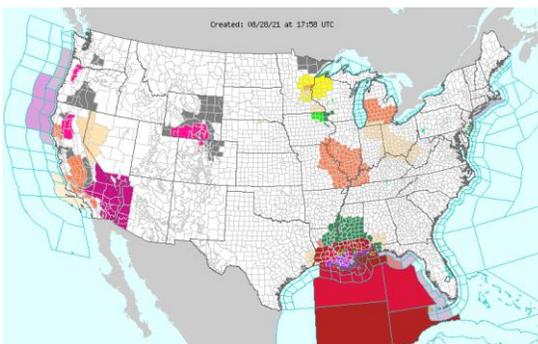
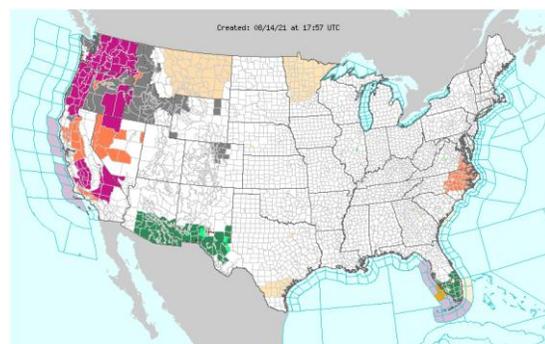
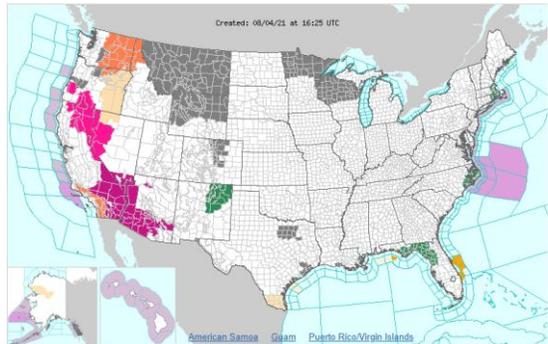
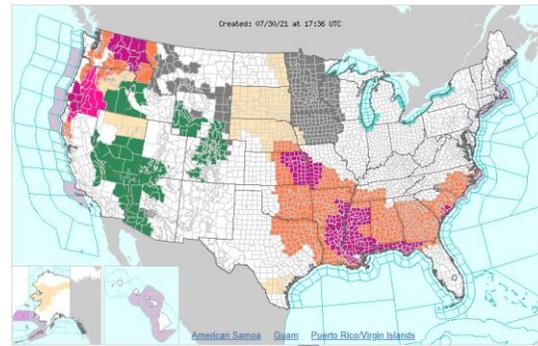
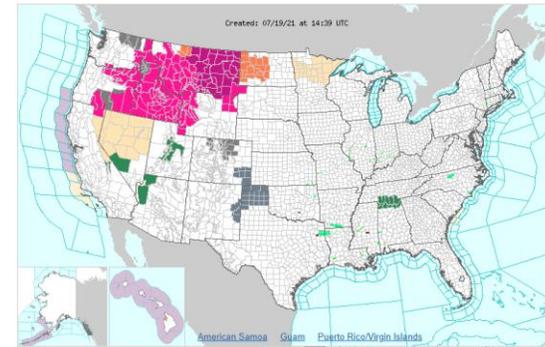
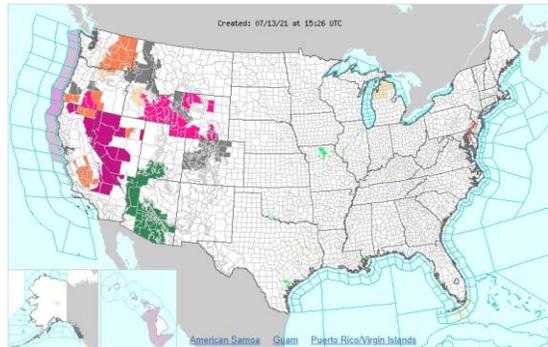
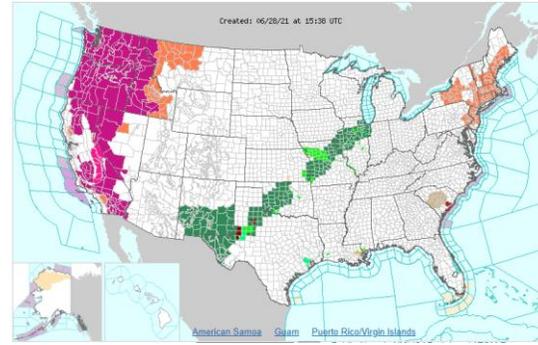
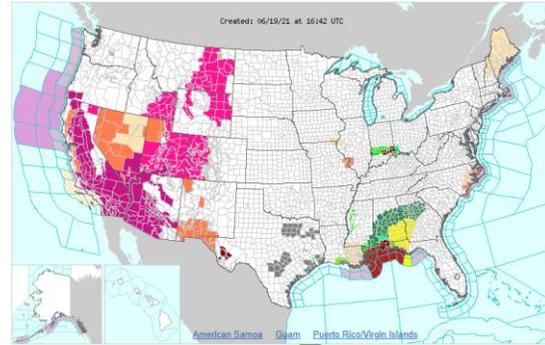
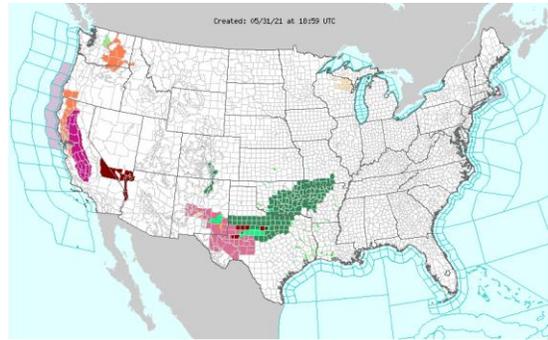
6 minute read

United States

'Wither away and die:' U.S. Pacific Northwest heat wave bakes wheat, fruit crops

By Julie Ingwersen

2021 Heat in West/Northwest recap

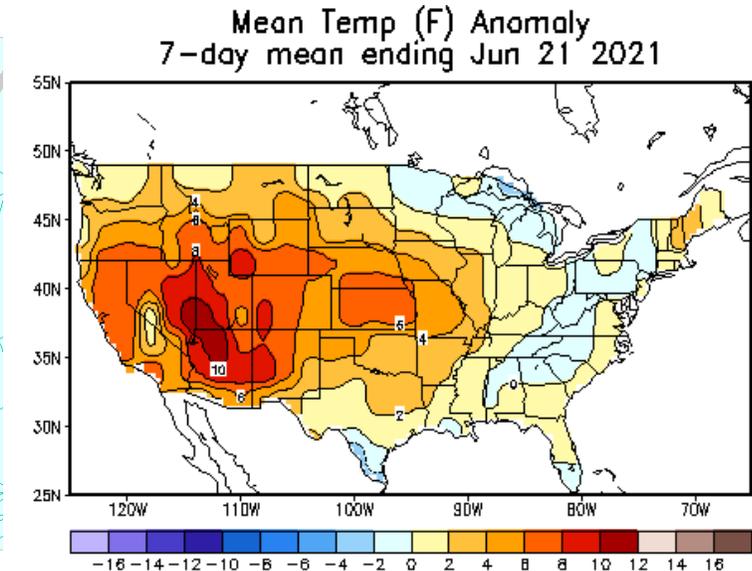
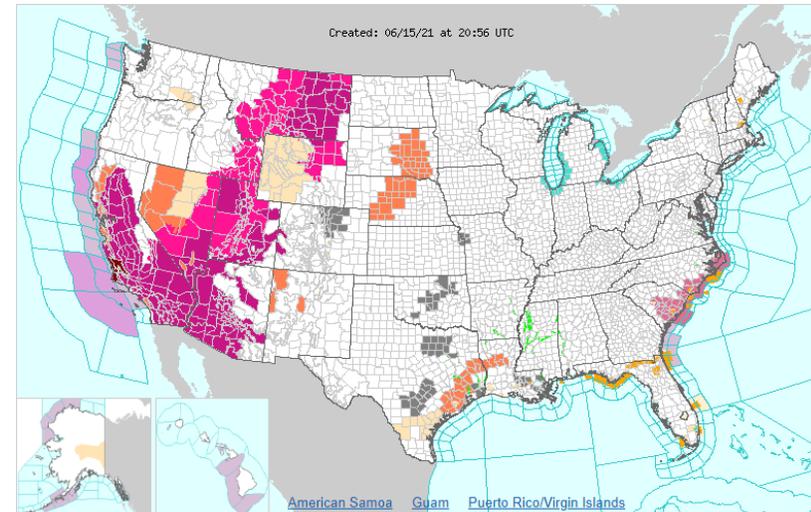
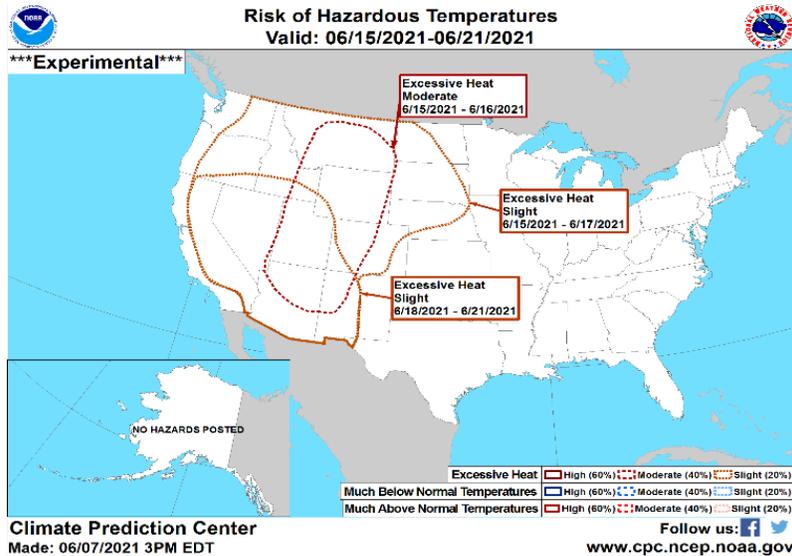
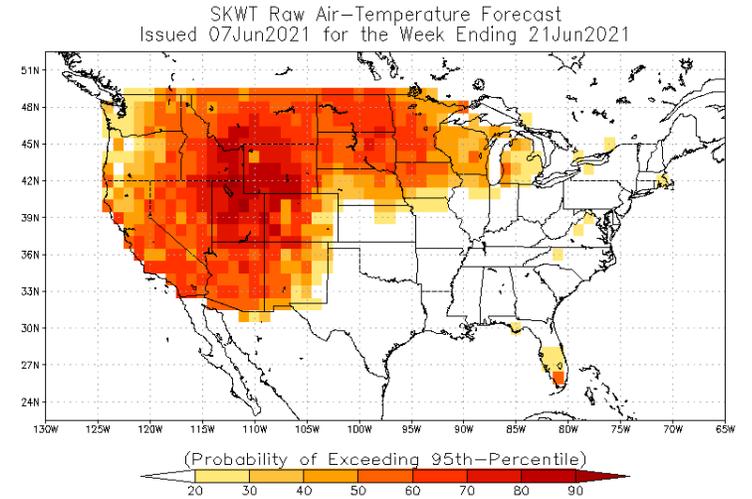
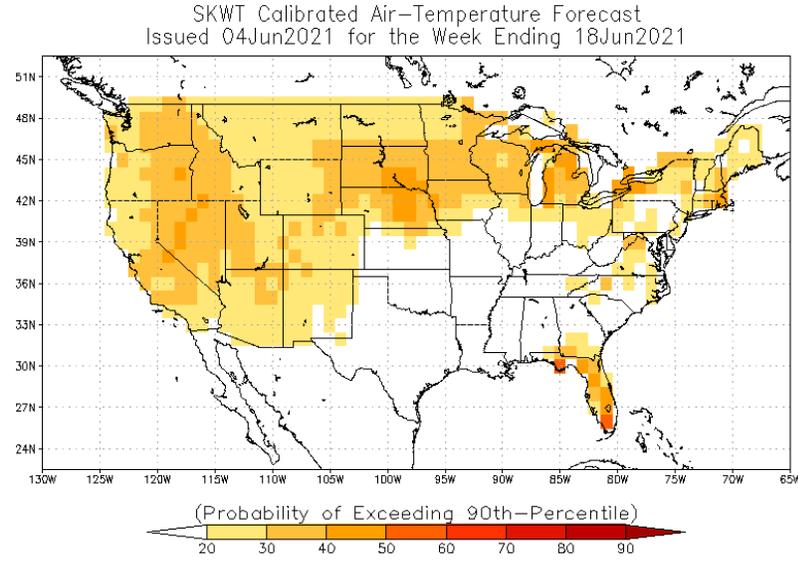
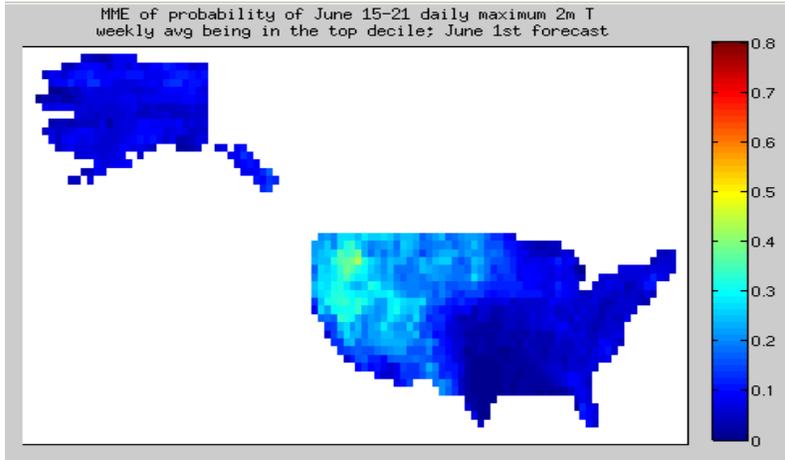


Heat in Northern Plains + Western US

28-May	24-Jun	12-Jul	1-Aug
29-May	25-Jun	13-Jul	2-Aug
30-May	26-Jun	3-Aug
1-Jun	27-Jun	16-Jul	4-Aug
2-Jun	28-Jun	17-Jul
3-Jun	29-Jun	18-Jul	10-Aug
.....	30-Jun	19-Jul	11-Aug
13-Jun	1-Jul	20-Jul	12-Aug
14-Jun	2-Jul	21-Jul	13-Aug
15-Jun	3-Jul	22-Jul	14-Aug
16-Jun	4-Jul	15-Aug
17-Jun	5-Jul	24-Jul	16-Aug
18-Jun	6-Jul	25-Jul
19-Jun	7-Jul	26-Jul	28-Aug
20-Jun	8-Jul	27-Jul	29-Aug
21-Jun	9-Jul	28-Jul	
22-Jun*	10-Jul	29-Jul	
23-Jun*	11-Jul	30-Jul	

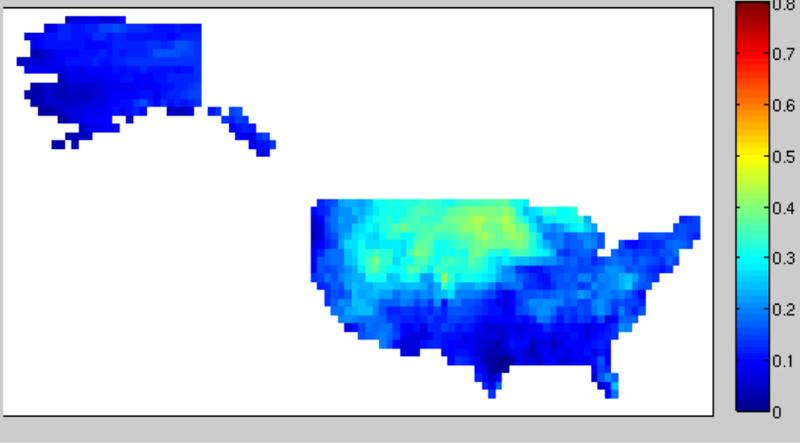
* hot temperatures but no heat advisory

Forecasting the onset: the June 13-July 13 episode

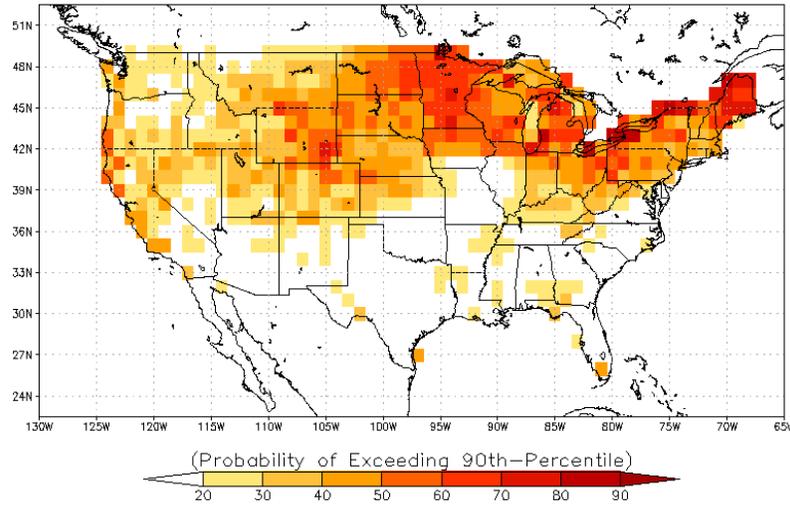


Forecasting no heat: the Aug 17- Aug 27 non-episode

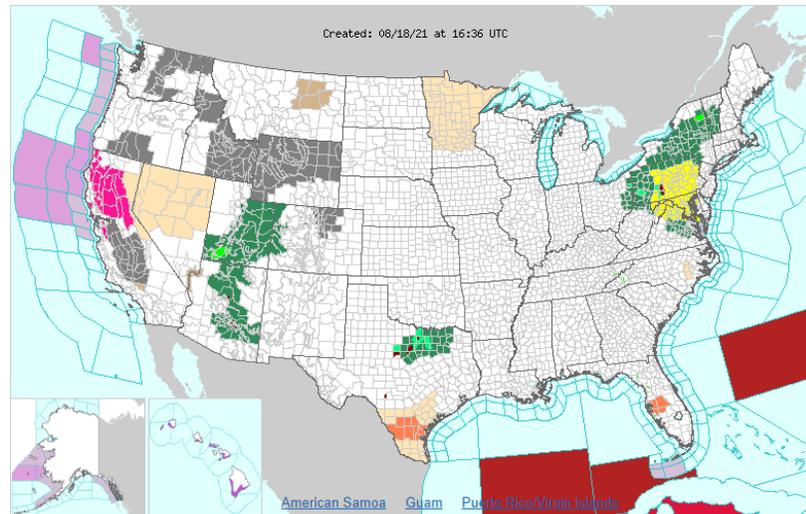
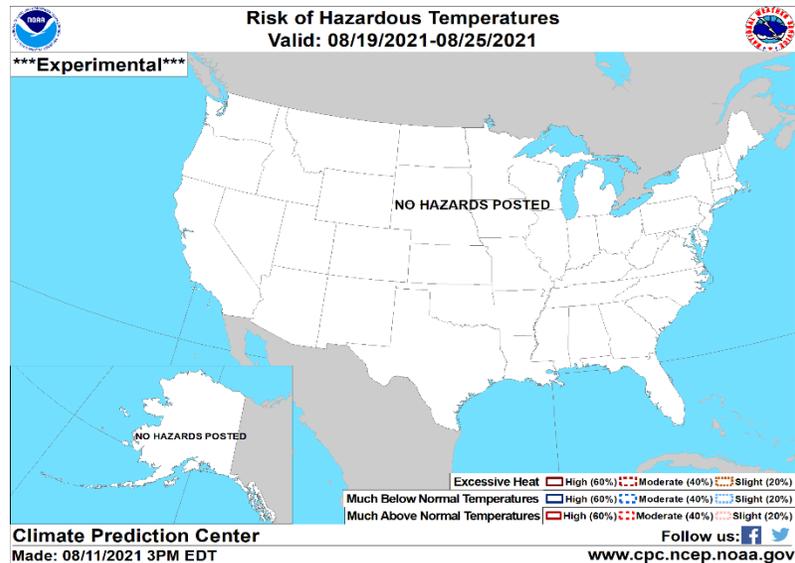
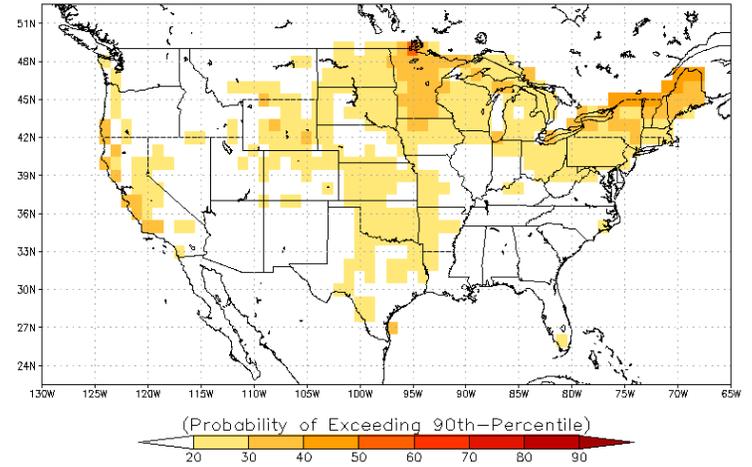
MME of probability of Aug 18-24 daily maximum 2m T weekly avg being in the top decile; Aug 3rd forecast



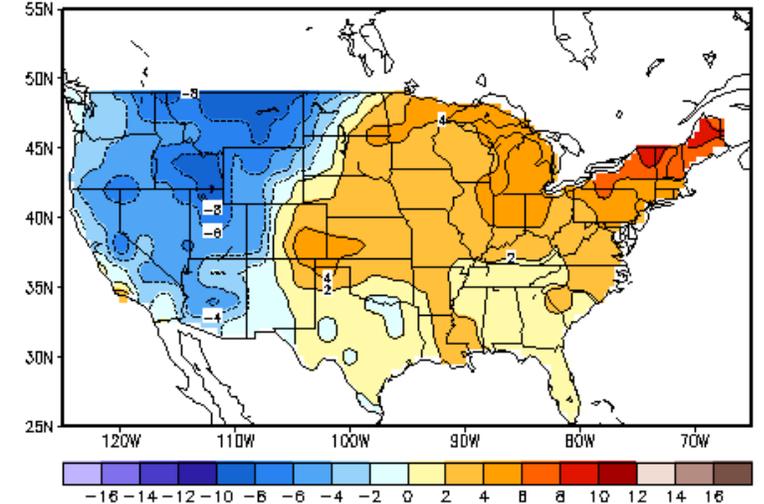
SKWT Raw Air-Temperature Forecast Issued 10Aug2021 for the Week Ending 24Aug2021



SKWT Calibrated Air-Temperature Forecast Issued 12Aug2021 for the Week Ending 26Aug2021



Mean Temp (F) Anomaly 7-day mean ending Aug 24 2021



Quantified skill: Skillscores of wk 3-4 forecast tools

*Realtime forecasts of having 3 or more days in the week 3-4 period
With 3 or more dates with the daily mean reaching the 92.5th percentile*

May 1-Sep 15th, 2021. US (incl AK)

	AUC-ROC (0.5->1)	Max. Sedi (0->1)
CFS (dynamical)	0.61-0.62 (22-24%)	0.27-0.31 (27-31%)
GEFSv12 (dynamical)	0.66-0.72 (32-44%)	0.32-0.48 (32-48%)
ECMWF (dynamical)	0.62-0.65 (24-30%)	0.32-0.33 (32-33%)
Soil Moisture (statistical)	0.64-0.66 (28-32%)	0.24-0.28 (24-28%)

Physical mechanism behind 2021 heat wave:

Circumglobal wavenumber 4 pattern

