Global Heat Hazards Outlooks

Date of Issuance: 09 June 2025

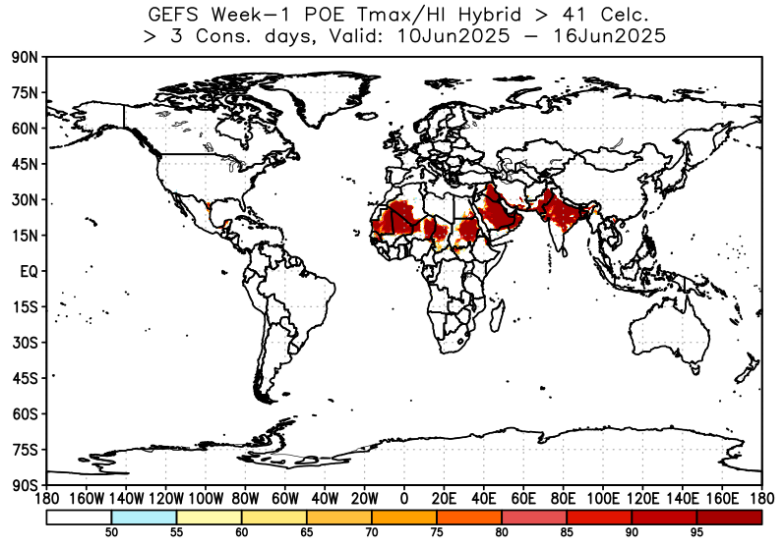
Week-1 Valid : 10 Jun 2025 – 16 Jun 2025

Week-2 Valid: 17 Jun 2025 – 23 Jun 2025

Numerical Weather Prediction Model: NCEP GEFS

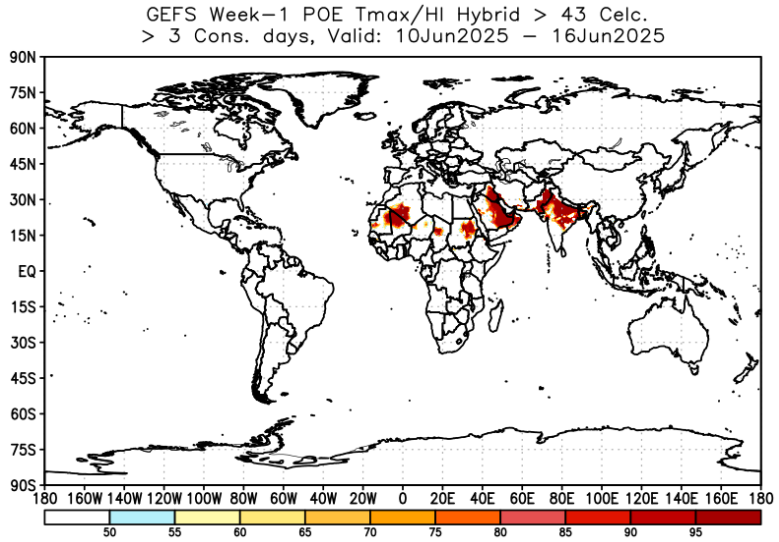
GEFS Week-1 HI/Tmax Hybrid POE with Respect to Fixed Thresholds

>41ºC & > 3 Consc. Days



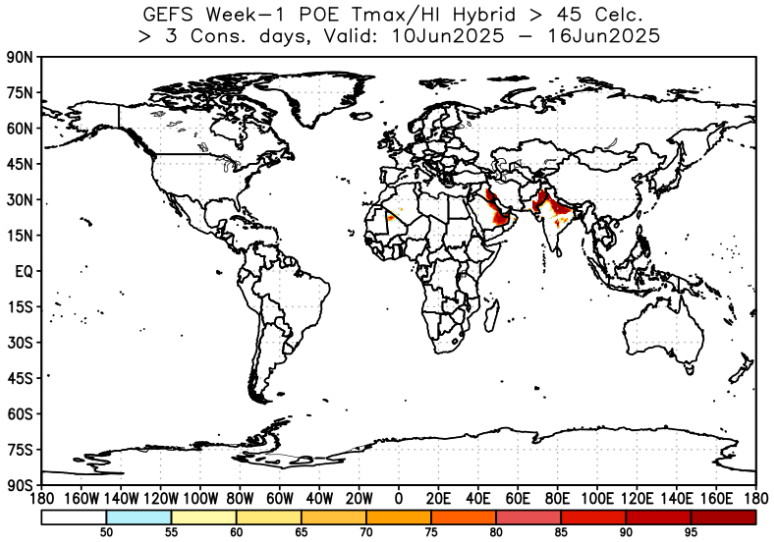
https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_41.png

>43ºC & > 3 Consc. Days



https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_43.png

>45ºC & > 3 Consc. Days

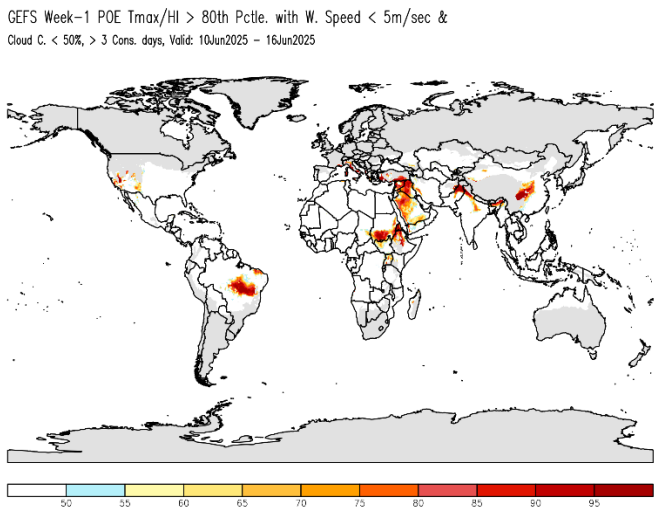


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_45.png

- Probabilities exceed 85% for the hybrid index to exceed 41ºC for at least three consecutive days across the Sahel, Niger. Chad, Sudan, Saudi Arabia, Iraq, Oman, Pakistan and northern/eastern/central India.

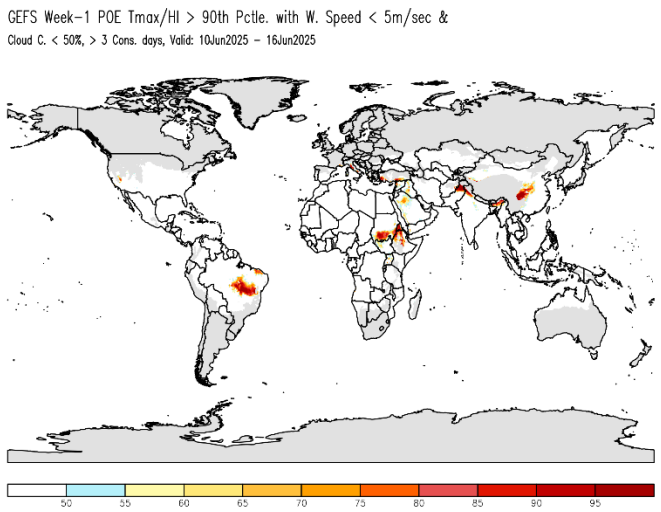
GEFS Week-1 POE, Tmax/HI with Calmer Wind (< 5m s-1) and less Cloud Cover (< 50%)

>80th & > 3 Consc. Days



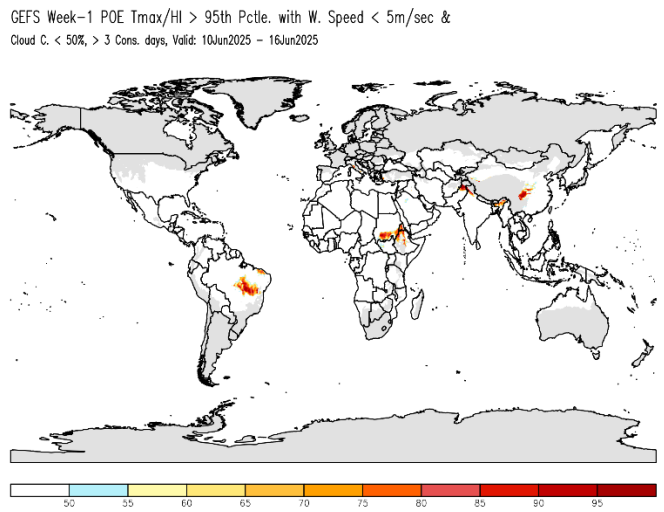
https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week1_glb_prob_80.gif

>90th & > 3 Consc. Days



https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week1_glb_prob_90.gif

>95th & > 3 Consc. Days

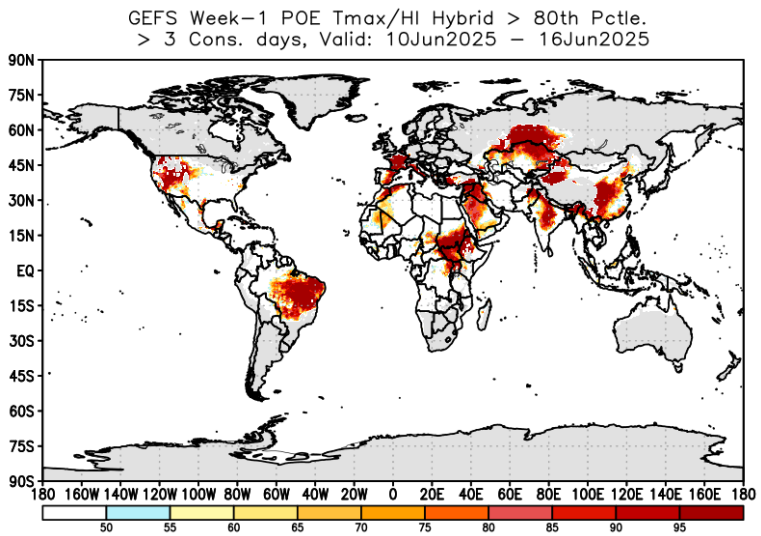


https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week1_glb_prob_95.gif

- Probabilities exceed 70% for the hybrid index with calmer wind and less cloud cover to exceed the 80th percentile for at least three consecutive days, over scattered pockets of western US, central/eastern boarder of Brazil, southern Sudan, northern Ethiopia, Saudi Arabia, Yamen, Syria, Iraq, northern Pakistan and India, Bangladesh, and northern/eastern China.

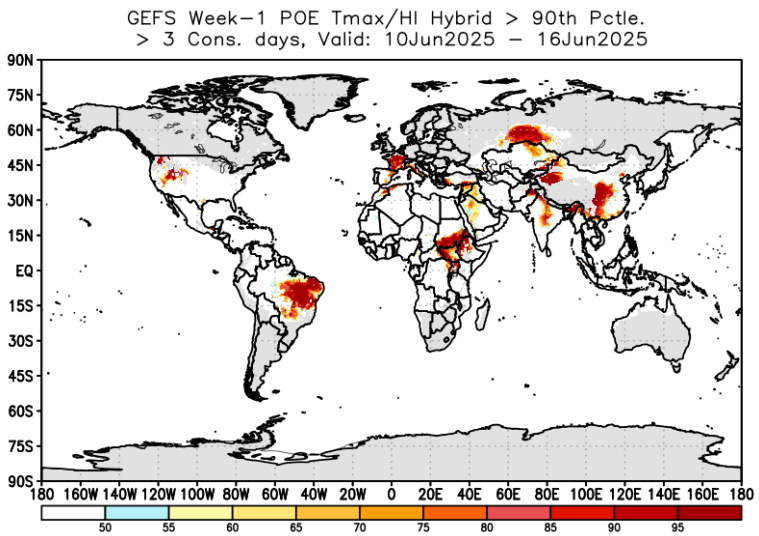
GEFS Week-1 HI/Tmax Hybrid POE with Respect to Percentile Climo. Thresholds

>80th & > 3 Consc. Days



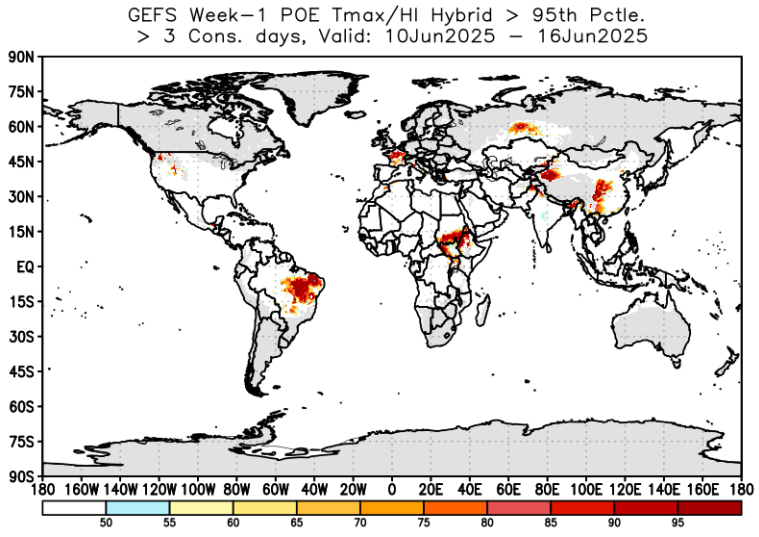
https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_80.png

>90th & > 3 Consc. Days



https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_90.png

>95th & > 3 Consc. Days

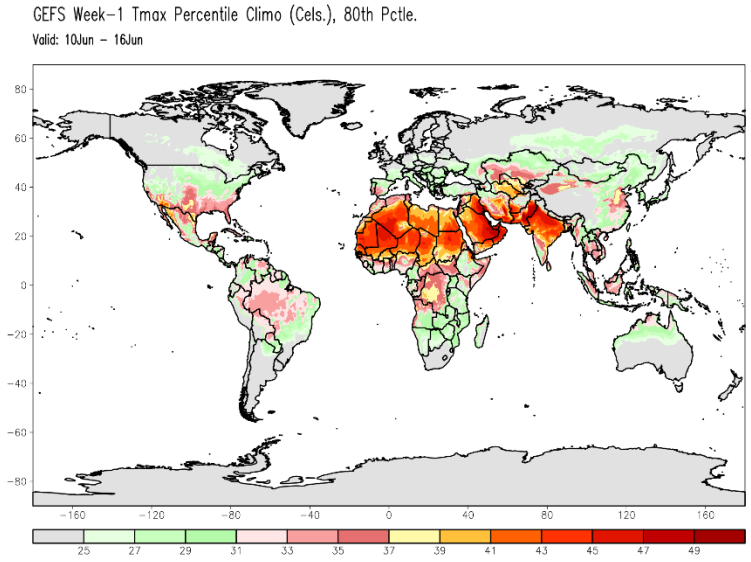


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_95.png

- Probabilities exceed 90% for the hybrid index to exceed the 80th percentile for at least three consecutive days , in western/central/southern United States, , some scattered parts of Mexico/Central America, central/eastern Brazil, Spain, France, northern Mali, northern Mauritanian, South Sudan, southern Sudan, western Ethiopia, Saudi Arabia, Iraq, Syria, eastern Turkey, central Asia, southern Russia, northern Pakistan, central/northern India, western/eastern China and southeast Asia.

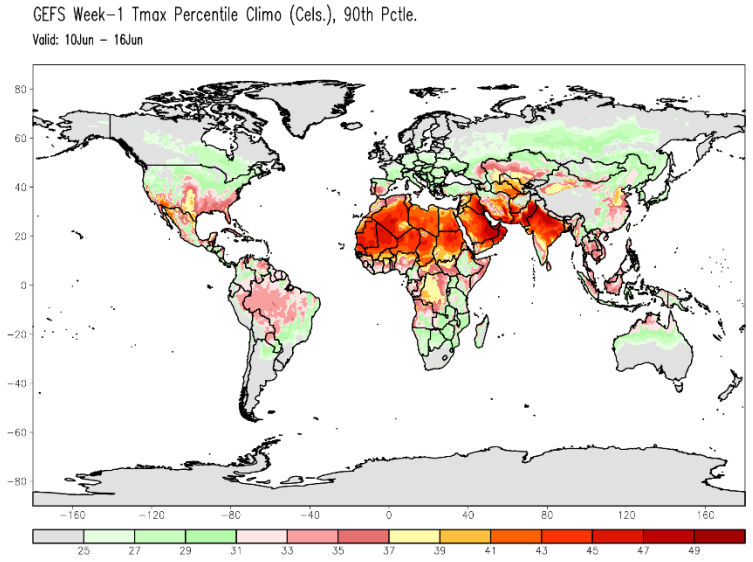
GEFS Week-1 Tmax Percentile Climatology (°C)

Tmax 80th Percentile



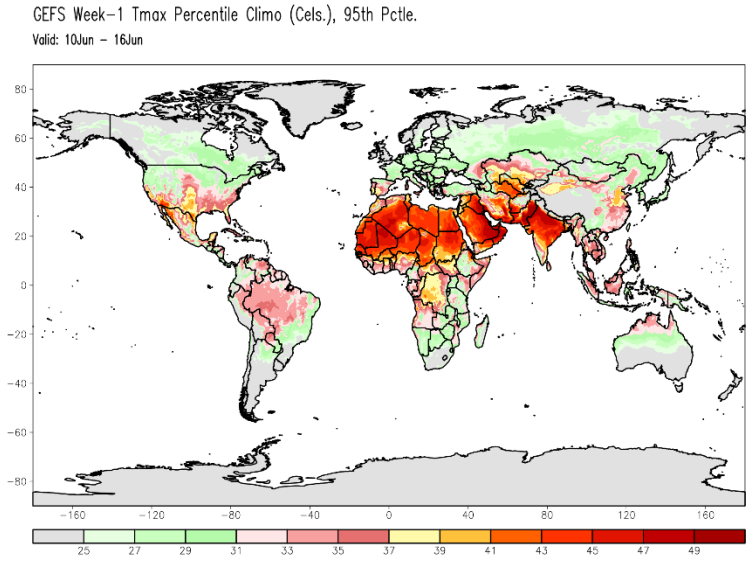
https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week1_glb_clm_80.gif

Tmax 90th Percentile



https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week1_glb_clm_90.gif

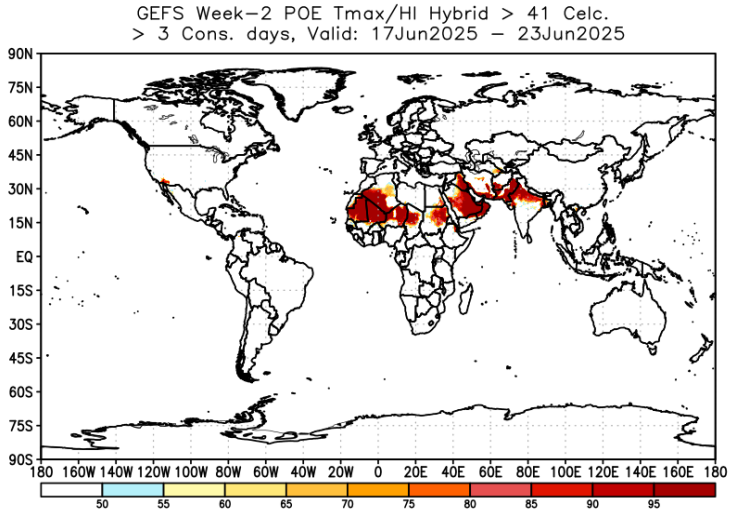
Tmax 95th Percentile



https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week1_glb_clm_95.gif

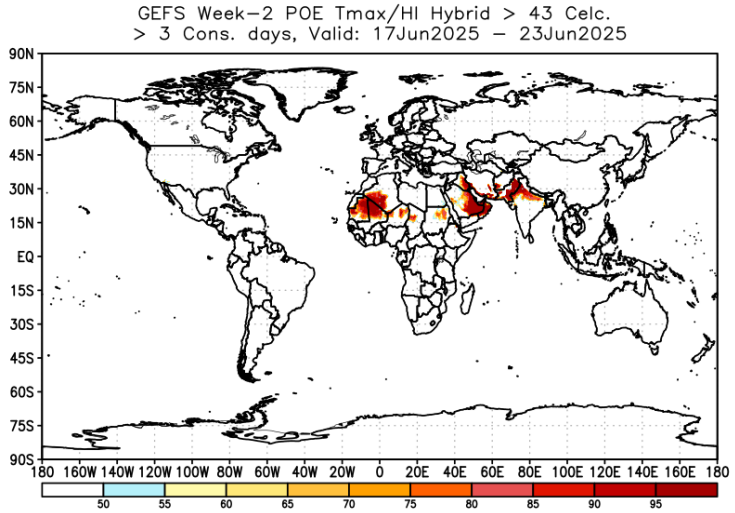
GEFS Week-2 HI/Tmax Hybrid POE with Respect to Fixed Thresholds

>41ºC & > 3 Consc. Days



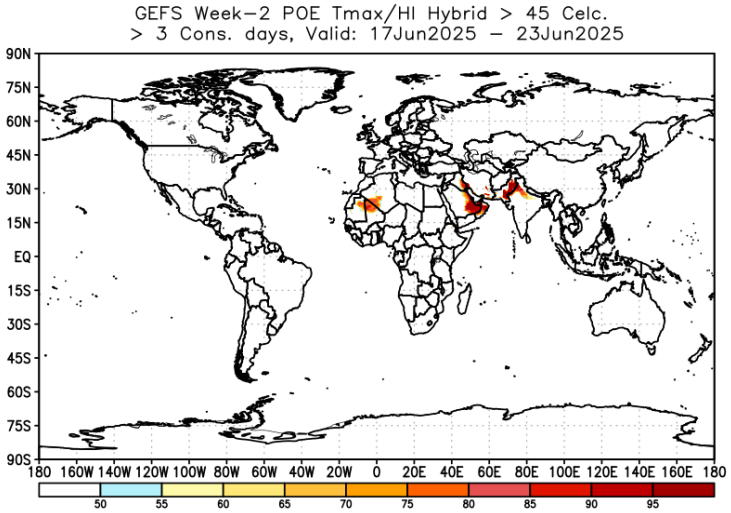
https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_41.png

>43ºC & > 3 Consc. Days



https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_43.png

>45ºC & > 3 Consc. Days

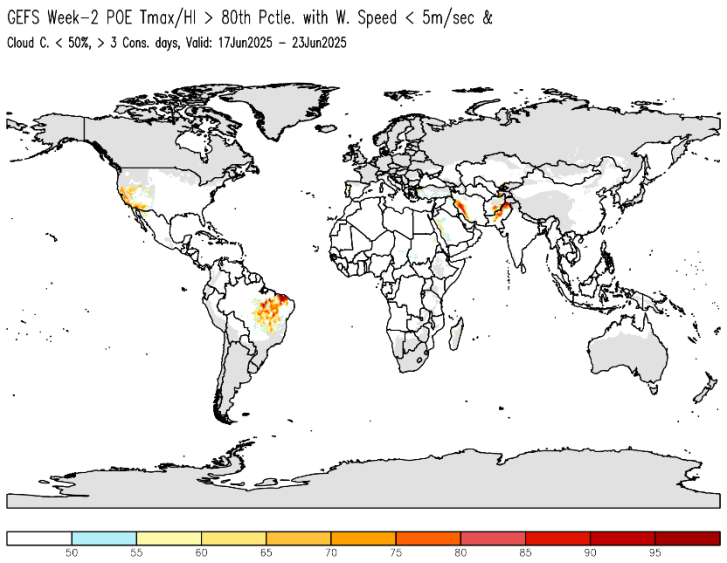


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_45.png

- Probabilities exceed 90% for the hybrid index to exceed the 80th percentile for at least three consecutive days, in the southwestern US, Mauritania, southern Algeria, Mali, Niger, Chad, South Sudan, Saudi Arabia, Oman, Iraq, southern Iran, southern Afghanistan, northern Pakistan, north/eastern India and Bangladesh.

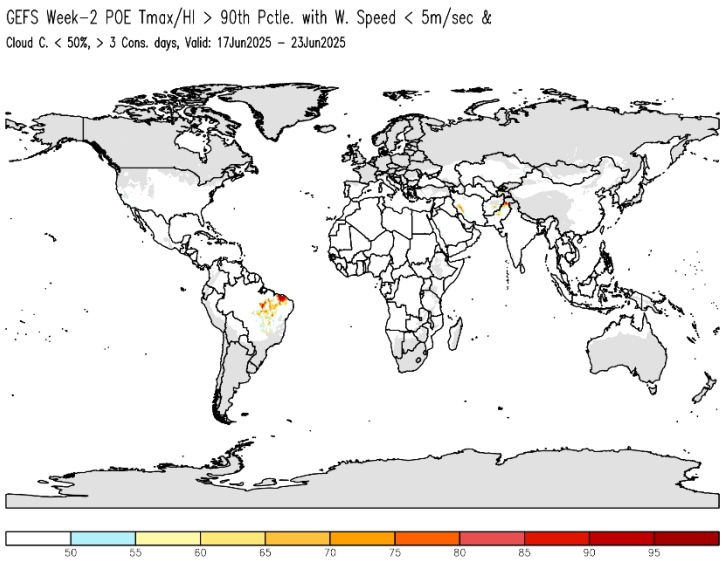
GEFS Week-2 POE, Tmax/HI with Calmer Wind (< 5m s-1) and less Cloud Cover (< 50%)

>80th & > 3 Consc. Davs



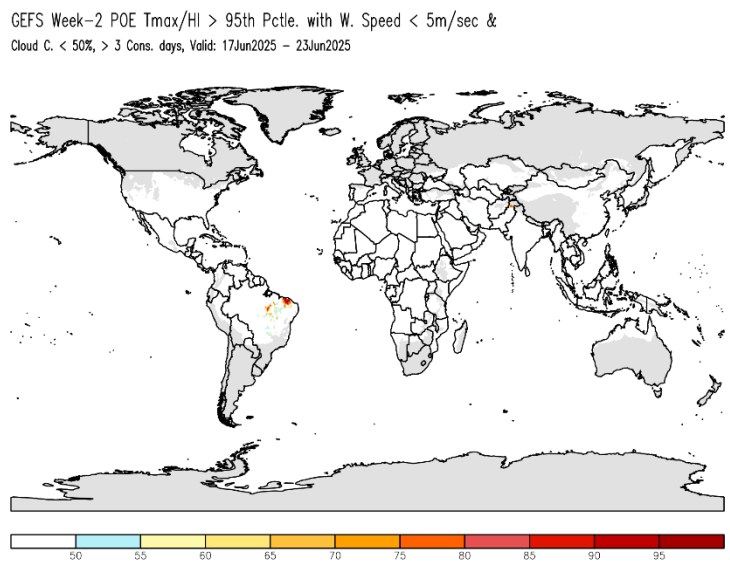
https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week2_glb_prob_80.gif

>90th & > 3 Consc. Davs



https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week2_glb_prob_90.gif

>95th & > 3 Consc. Days

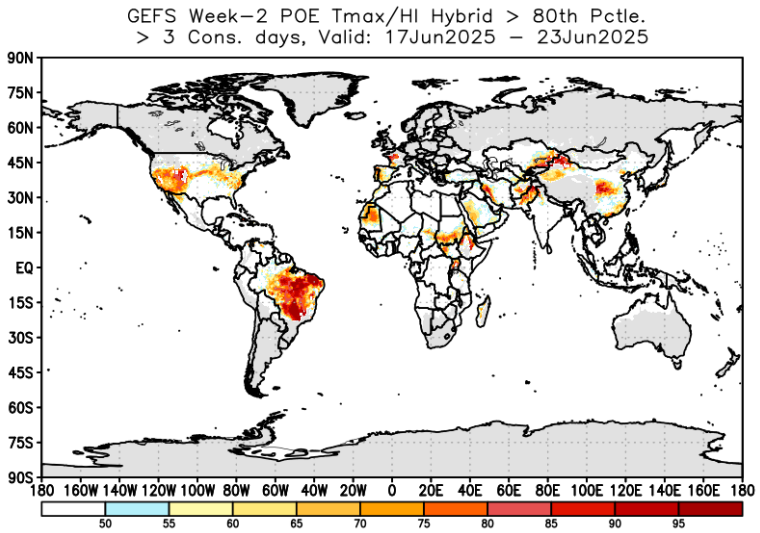


https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week2_glb_prob_95.gif

- Probabilities exceed 70% for the hybrid index with calmer wind and less cloud cover to exceed the 80th percentile for at least three consecutive days, over western USA, central/eastern Brazil, western Saudi Arabia, northern Pakistan and southern Afghanistan.

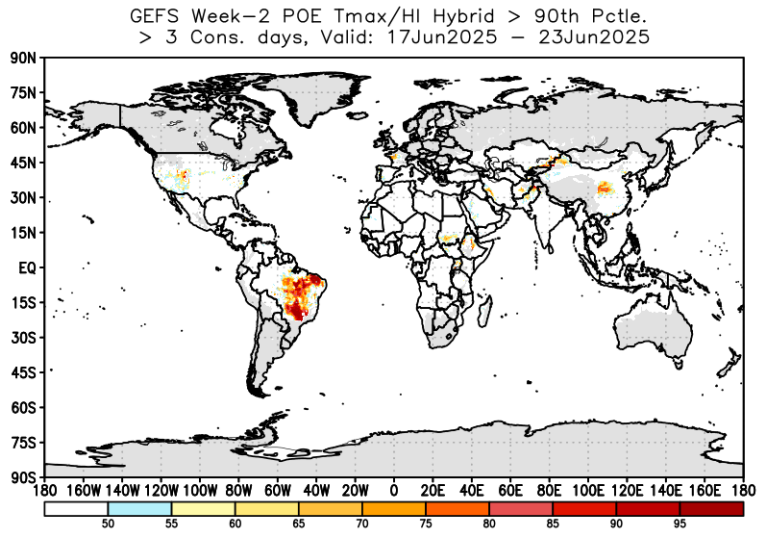
GEFS Week-2 HI/Tmax Hybrid POE with Respect to Percentile Climo. Thresholds

>80th & > 3 Consc. Days



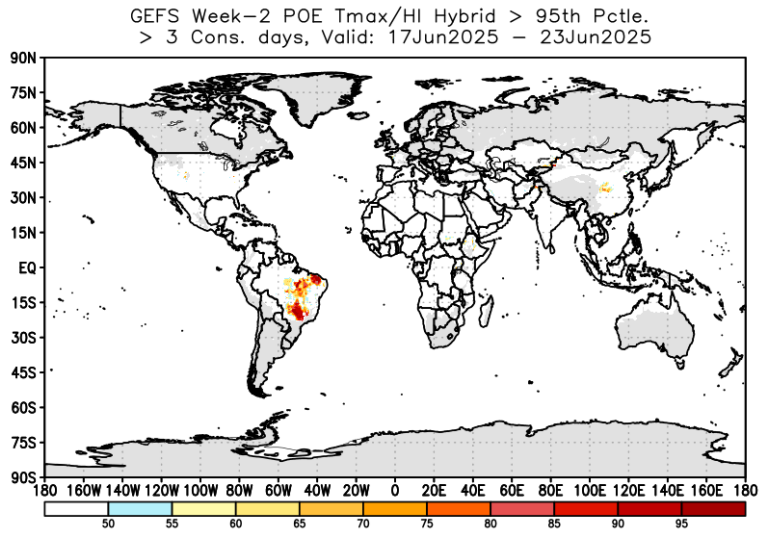
https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_80.png

>90th & > 3 Consc. Days



https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_90.png

>95th & > 3 Consc. Days

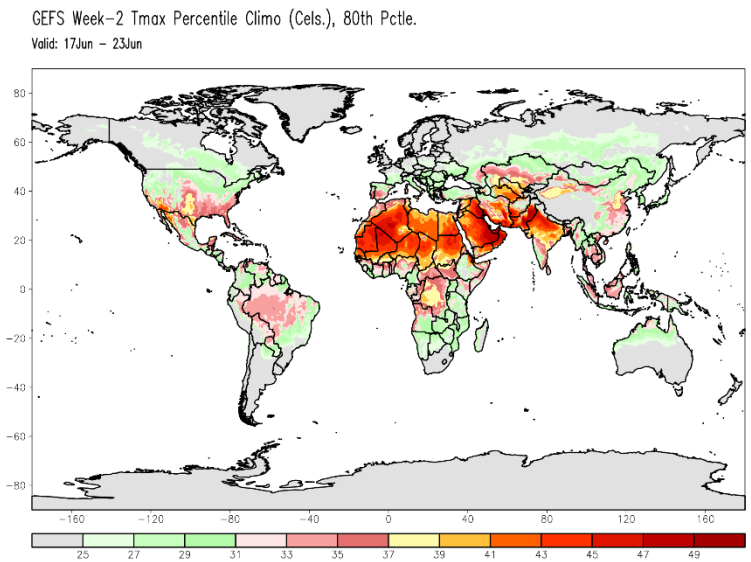


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_95.png

- There is an increased chance (> 80%) for the hybrid index to exceed the 80th percentile for at least three consecutive days, in western/central/eastern USA, central/eastern Brazil, northern Venezuela, Spain, France, Mauritian, western Sahara, Sudan, Chad, northern Ethiopia, Saudi Arabia, Iraq, western Iran, central Afghanistan, northern Pakistan. Southern Central Asia and north/eastern China.

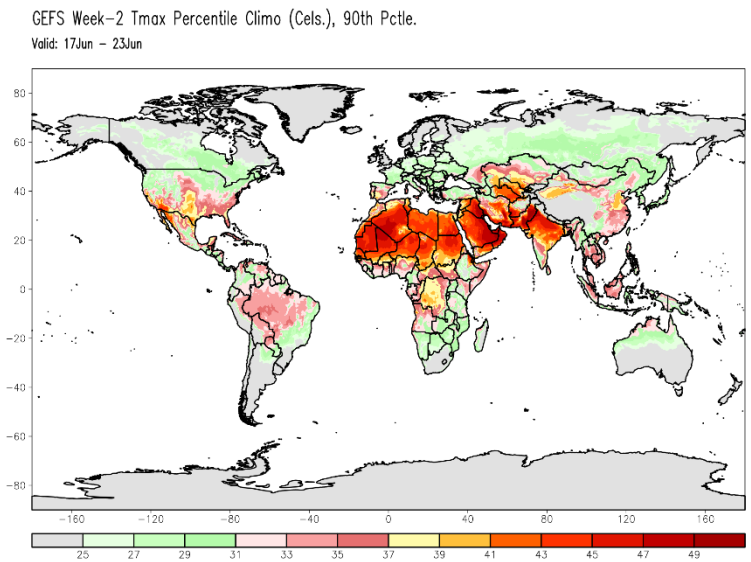
GEFS Week-2 Tmax Percentile Climatology (°C)

Tmax 80th Percentile



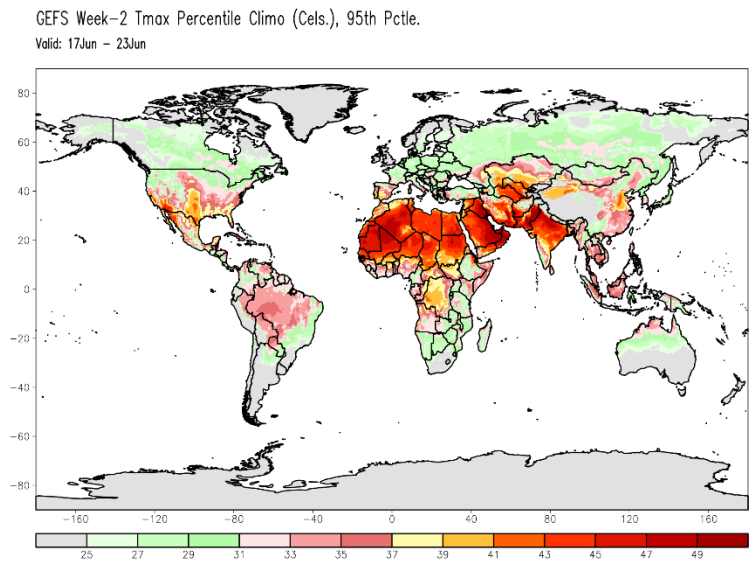
https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week2_glb_clm_80.gif

Tmax 90th Percentile

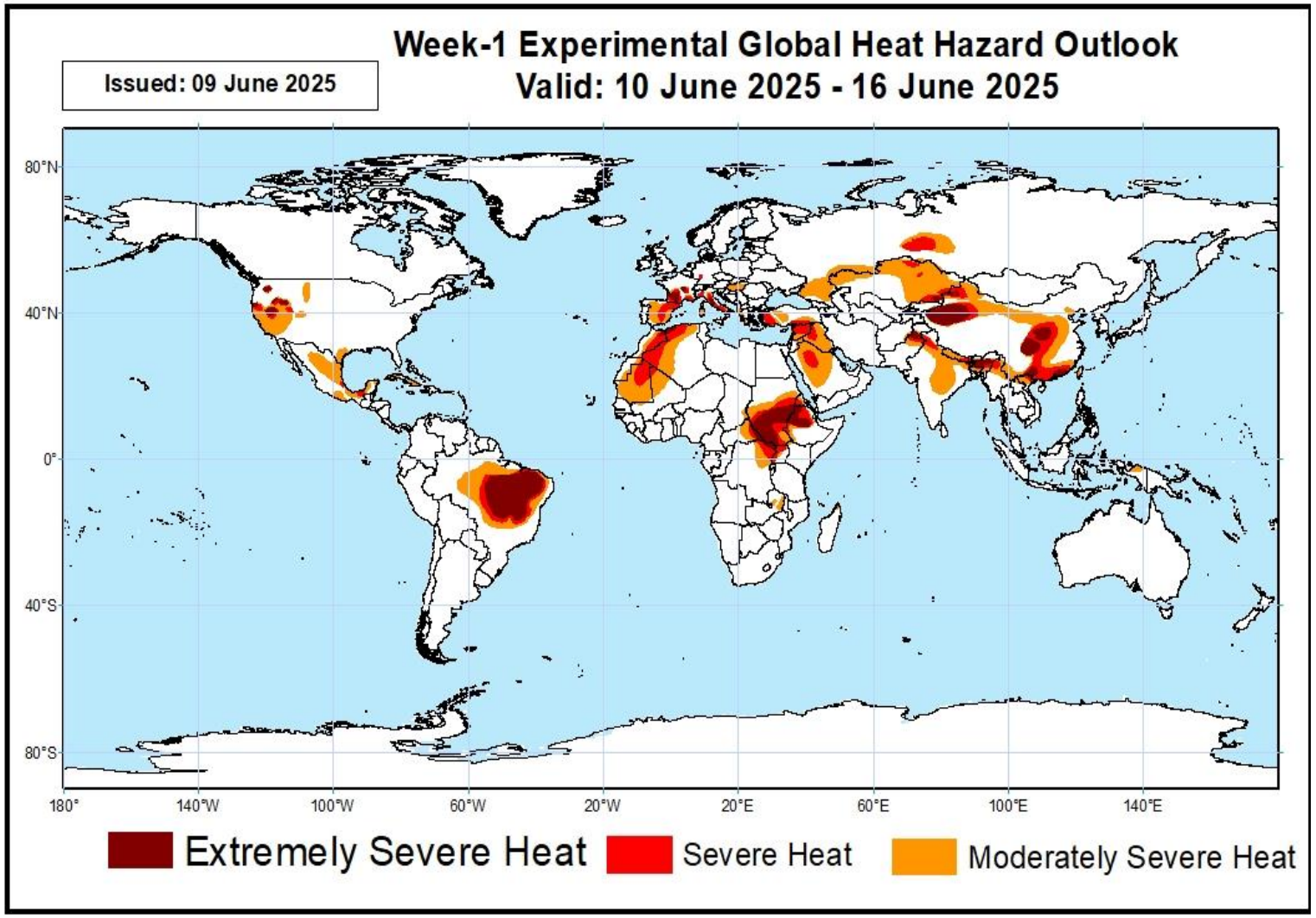


https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week2_glb_clm_90.gif

Tmax 95th Percentile



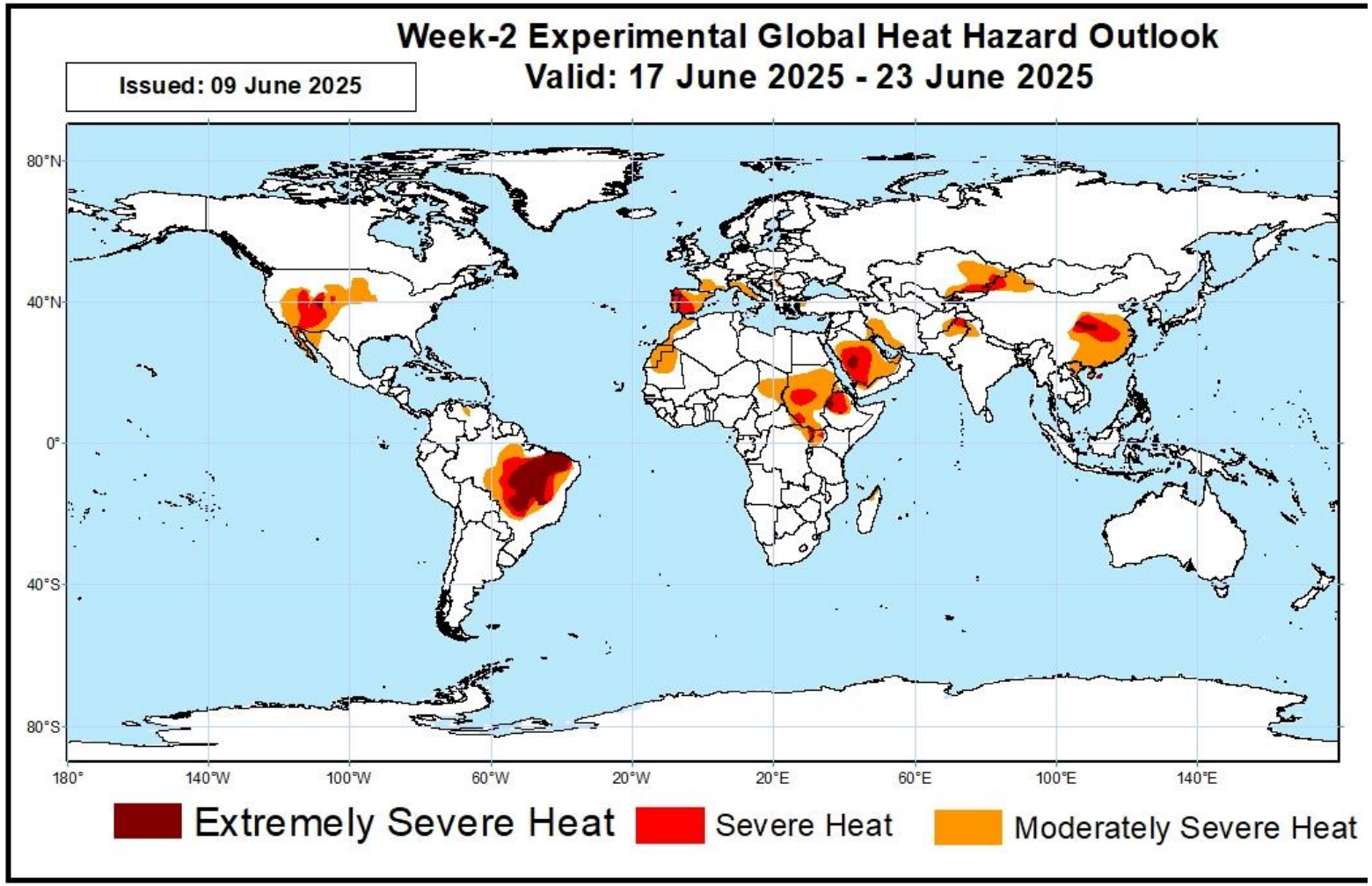
https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week2_glb_clm_95.gif



- There is an increased chance of *moderately severe heat over* western USA, eastern Mexico, central/eastern Brazil, Spain, southern France, western Sahara, Sudan, South Sudan, western Ethiopia, northern Democratize Republic of Congo (DRC), Saudi Arabia, Iraq, Syria, northern/eastern Kazakhstan, southern Russia, north/central/eastern India, Bangladesh, Southeast Asia and northern/eastern China.
- There is an increased chance of *severe heat* over, western USA, central/eastern Brazil, western Sahara, Sudan, South Sudan, western Ethiopia, Saudi Arabia, Iraq, southern Russia, eastern Kazakhstan, northern Pakistan and northern/eastern China.
- There is an increased chance for *extremely severe heat, over central/eastern Brazil, Sudan, South Sudan and northern/eastern China.*

Extremely Severe Heat: Tmax/HI are among the 5% highest values over the 30-year period 1991-2020
Severe Heat: Tmax/HI are among the 10% highest values over the 30-year period 1991-2020
Moderately Severe Heat: Tmax/HI are among the 20% highest values over the 30-year period 1991-2020

Note: For the Sahel region in Africa: **Tmax/HI hybrid > 41°C for at least 3 consecutive days** is also considered as **Moderately Severe Heat**



- **There is an increased chance of *heat over* western USA, central/eastern Brazil, Spain, southern France, western Sahara, Sudan, South Sudan, western Ethiopia, Saudi Arabia, Iraq, Syria, western Iran. eastern Kazakhstan, northern India, northern Pakistan, and eastern China.**
- **There is an increased chance of *severe heat* , western USA, central/eastern Brazil, western Spain, Sudan, South Sudan, western Ethiopia, western Saudi Arabia, eastern Kazakhstan, northern Pakistan and eastern China.**
- **There is an increased chance for *extremely severe heat central/eastern Brazil, western Saudi Arabia and eastern China.***

Extremely Severe Heat: **Tmax/HI are among the 5% highest values over the 30-year period 1991-2020**
Severe Heat: **Tmax/HI are among the 10% highest values over the 30-year period 1991-2020**
Moderately Severe Heat: **Tmax/HI are among the 20% highest values over the 30-year period 1991-2020**

Note: For the Sahel region in Africa: **Tmax/HI hybrid > 41°C for at least 3 consecutive days** is also considered as **Moderately Severe Heat**