Global Heat Hazards Outlooks

Date of Issuance: 24 June 2025

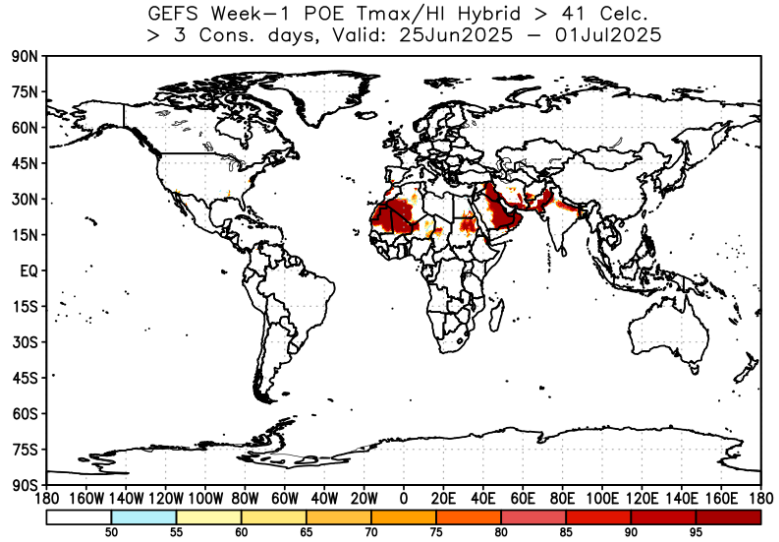
Week-1 Valid : 25 Jun 2025 – 01 Jul 2025

Week-2 Valid: 02 Jul 2025 – 08 Jul 2025

Numerical Weather Prediction Model: NCEP GEFS

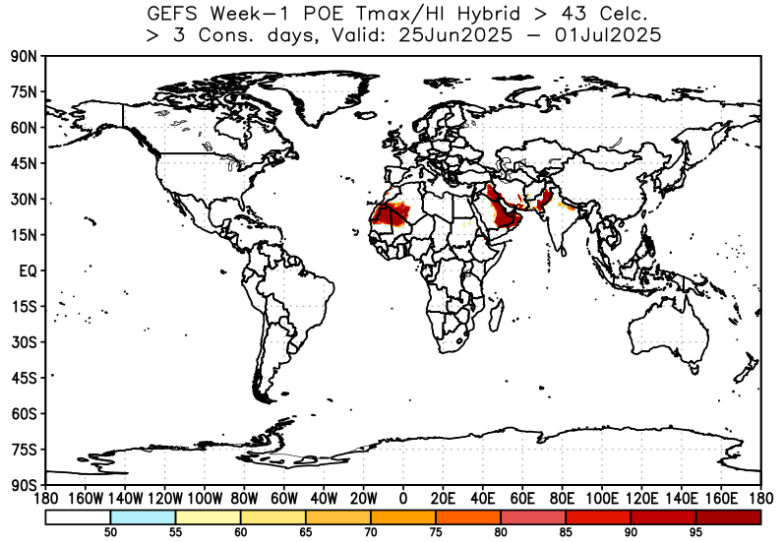
GEFS Week-1 HI/Tmax Hybrid POE with Respect to Fixed Thresholds

>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



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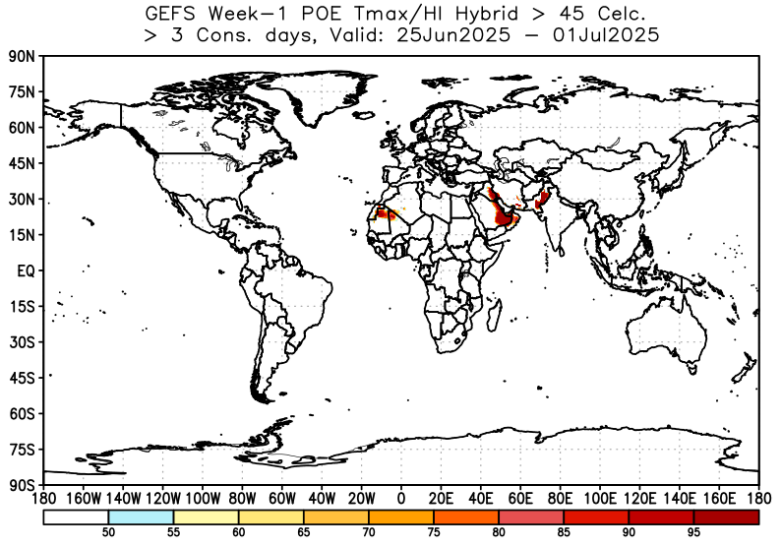
>45ºC & > 3 Consc. Days

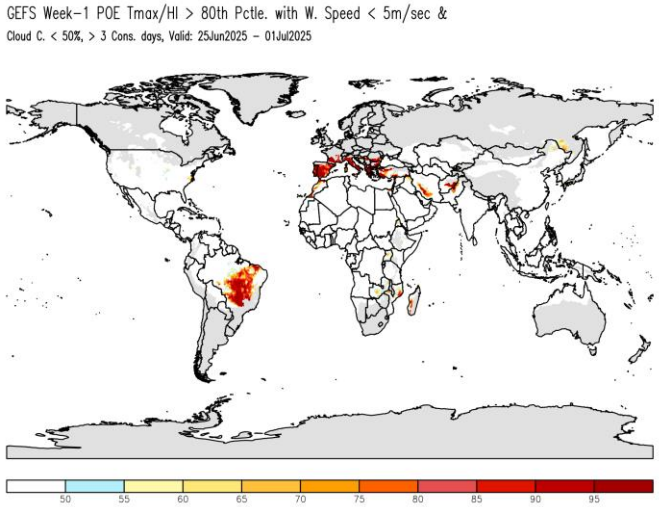


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_45.png

- Probabilities exceed 85% for the hybrid index to exceed 41ºC for at least three consecutive days in the southern Algeria, western Sahara, Mauritania, Mali, central Niger. western Chad, eastern Sudan, Saudi Arabia, Oman, Iraq, southern Iran, southern Afghanistan, much of Pakistan and northern India.

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

>80th & > 3 Consc. Days



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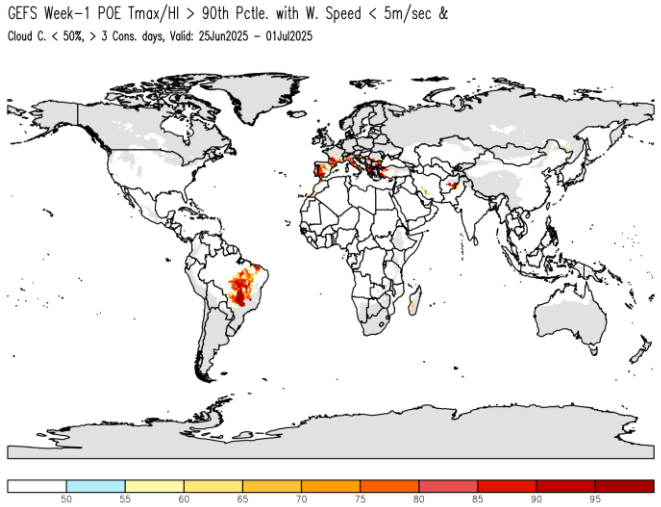
>90th & > 3 Consc. Days



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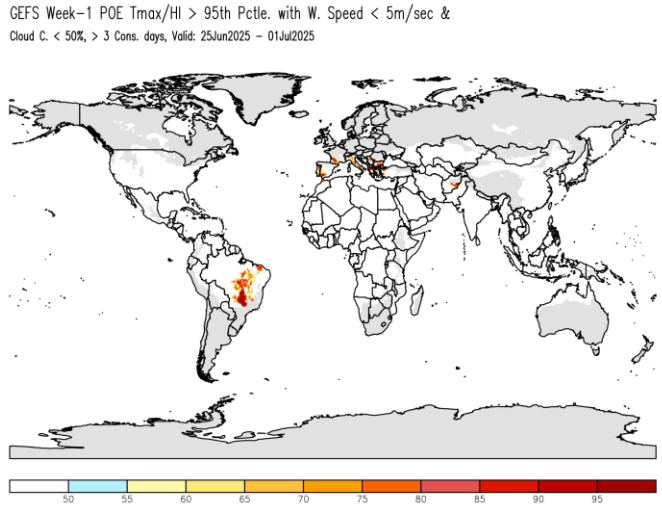
>95th & > 3 Consc. Days

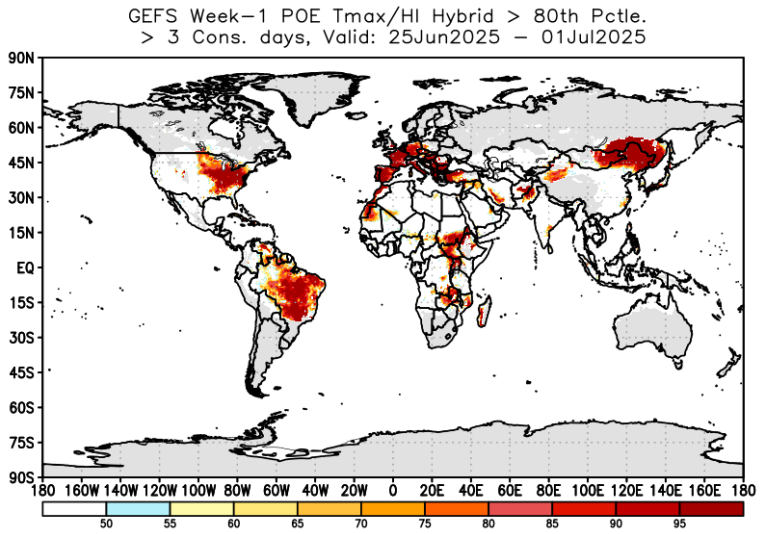


https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week1_glb_prob_95.gif

- 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 in central Brazil, small pockets of southern/western Spain, Italy, southeastern Europe, western Turkey, Zambia, Mozambique, small pocket of Madagascar, central Ethiopia, western Iran, western Pakistan, eastern Afghanistan, and pockets in northeastern and western China.

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

>80th & > 3 Consc. Days



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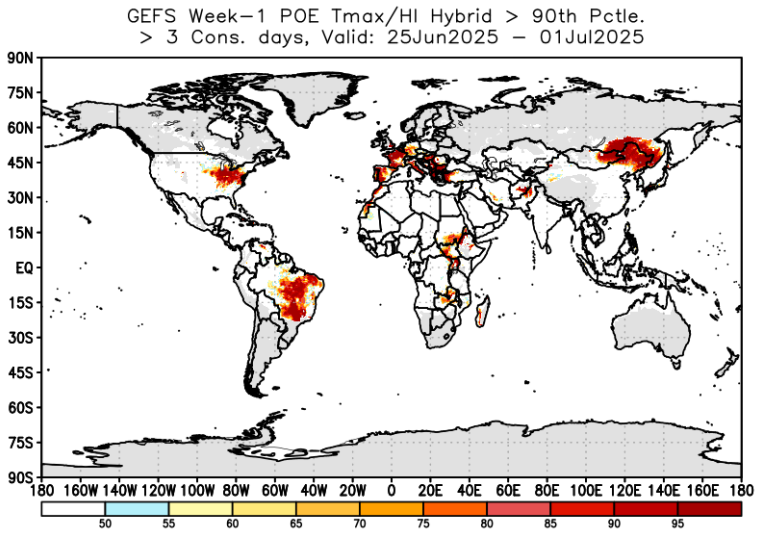
>90th & > 3 Consc. Days



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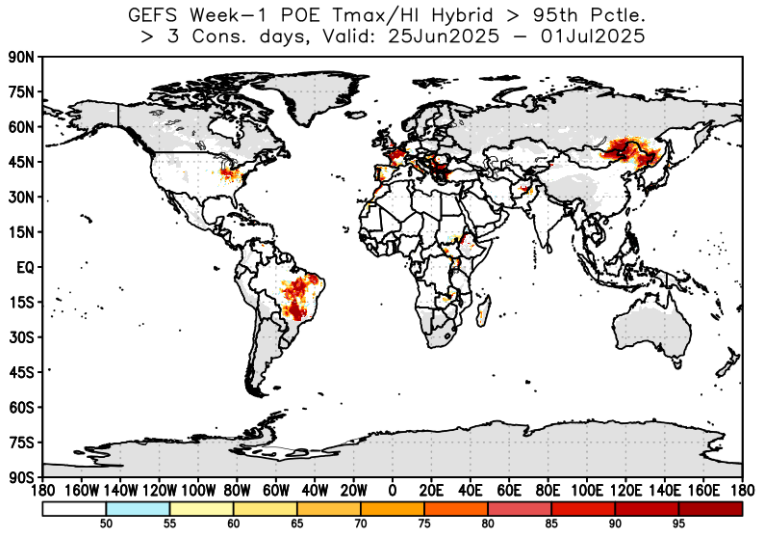
>95th & > 3 Consc. Days

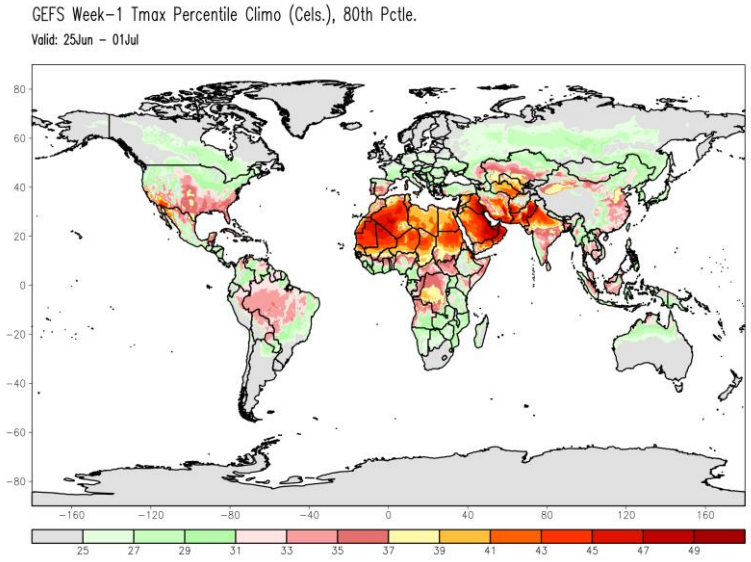


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_95.png

- Probabilities exceed 90% for the hybrid index to exceed the 80th percentile for at least three consecutive days, in the eastern United States, much of the Brazil, Spain, Portugal, France, southeastern Europe, western Turkey, Morocco, central Ethiopia, southern Sudan, South Sudan, pockets of Nigeria, Niger, and Chad, Zambia, Mozambique, western Madagascar, a pocket of western Iran, central Afghanistan, Pakistan, eastern Central Asia, Mongolia, southeastern Russia, western China and northern Australia.

GEFS Week-1 Tmax Percentile Climatology (°C)

Tmax 80th Percentile



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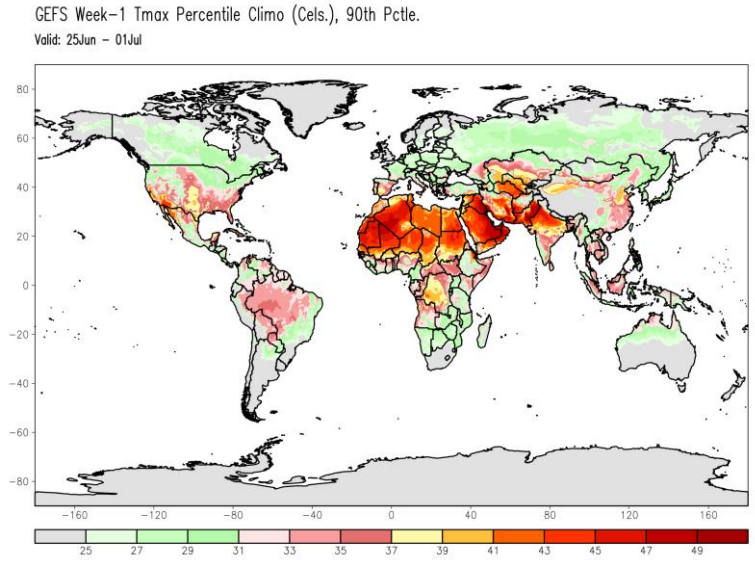
Tmax 90th Percentile



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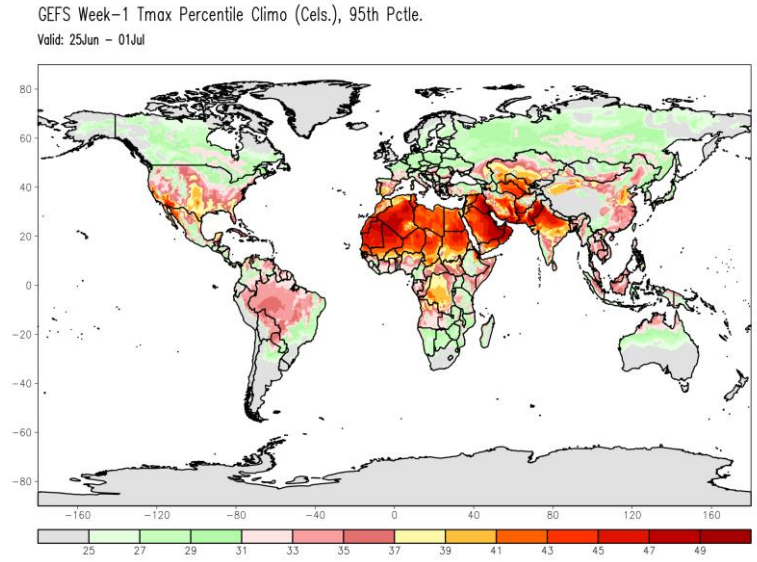
Tmax 95th Percentile



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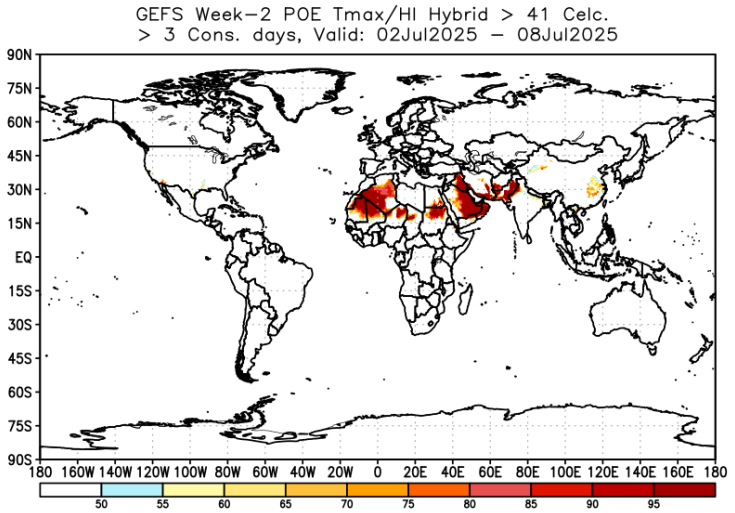
GEFS Week-2 HI/Tmax Hybrid POE with Respect to Fixed Thresholds

>41ºC & > 3 Consc. Days



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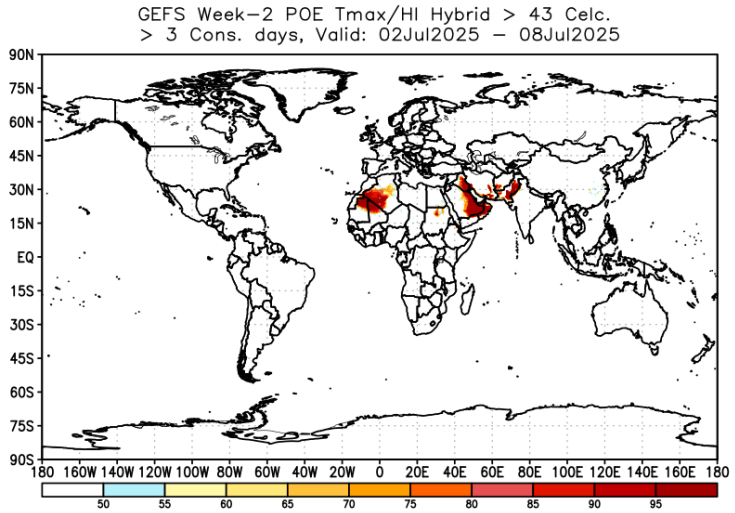
>43ºC & > 3 Consc. Days



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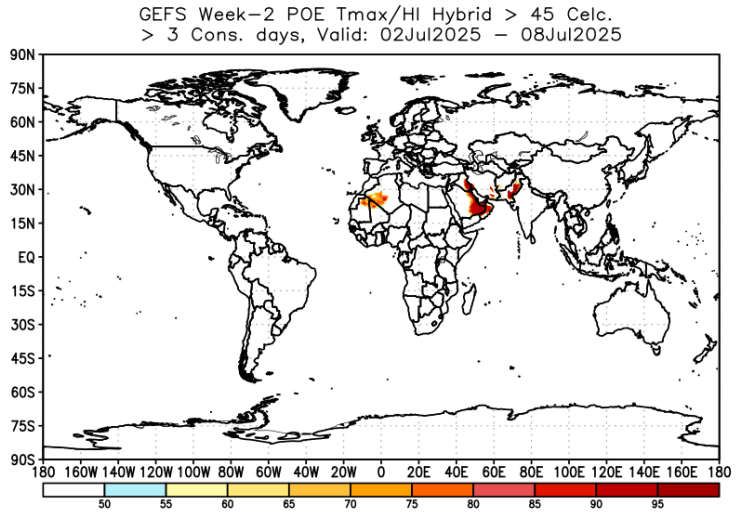
>45ºC & > 3 Consc. Days

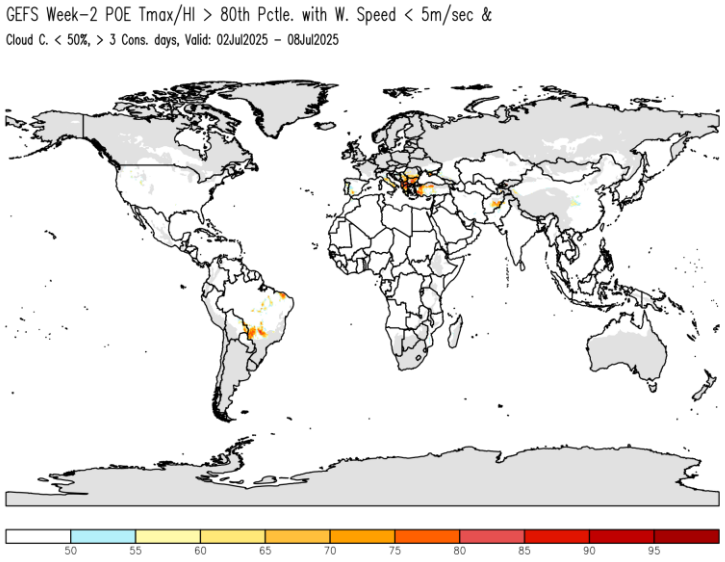


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_45.png

- There is an increased chance for the hybrid index to exceed 41ºC for at least three consecutive days in Mauritania, Algeria, Mali, eastern Niger, western Chad, northern Sudan, pocket of southern Egypt, Saudi Arabia, Oman, Yemen, Iraq, southern Iran, southern Afghanistan, Pakistan, a small strip in western India.

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

>80th & > 3 Consc. Davs



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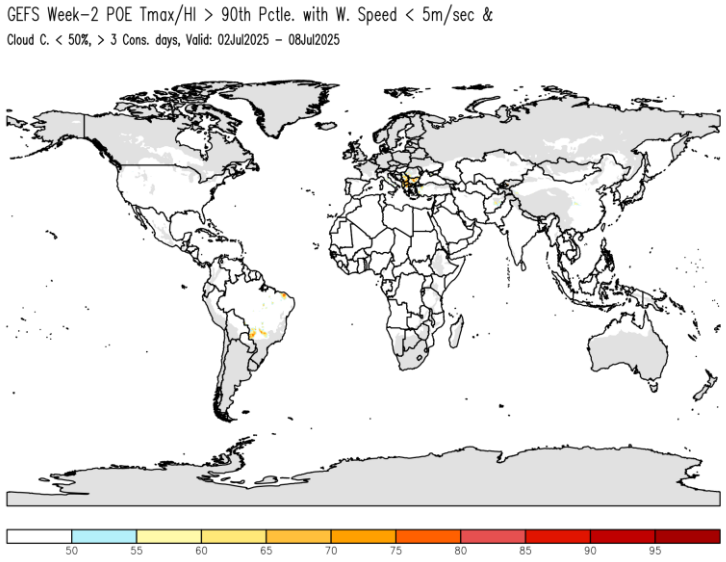
>90th & > 3 Consc. Davs



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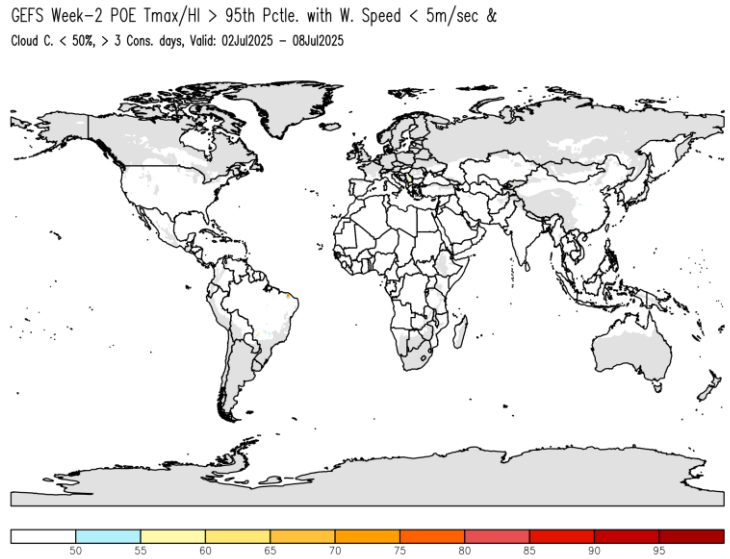

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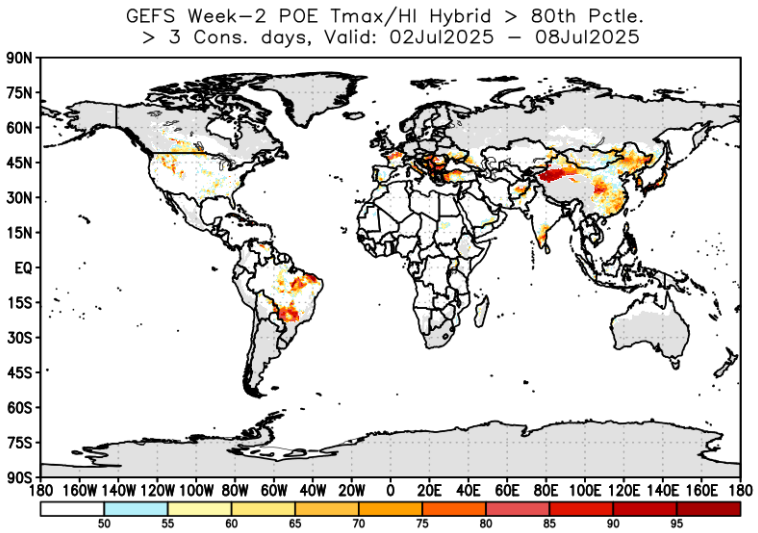
- Probabilities exceed 70% for the hybrid index with calmer wind and less cloud cover to exceed the 80th percentile for at least three consecutive days, over central/eastern Brazil, southern Spain, scattered parts of Italy and southeastern Europe, small pockets of eastern Afghanistan and western Pakistan.

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

>80th & > 3 Consc. Days



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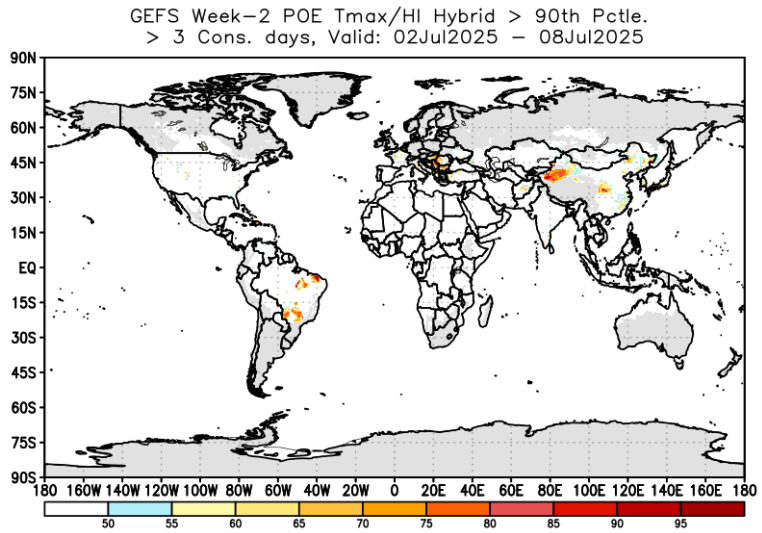

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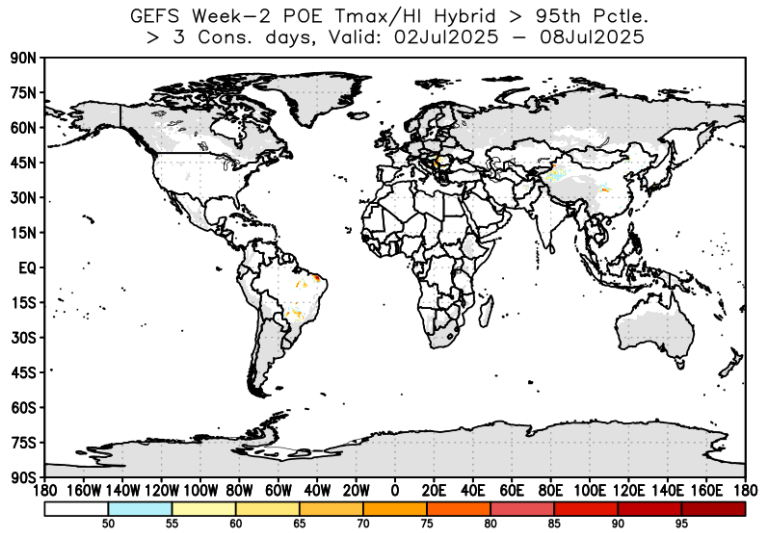
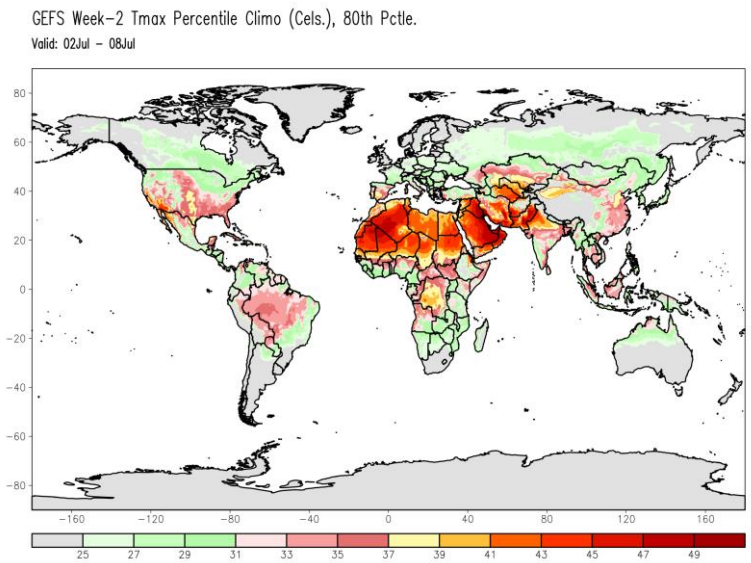


https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_95.png

- There is an increased chance (> 80%) for the hybrid index to exceed the 80th percentile for at least three consecutive days, in northwestern USA, parts of central/western Canada, central/eastern Brazil, Germany, Spain, France, Italy, parts of southeastern Europe Western Sahara, Burundi, eastern Ethiopia, western Madagascar, northern Yemen, southern Saudi Arabia, central Afghanistan, western Pakistan, pockets of southern India, eastern Mongolia, and western/eastern China.

GEFS Week-2 Tmax Percentile Climatology (°C)

Tmax 80th Percentile



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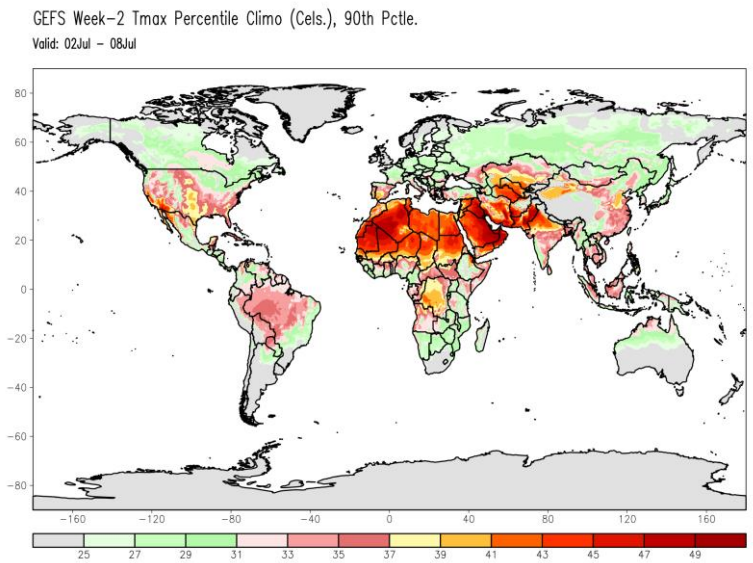
Tmax 90th Percentile



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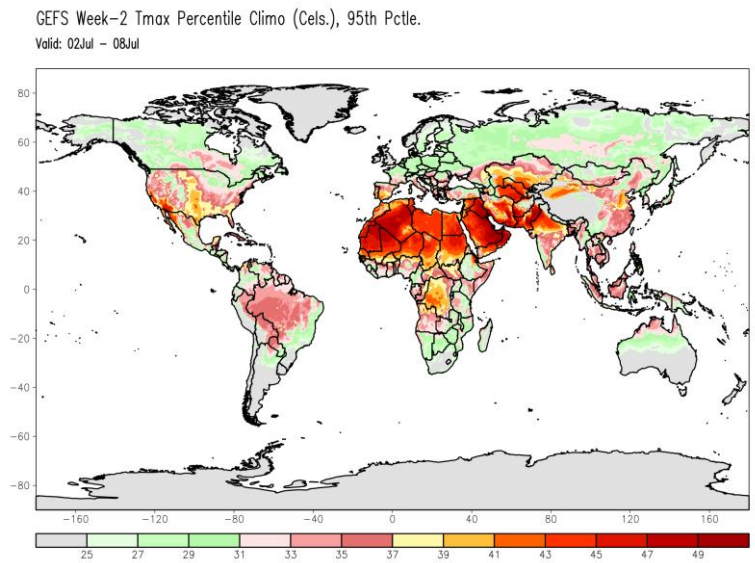
Tmax 95th Percentile



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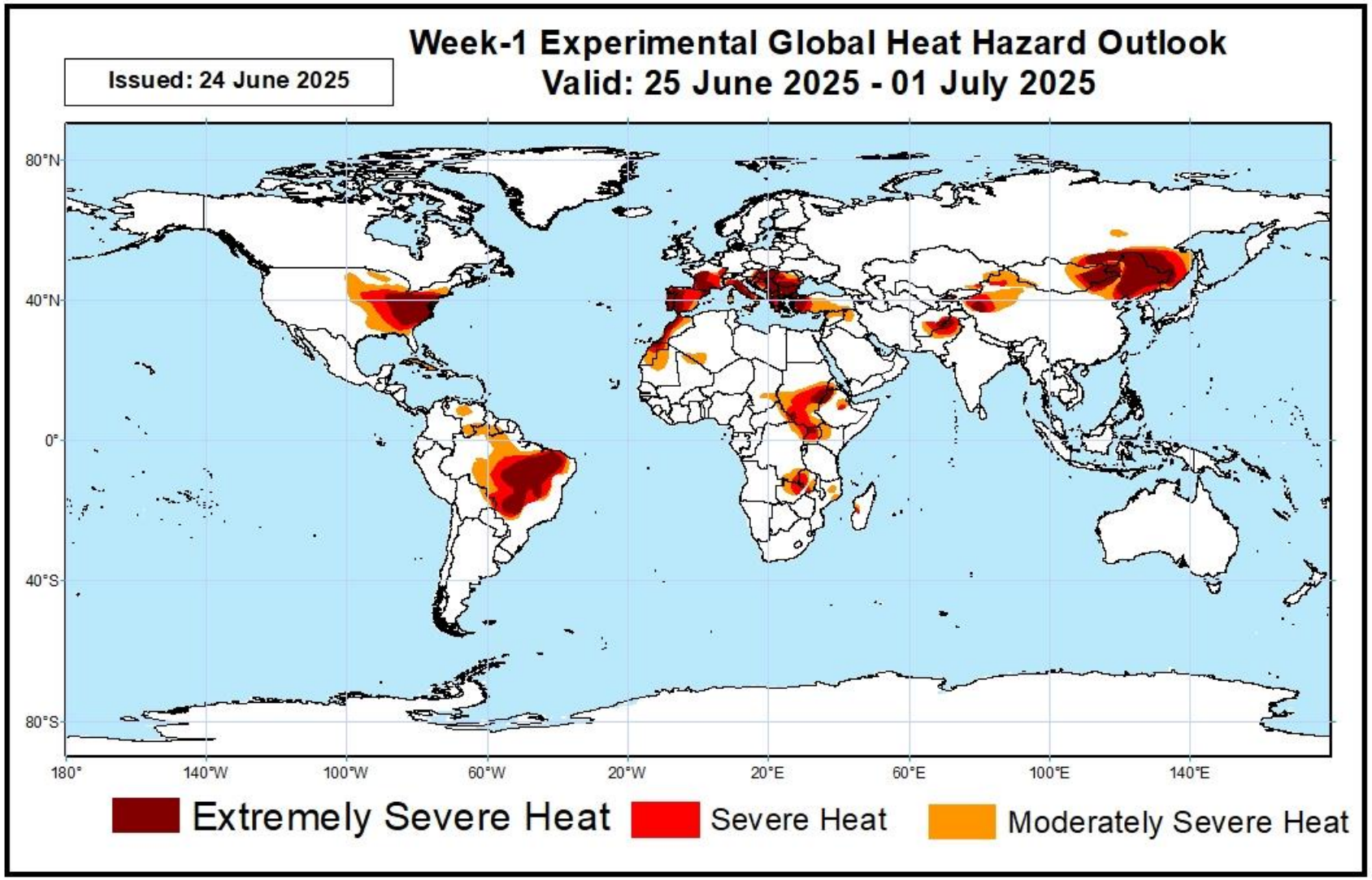
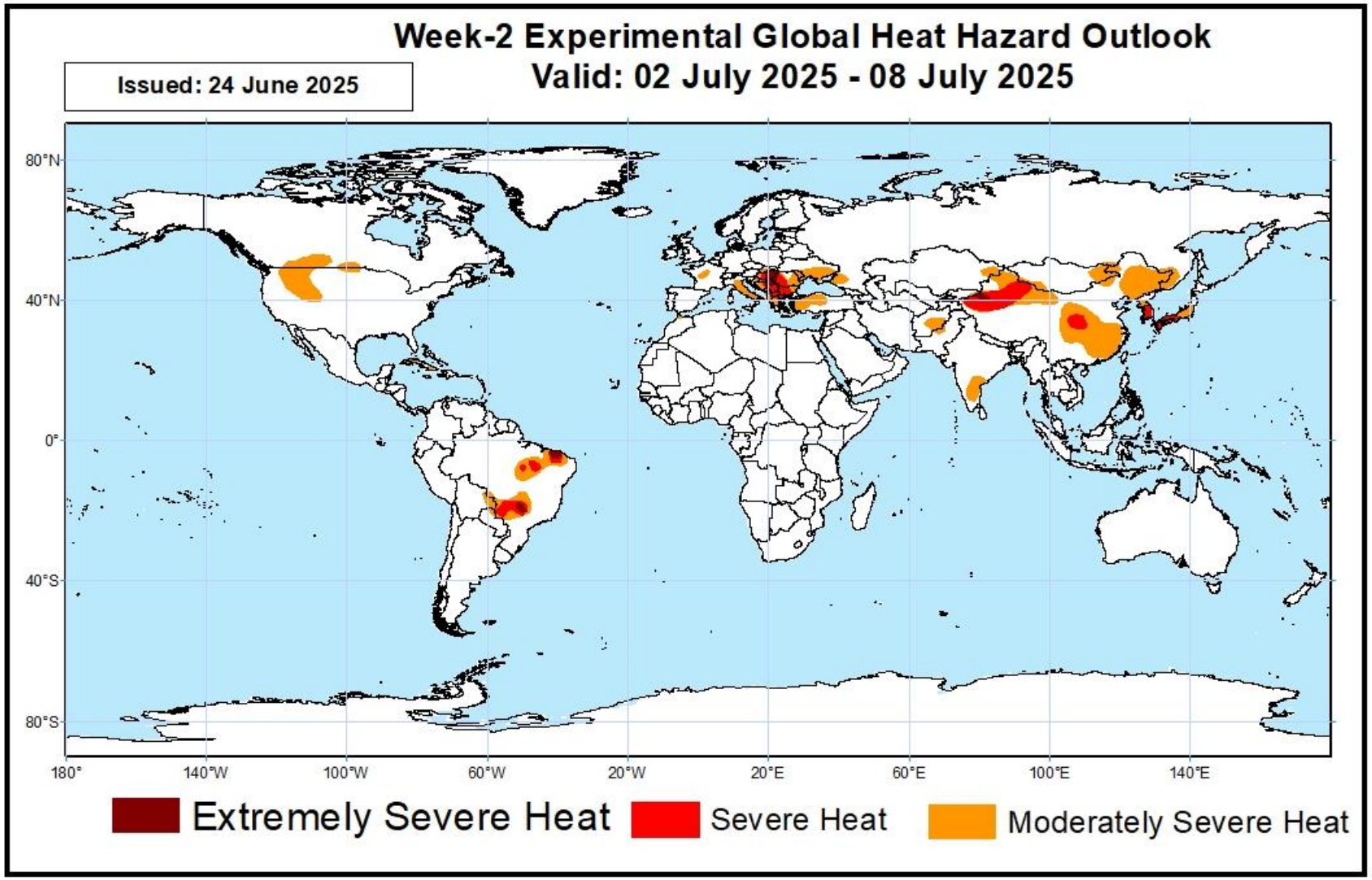


- There is an increased chance of *moderately to severe heat over* southwestern/mid-western and eastern USA, Cuba, small parts of northern/southern Venezuela, central/eastern Brazil, Spain, France, southern Europe, western Sahara, Morocco, southern Algeria, northern Ethiopia, Uganda, Kenya, Zambia, southern Sudan, South Sudan, Malawi, Mozambique, eastern Kazakhstan, southern Russia, north/western Pakistan, central/southern Afghanistan, northwestern/northeastern China and eastern Mongolia.
- There is an increased chance for *extremely severe heat, over eastern USA, eastern Brazil, southern Europe, Spain, France, eastern Sudan, western South Sudan, northwest Pakistan, southern Afghanistan, eastern Mongolia and northwestern/northeastern 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 northwestern* USA, southern Canada, Brazil, small pocket on central France, southern Europe, southeastern Kazakhstan, eastern Mongolia, southern Afghanistan, southeastern India and western/eastern/southern China.
- There is an increased chance of *severe heat* over central/eastern Brazil, southern Europe, and western/eastern China.
- There is an increased chance for *extremely severe heat for small pockets in southern Europe.*

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**