

# **Global Heat Hazards Outlooks**

**Date of Issuance: 24 Dec 2024**

**Week-1 Valid: 25 Dec 2024 – 31 Dec 2024**

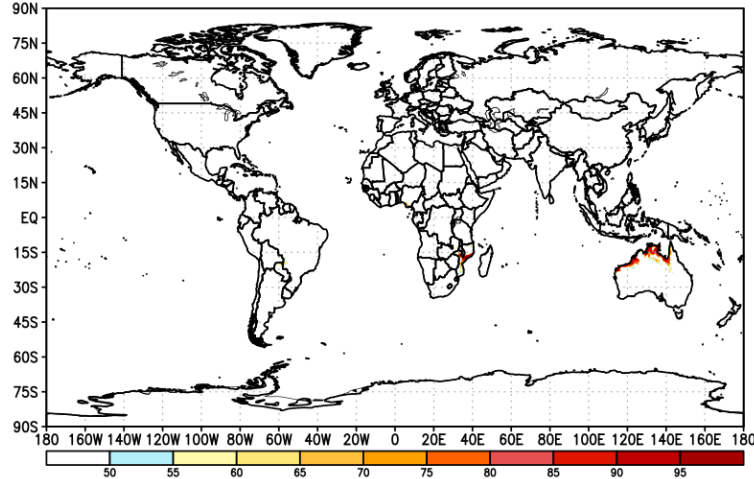
**Week-2 Valid: 01 Jan 2025 – 07 Jan 2025**

**Numerical Weather Prediction Model: NCEP GEFS**

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

## >41°C & > 3 Consc. Days

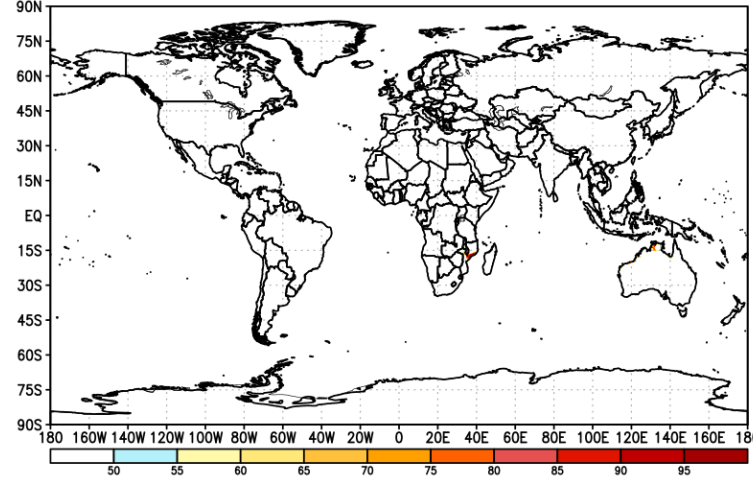
GEFS Week-1 POE Tmax/HI Hybrid > 41 Celc.  
> 3 Cons. days, Valid: 25Dec2024 – 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/global\\_hett/gefs\\_week1\\_prob\\_hybrid\\_3\\_glb\\_41.png](https://ftp.cpc.ncep.noaa.gov/International/global_hett/gefs_week1_prob_hybrid_3_glb_41.png)

## >43°C & > 3 Consc. Days

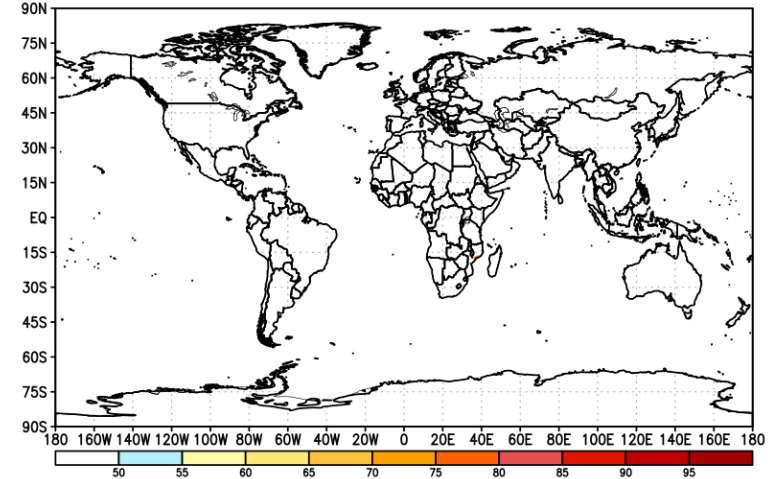
GEFS Week-1 POE Tmax/HI Hybrid > 43 Celc.  
> 3 Cons. days, Valid: 25Dec2024 – 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/global\\_hett/gefs\\_week1\\_prob\\_hybrid\\_3\\_glb\\_43.png](https://ftp.cpc.ncep.noaa.gov/International/global_hett/gefs_week1_prob_hybrid_3_glb_43.png)

## >45°C & > 3 Consc. Days

GEFS Week-1 POE Tmax/HI Hybrid > 45 Celc.  
> 3 Cons. days, Valid: 25Dec2024 – 31Dec2024

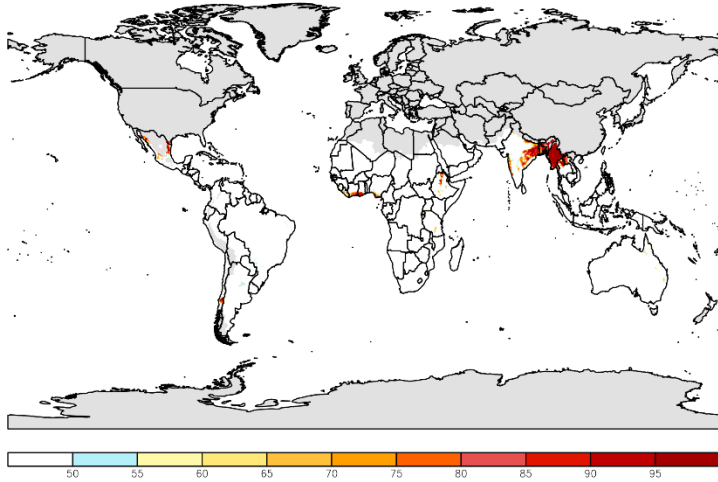


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# GEFS Week-1 POE, Tmax/HI with Calmer Wind (< 5m s-1) and less Cloud Cover (< 50%)

## >80<sup>th</sup> & > 3 Consc. Days

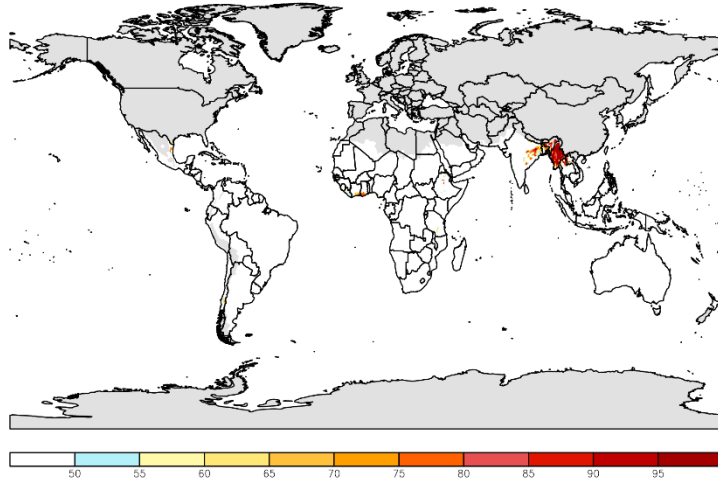
GEFS Week-1 POE Tmax/HI > 80th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fc/st/gefs\\_heat/gefs\\_comb3\\_week1\\_glb\\_prob\\_80.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fc/st/gefs_heat/gefs_comb3_week1_glb_prob_80.gif)

## >90<sup>th</sup> & > 3 Consc. Days

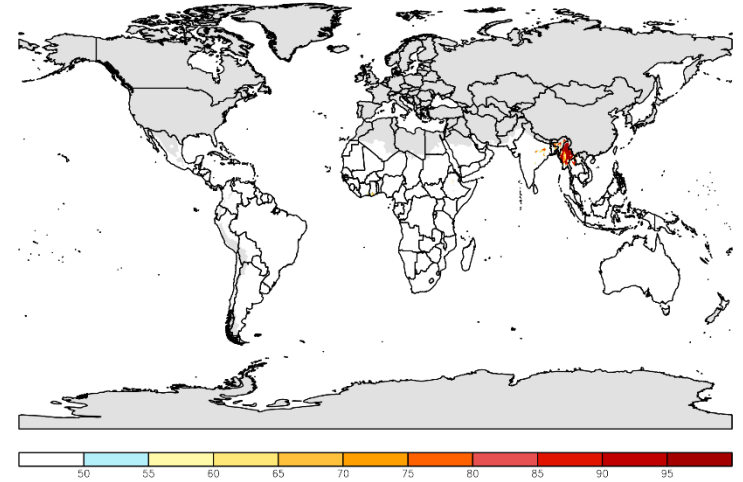
GEFS Week-1 POE Tmax/HI > 90th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fc/st/gefs\\_heat/gefs\\_comb3\\_week1\\_glb\\_prob\\_90.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fc/st/gefs_heat/gefs_comb3_week1_glb_prob_90.gif)

## >95<sup>th</sup> & > 3 Consc. Days

GEFS Week-1 POE Tmax/HI > 95th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 25Dec2024 - 31Dec2024

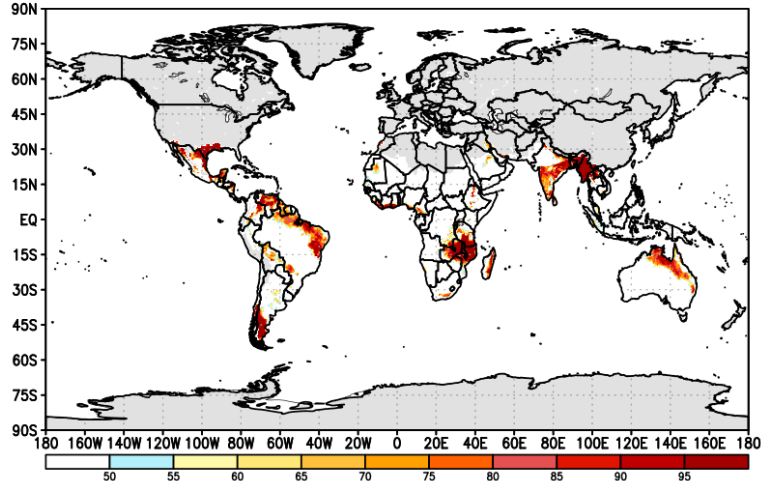


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# GEFS Week-1 HI/Tmax Hybrid POE with Respect to Percentile Climo. Thresholds

## >80<sup>th</sup> & > 3 Consc. Days

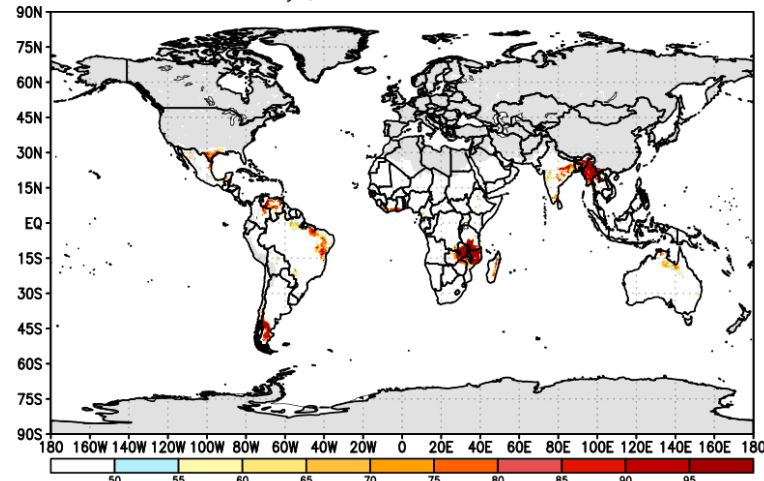
GEFS Week-1 POE Tmax/HI Hybrid > 80th Pctle.  
> 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



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## >90<sup>th</sup> & > 3 Consc. Days

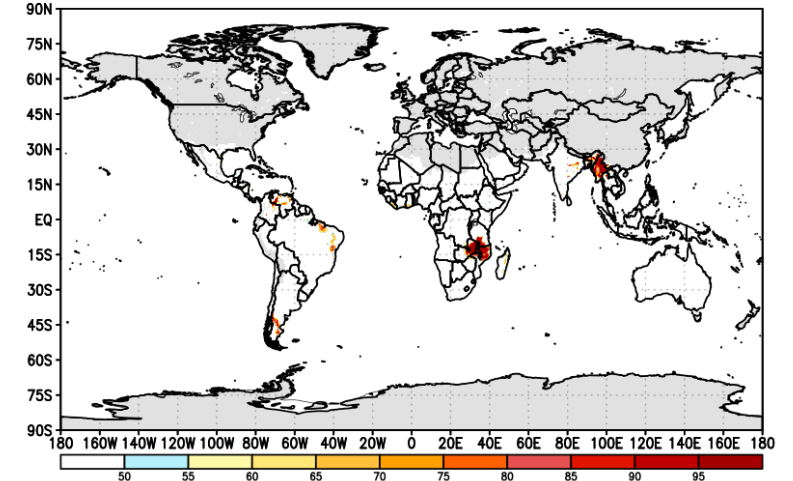
GEFS Week-1 POE Tmax/HI Hybrid > 90th Pctle.  
> 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



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## >95<sup>th</sup> & > 3 Consc. Days

GEFS Week-1 POE Tmax/HI Hybrid > 95th Pctle.  
> 3 Cons. days, Valid: 25Dec2024 - 31Dec2024

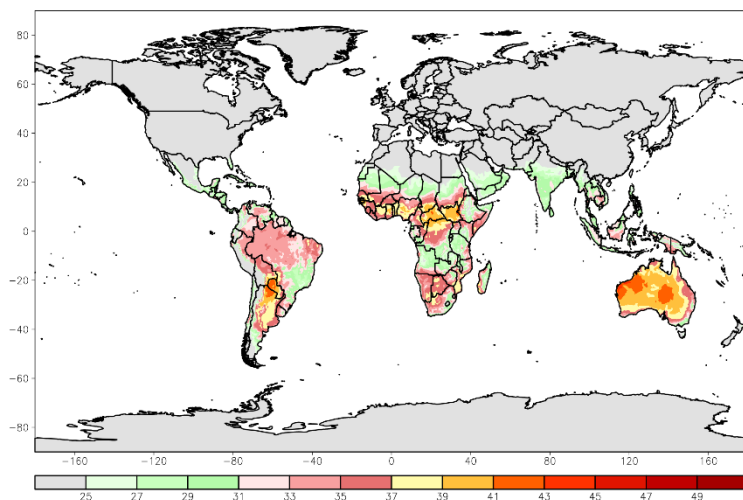


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# GEFS Week-1 Tmax Percentile Climatology (°C)

## Tmax 80<sup>th</sup> Percentile

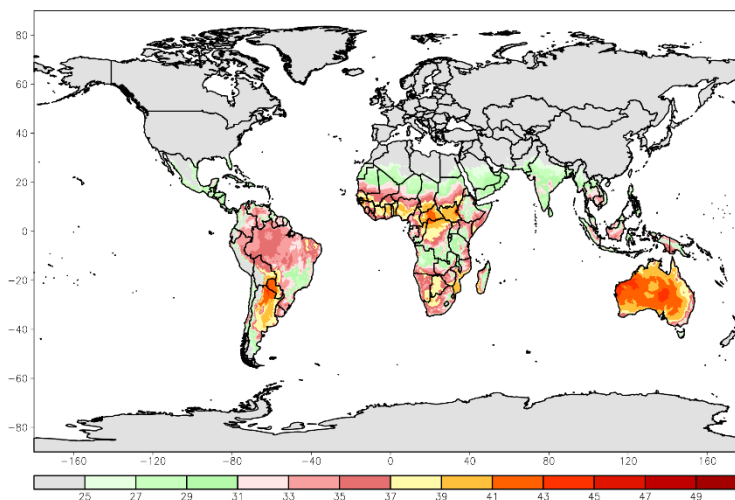
GEFS Week-1 Tmax Percentile Climo (Cels.), 80th Pctle.  
Valid: 25Dec2024 - 31Dec2024



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## Tmax 90<sup>th</sup> Percentile

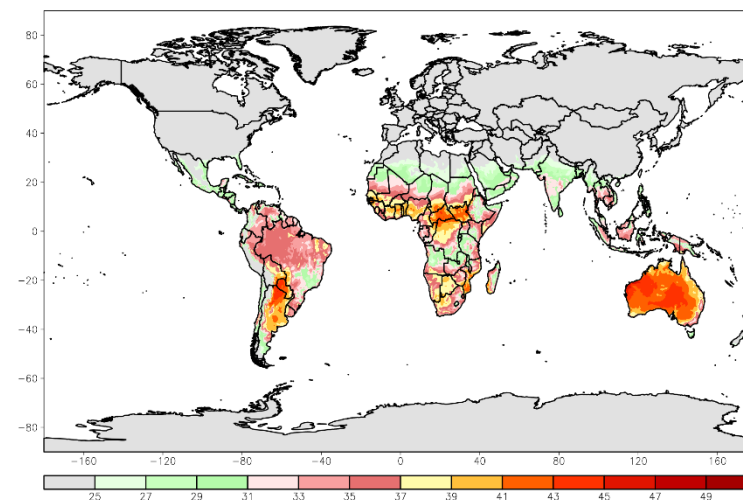
GEFS Week-1 Tmax Percentile Climo (Cels.), 90th Pctle.  
Valid: 25Dec2024 - 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fc/st/gefs\\_heat/gefs\\_hybrid\\_week1\\_glb\\_clm\\_90.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fc/st/gefs_heat/gefs_hybrid_week1_glb_clm_90.gif)

## Tmax 95<sup>th</sup> Percentile

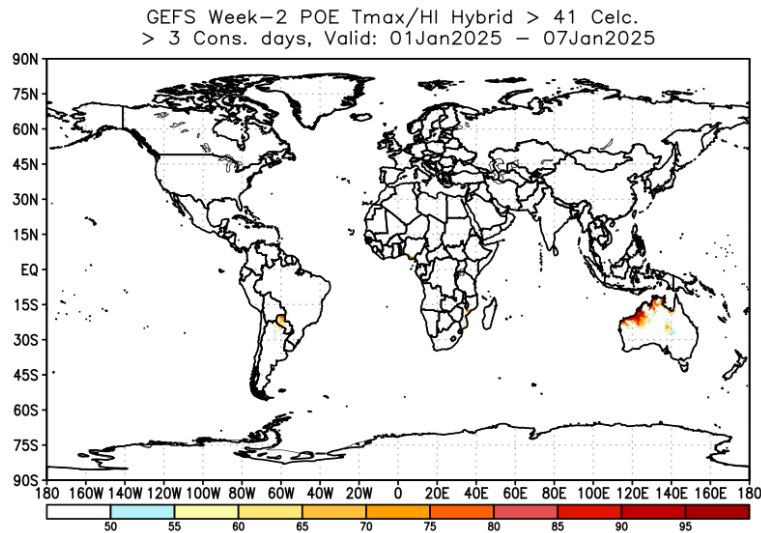
GEFS Week-1 Tmax Percentile Climo (Cels.), 95th Pctle.  
Valid: 25Dec2024 - 31Dec2024



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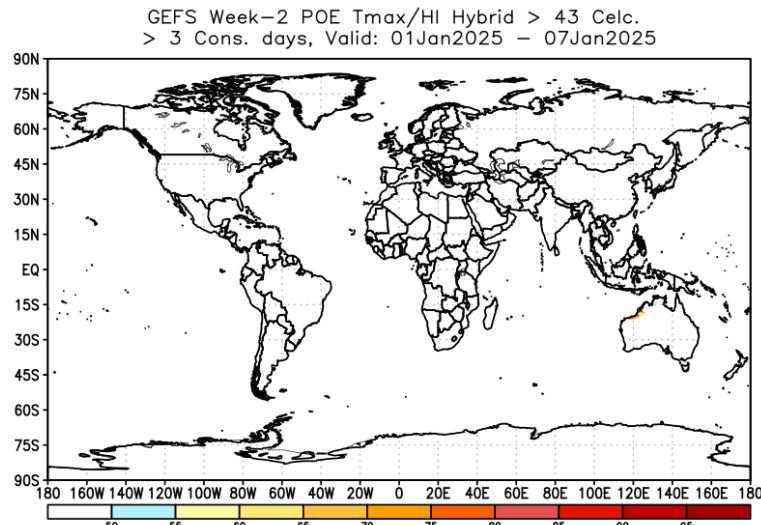
# GEFS Week-2 HI/Tmax Hybrid POE with Respect to Fixed Thresholds

## >41°C & > 3 Consc. Days



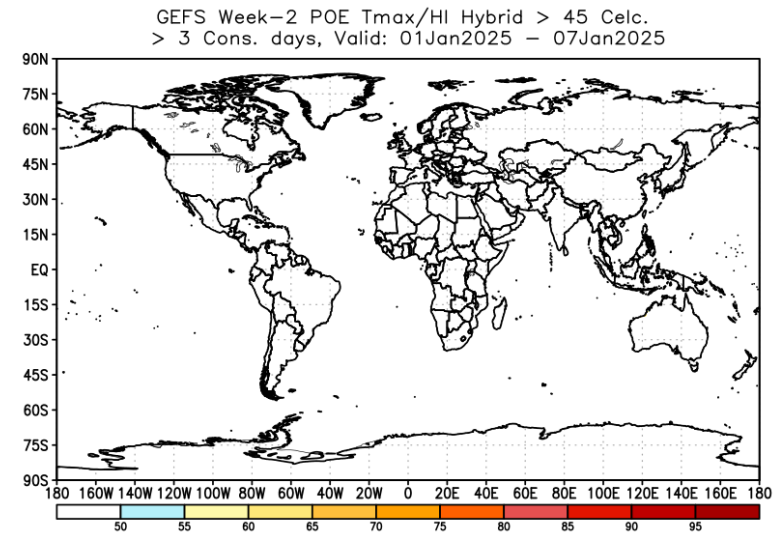
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## >43°C & > 3 Consc. Days



[https://ftp.cpc.ncep.noaa.gov/International/global\\_heat/gefs\\_week2\\_prob\\_hybrid\\_3\\_glb\\_43.png](https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_43.png)

## >45°C & > 3 Consc. Days

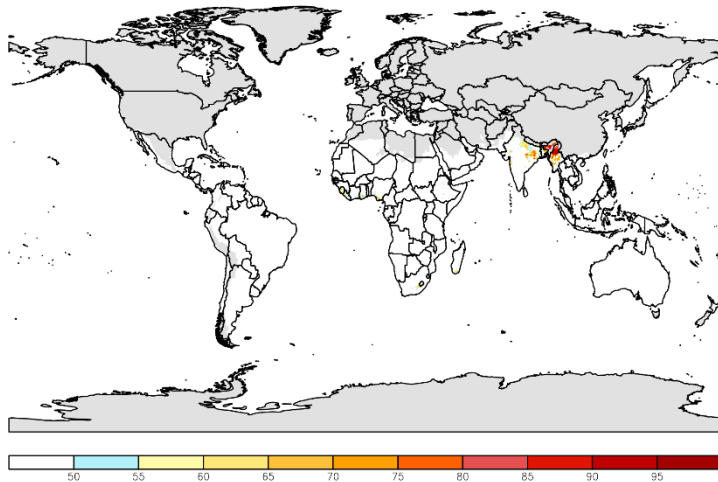


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# GEFS Week-2 POE, Tmax/HI with Calmer Wind (< 5m s-1) and less Cloud Cover (< 50%)

## >80<sup>th</sup> & > 3 Consc. Days

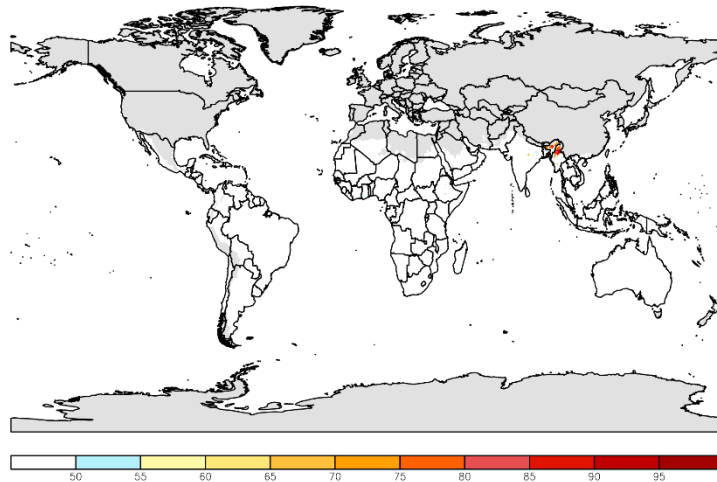
GEFS Week-2 POE Tmax/HI > 80th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 01Jan2025 - 07Jan2025



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fcst/gefs\\_heat/gefs\\_comb3\\_week2\\_glb\\_prob\\_80.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week2_glb_prob_80.gif)

## >90<sup>th</sup> & > 3 Consc. Days

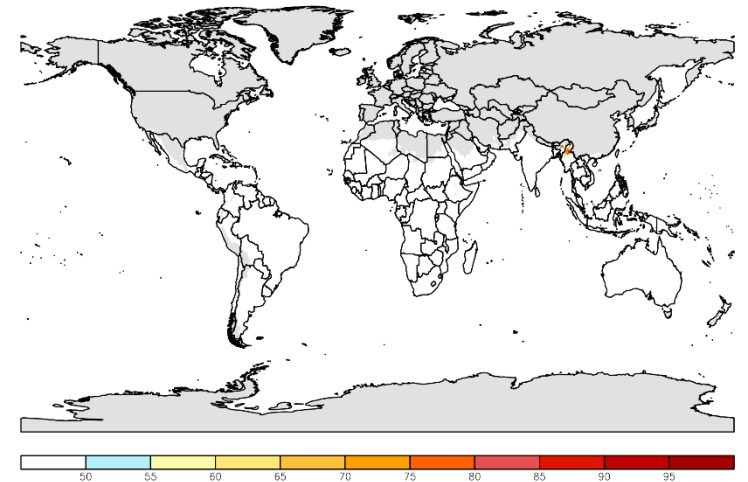
GEFS Week-2 POE Tmax/HI > 90th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 01Jan2025 - 07Jan2025



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fcst/gefs\\_heat/gefs\\_comb3\\_week2\\_glb\\_prob\\_90.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_comb3_week2_glb_prob_90.gif)

## >95<sup>th</sup> & > 3 Consc. Days

GEFS Week-2 POE Tmax/HI > 95th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 01Jan2025 - 07Jan2025



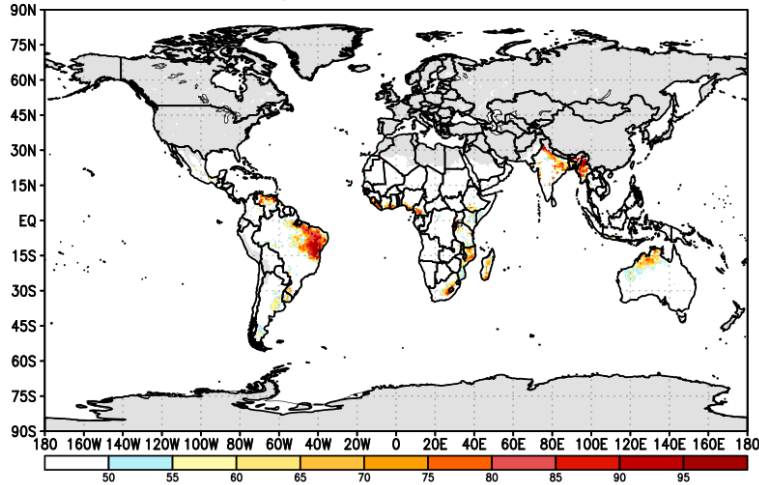
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# GEFS Week-2 HI/Tmax Hybrid POE with Respect to Percentile Climo. Thresholds

## >80<sup>th</sup> & > 3 Consc. Days

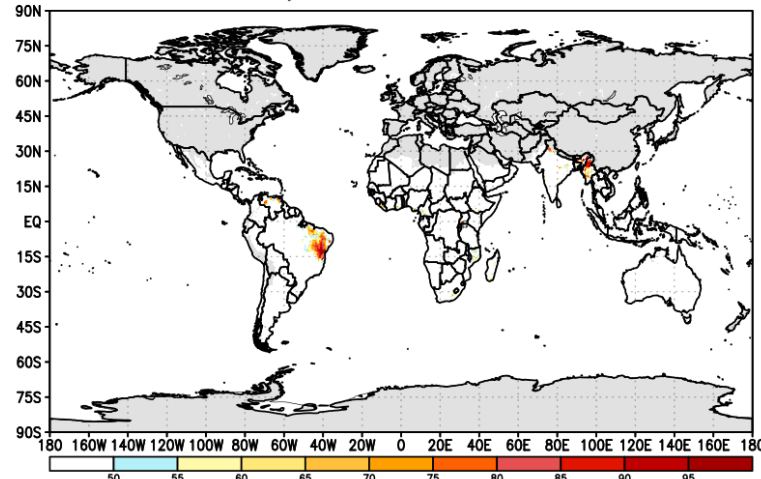
GEFS Week-2 POE Tmax/HI Hybrid > 80th Pctle.  
> 3 Cons. days, Valid: 01Jan2025 - 07Jan2025



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## >90<sup>th</sup> & > 3 Consc. Days

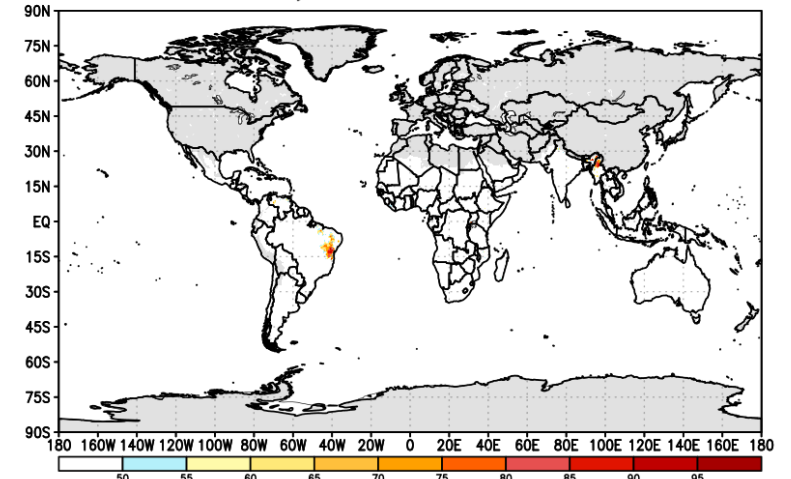
GEFS Week-2 POE Tmax/HI Hybrid > 90th Pctle.  
> 3 Cons. days, Valid: 01Jan2025 - 07Jan2025



[https://ftp.cpc.ncep.noaa.gov/International/global\\_heat/gefs\\_week2\\_prob\\_hybrid\\_3\\_glb\\_90.png](https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_90.png)

## >95<sup>th</sup> & > 3 Consc. Days

GEFS Week-2 POE Tmax/HI Hybrid > 95th Pctle.  
> 3 Cons. days, Valid: 01Jan2025 - 07Jan2025



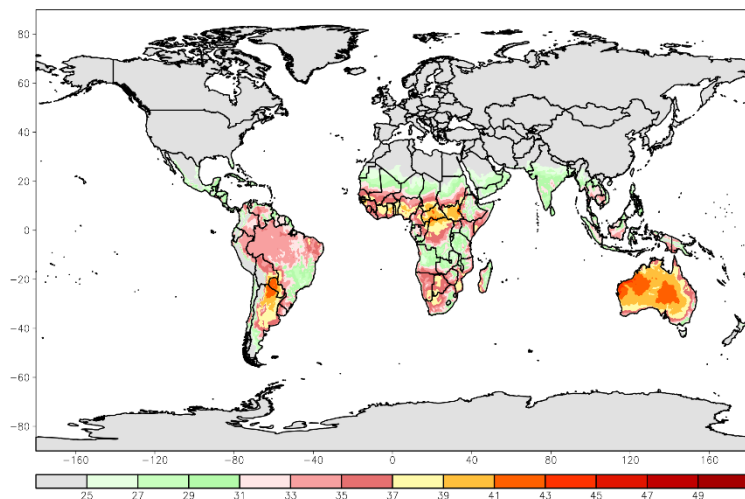
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# GEFS Week-2 Tmax Percentile Climatology (°C)

## Tmax 80<sup>th</sup> Percentile

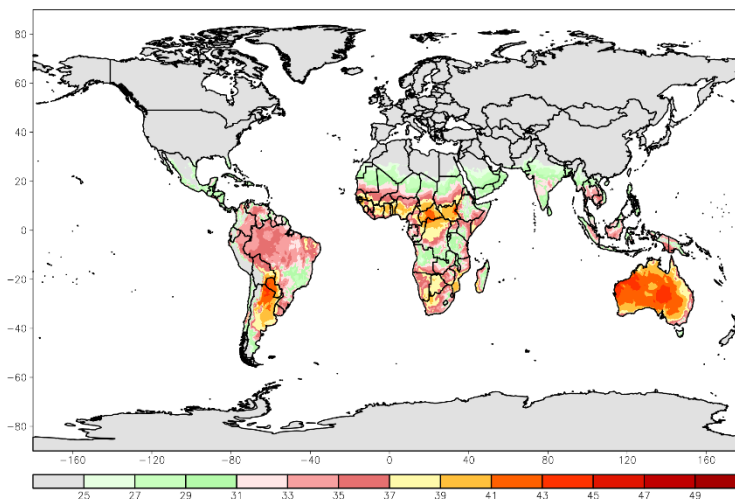
GEFS Week-2 Tmax Percentile Climo (Cels.), 80th Pctle.  
Valid: 01Jan2025 - 07Jan2025



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## Tmax 90<sup>th</sup> Percentile

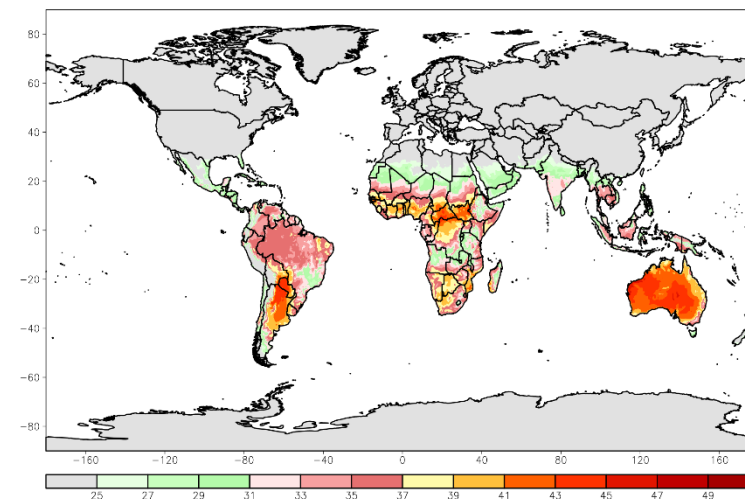
GEFS Week-2 Tmax Percentile Climo (Cels.), 90th Pctle.  
Valid: 01Jan2025 - 07Jan2025



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## Tmax 95<sup>th</sup> Percentile

GEFS Week-2 Tmax Percentile Climo (Cels.), 95th Pctle.  
Valid: 01Jan2025 - 07Jan2025

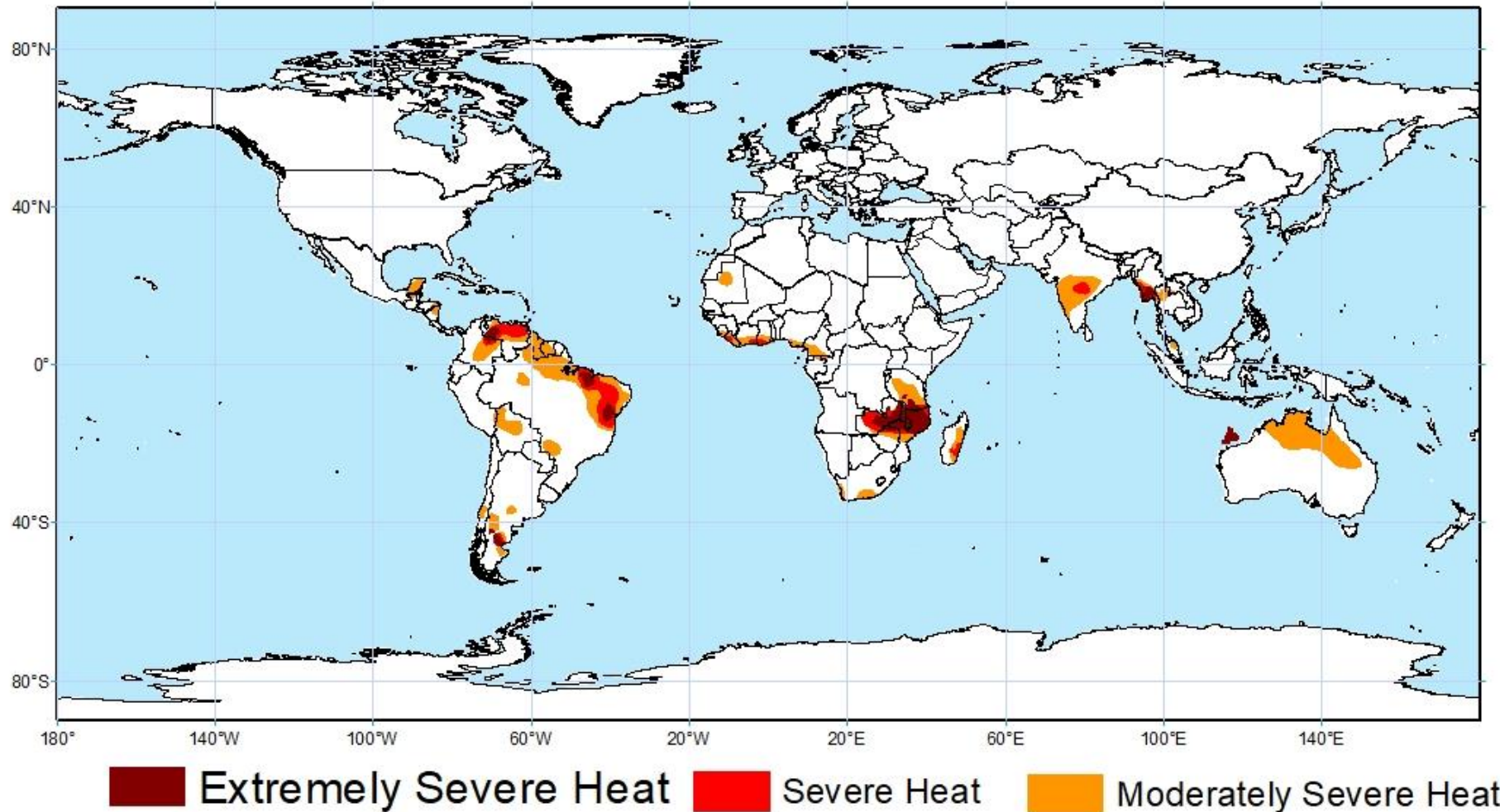


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## Week-1 Experimental Global Heat Hazard Outlook

Issued: 24 Dec 2024

Valid: 25 - 31 Dec 2024



**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  
**High Heat:** Tmax/HI are among the 20% highest values over the 30-year period 1991-2020

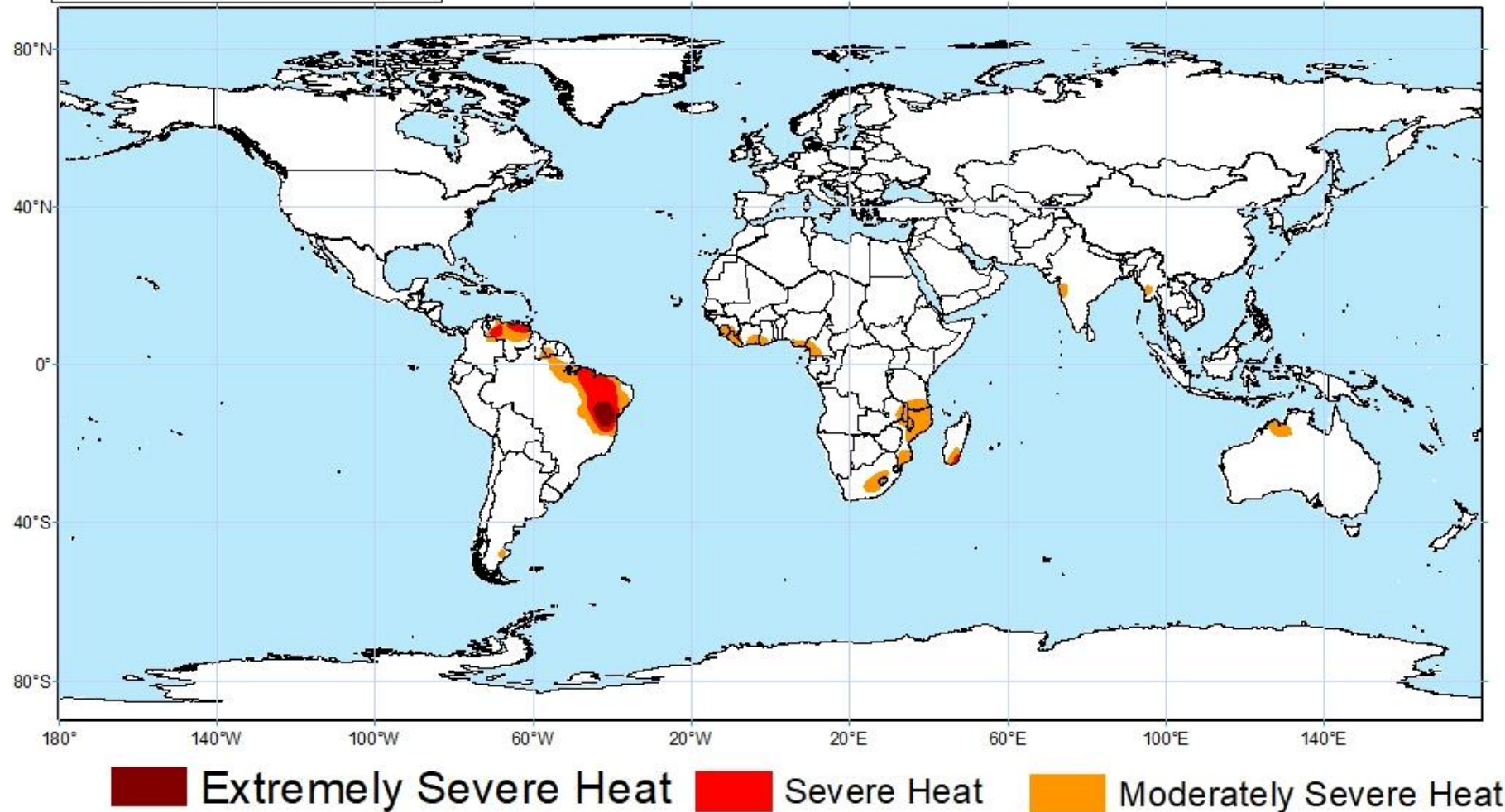
**Note:** For the Sahel region in Africa: Tmax/HI hybrid > 41°C for at least 3 consecutive days is also considered as High Heat

- There is an increased chance of heat across South America, including Brazil, Venezuela, Colombia, and parts of Argentina; Southern Africa, including Zambia, Zimbabwe and Madagascar, as well as regions of South Asia and Australia.
- Additionally, there is an elevated likelihood of extreme heat in specific areas within eastern South America, and Southern Africa particularly in Mozambique, Malawi and Zambia

## Week-2 Experimental Global Heat Hazard Outlook

Valid: 01 Jan - 07 Jan 2025

Issued 24 Dec 2024



**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  
**High 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 High Heat

- There is an increased chance for *Moderately Severe Heat* over Northern South America including Brazil, Venezuela, and parts of Southern Africa including Mozambique, Malawi and parts of Zambia, Madagascar and Australia.
- There is an increased chance for *Severe Heat* over few parts of South America including part of Brazil, and Venezuela.