

# **Global Heat Hazards Outlooks**

**Date of Issuance: 17 Dec 2024**

**Week-1 Valid: 18 – 24 Dec 2024**

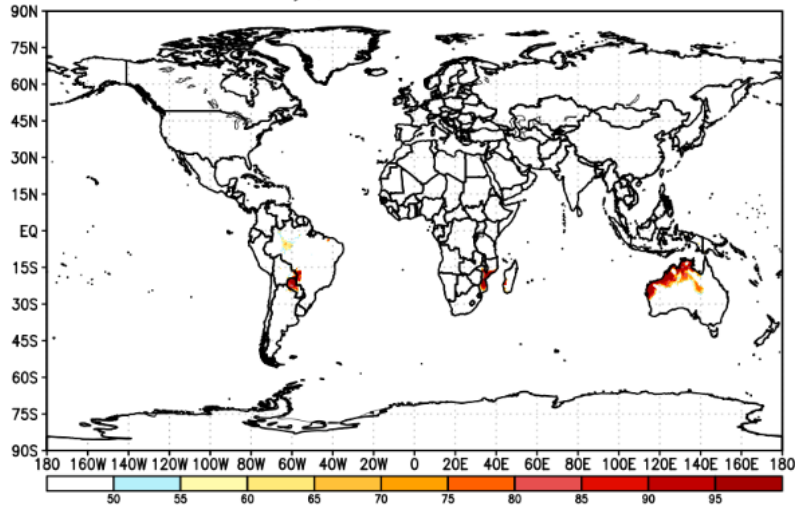
**Week-2 Valid: 25 – 31 Dec 2024**

**Numerical Weather Prediction Model: NCEP GEFS**

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

## >41°C & > 3 Consc. Days

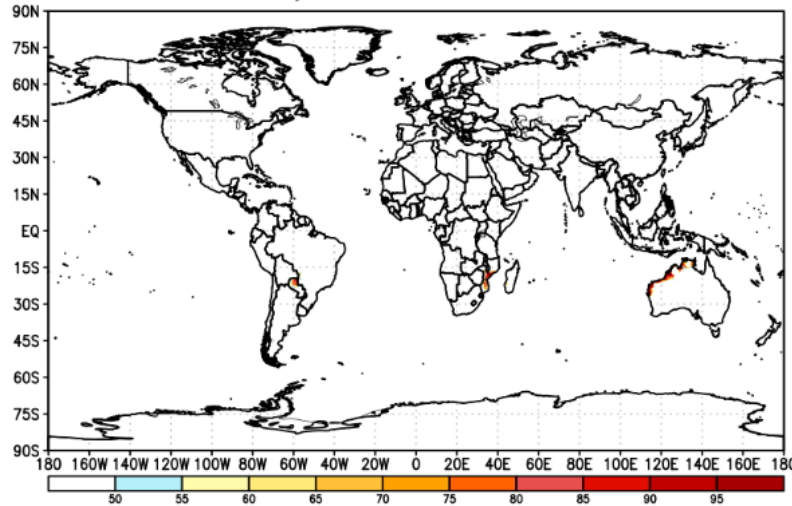
GEFS Week-1 POE Tmax/HI Hybrid > 41 Celc.  
> 3 Cons. days, Valid: 18Dec2024 – 24Dec2024



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

## >43°C & > 3 Consc. Days

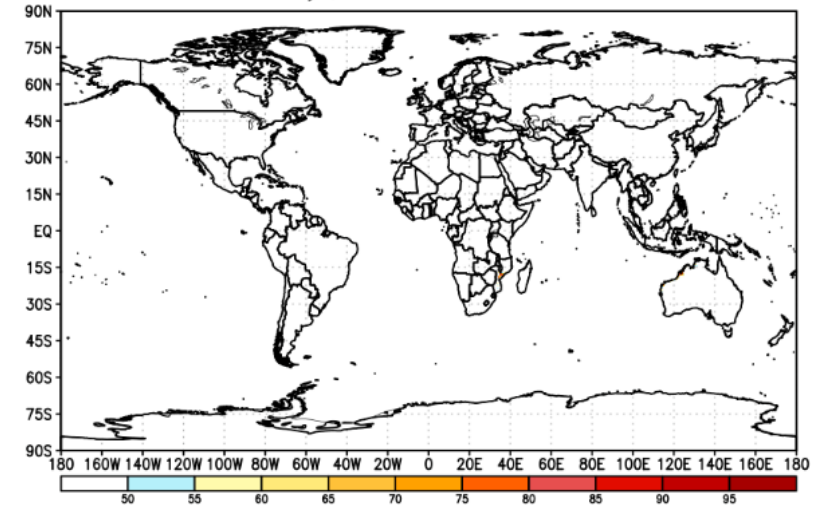
GEFS Week-1 POE Tmax/HI Hybrid > 43 Celc.  
> 3 Cons. days, Valid: 18Dec2024 – 24Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/global\\_heat/gefs\\_week1\\_prob\\_hybrid\\_3\\_glb\\_43.png](https://ftp.cpc.ncep.noaa.gov/International/global_heat/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: 18Dec2024 – 24Dec2024

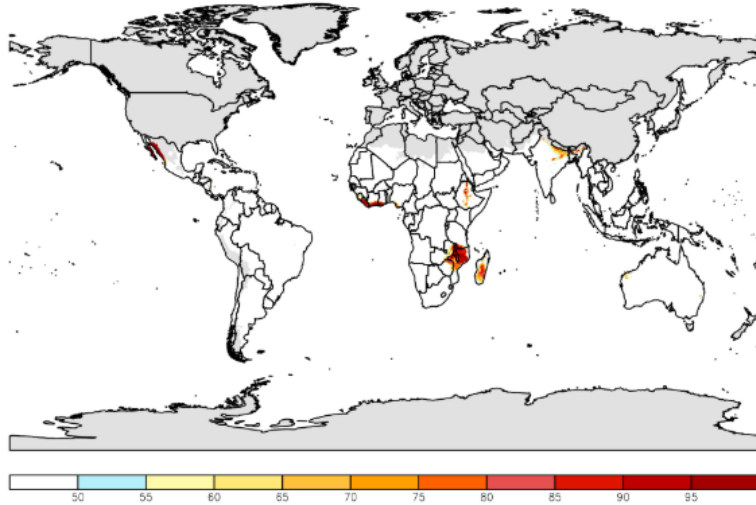


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# GEFS Week-1 POE, Tmax/HI with Calmer Wind (< 5m s-1) and less Cloud Cover (< 50%)

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

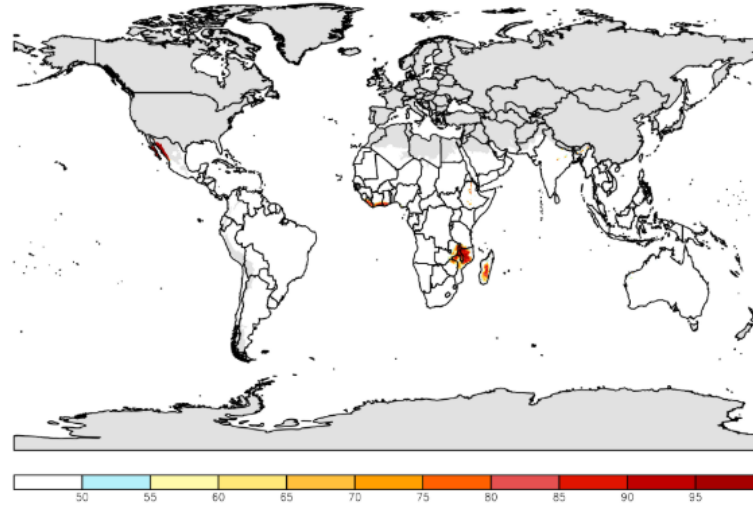
GEFS Week-1 POE Tmax/HI > 80th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 18Dec2024 - 24Dec2024



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

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

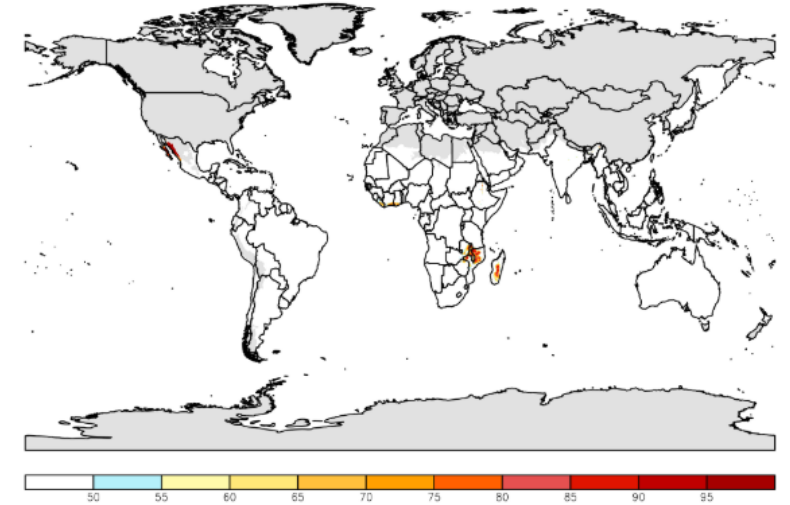
GEFS Week-1 POE Tmax/HI > 90th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 18Dec2024 - 24Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fcst/gefs\\_heat/gefs\\_comb3\\_week1\\_glb\\_prob\\_90.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/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: 18Dec2024 - 24Dec2024

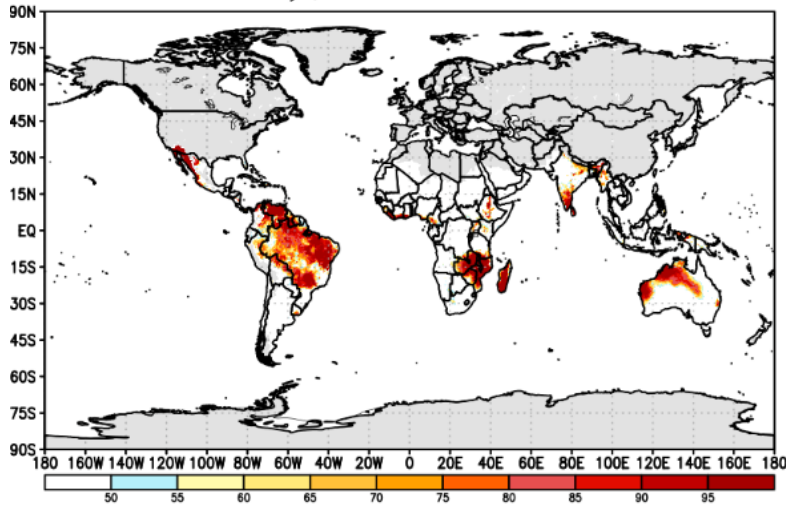


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# GEFS Week-1 HI/Tmax Hybrid POE with Respect to Percentile Climo. Thresholds

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

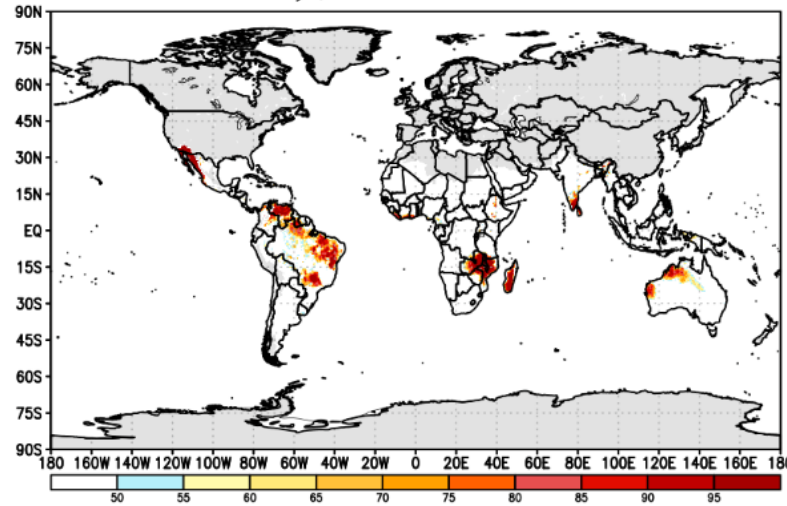
GEFS Week-1 POE Tmax/HI Hybrid > 80th Pctle.  
> 3 Cons. days, Valid: 18Dec2024 – 24Dec2024



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

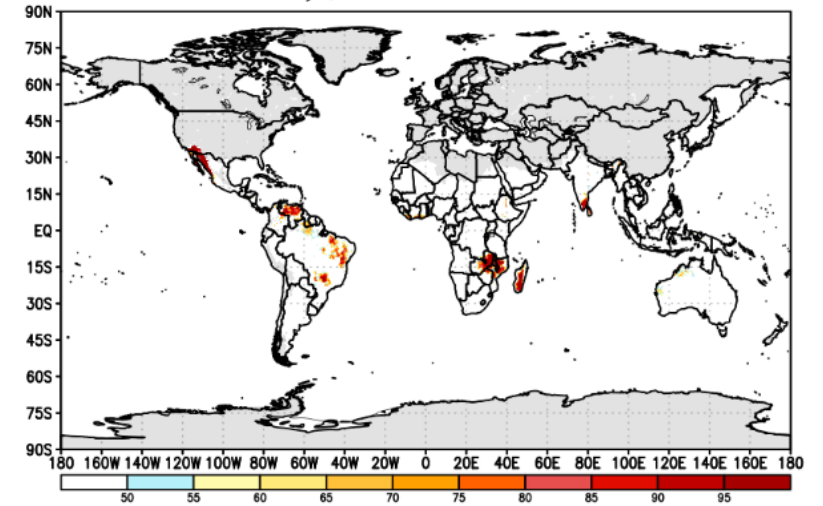
GEFS Week-1 POE Tmax/HI Hybrid > 90th Pctle.  
> 3 Cons. days, Valid: 18Dec2024 – 24Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/global\\_heat/gefs\\_week1\\_prob\\_hybrid\\_3\\_glb\\_90.png](https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week1_prob_hybrid_3_glb_90.png)

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

GEFS Week-1 POE Tmax/HI Hybrid > 95th Pctle.  
> 3 Cons. days, Valid: 18Dec2024 – 24Dec2024



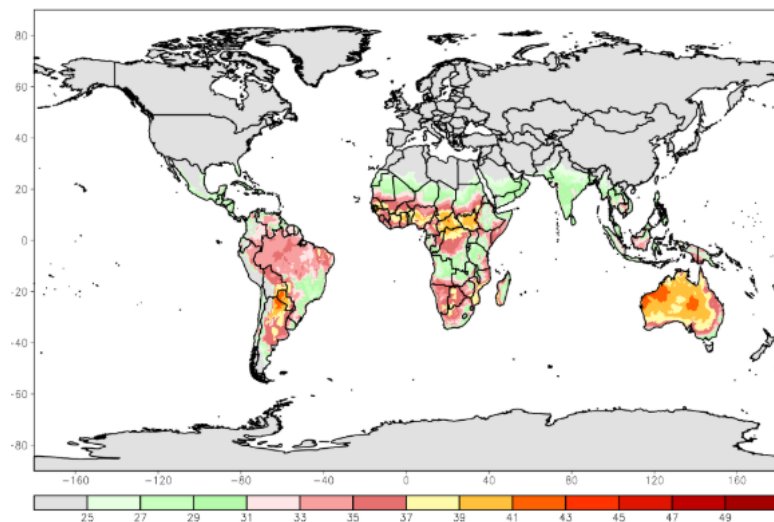
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# GEFS Week-1 Tmax Percentile Climatology (°C)

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

GEFS Week-1 Tmax Percentile Climo (Cels.), 80th Pctle.

Valid: 18Dec2024 - 24Dec2024

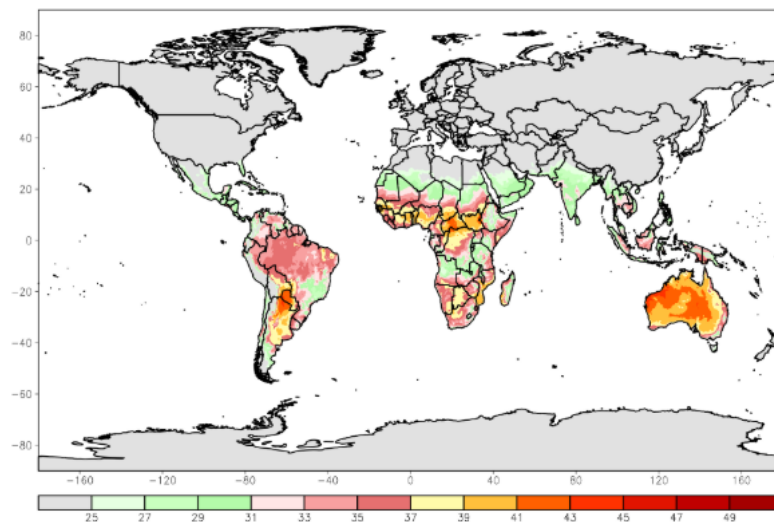


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## Tmax 90<sup>th</sup> Percentile

GEFS Week-1 Tmax Percentile Climo (Cels.), 90th Pctle.

Valid: 18Dec2024 - 24Dec2024

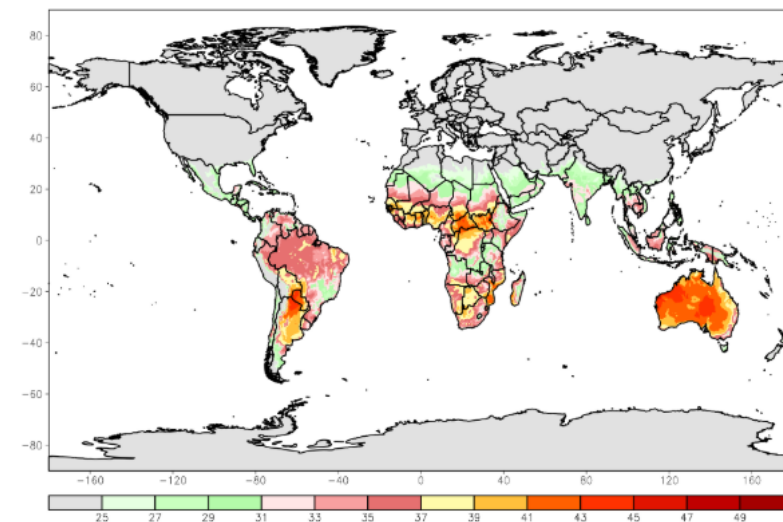


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## Tmax 95<sup>th</sup> Percentile

GEFS Week-1 Tmax Percentile Climo (Cels.), 95th Pctle.

Valid: 18Dec2024 - 24Dec2024

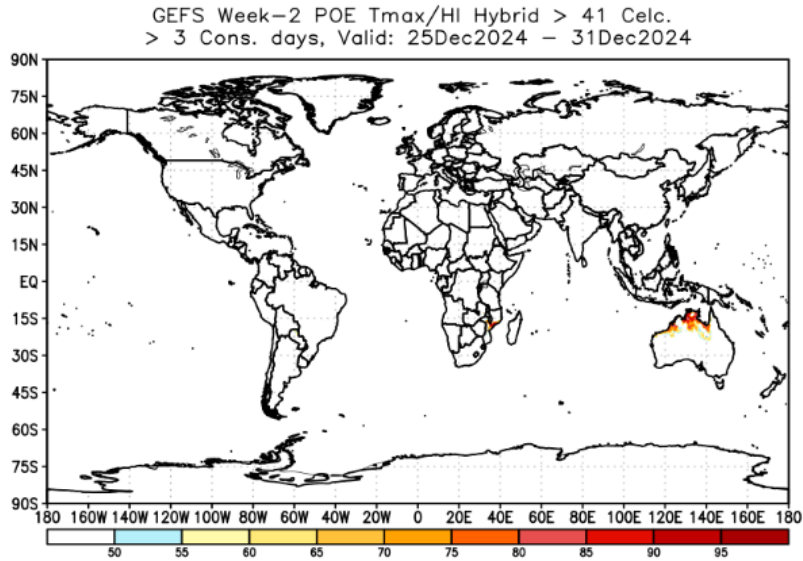


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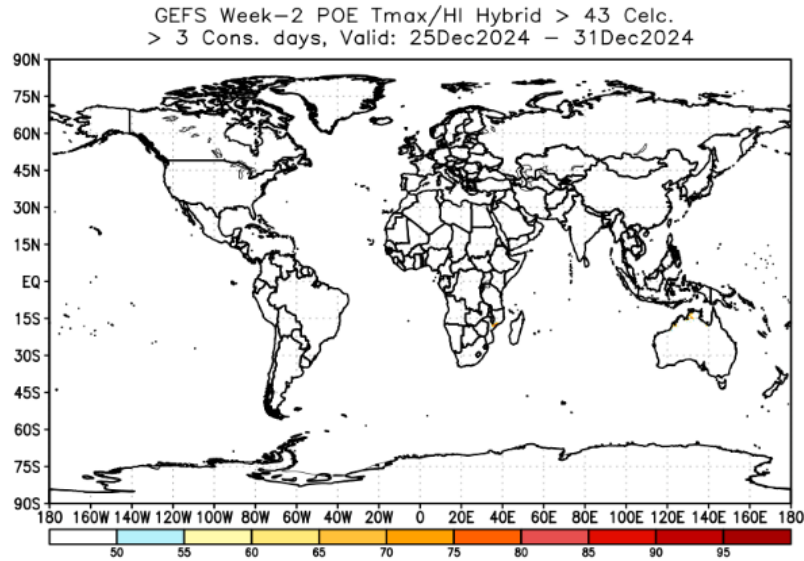
# GEFS Week-2 HI/Tmax Hybrid POE with Respect to Fixed Thresholds

**>41°C & > 3 Consc. Days**



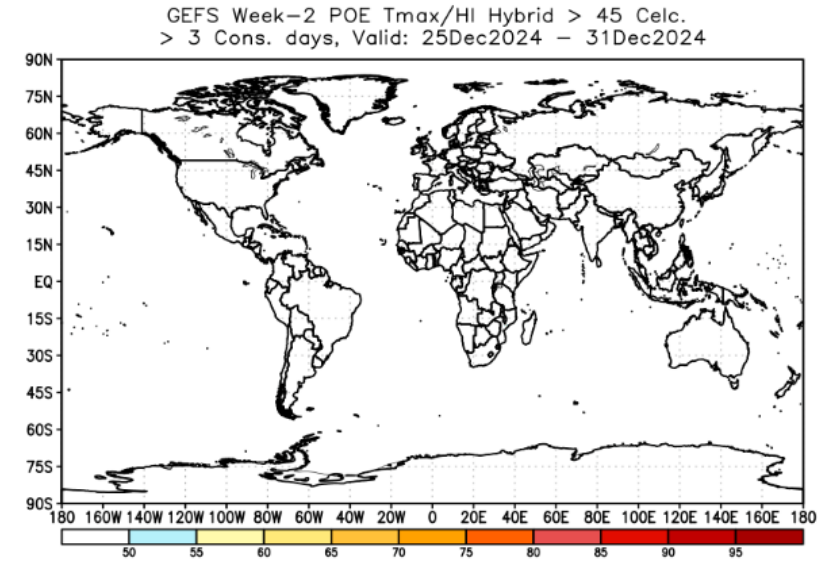
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**>43°C & > 3 Consc. Days**



[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**

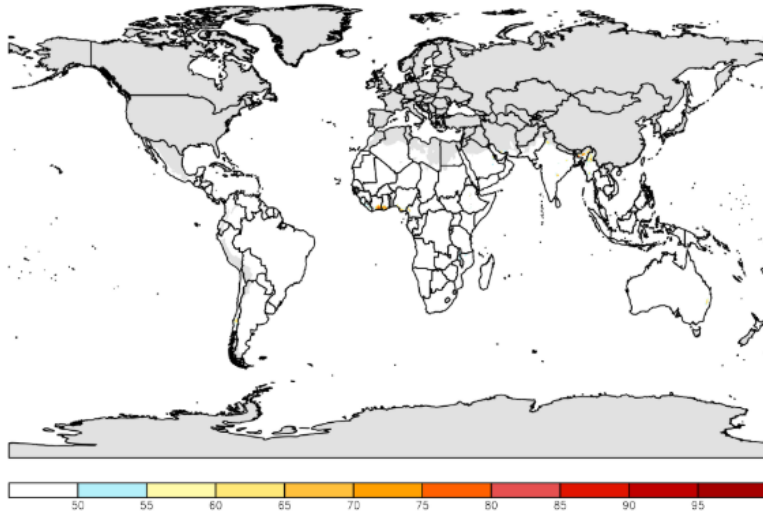


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# GEFS Week-2 POE, Tmax/HI with Calmer Wind (< 5m s-1) and less Cloud Cover (< 50%)

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

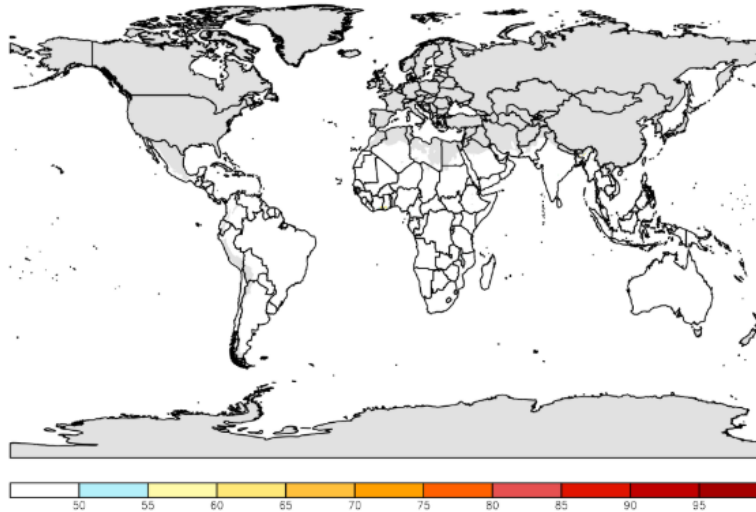
GEFS Week-2 POE Tmax/HI > 80th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



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

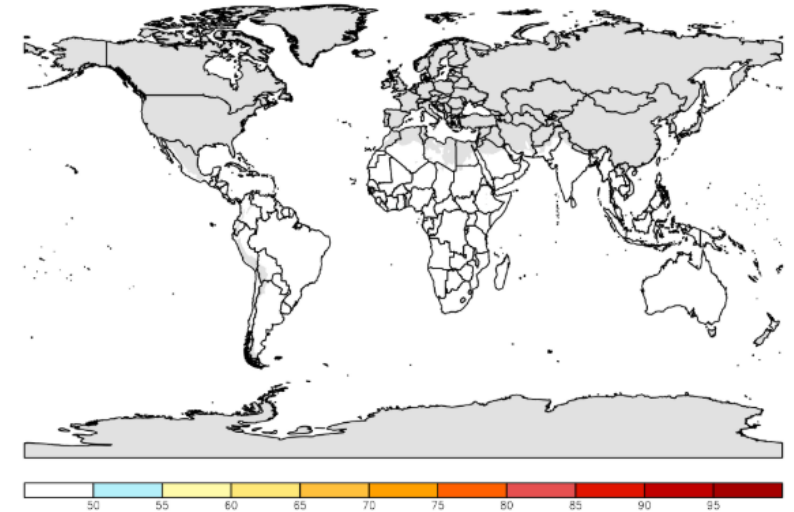
GEFS Week-2 POE Tmax/HI > 90th Pctle. with W. Speed < 5m/sec &  
Cloud C. < 50%, > 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



[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: 25Dec2024 - 31Dec2024

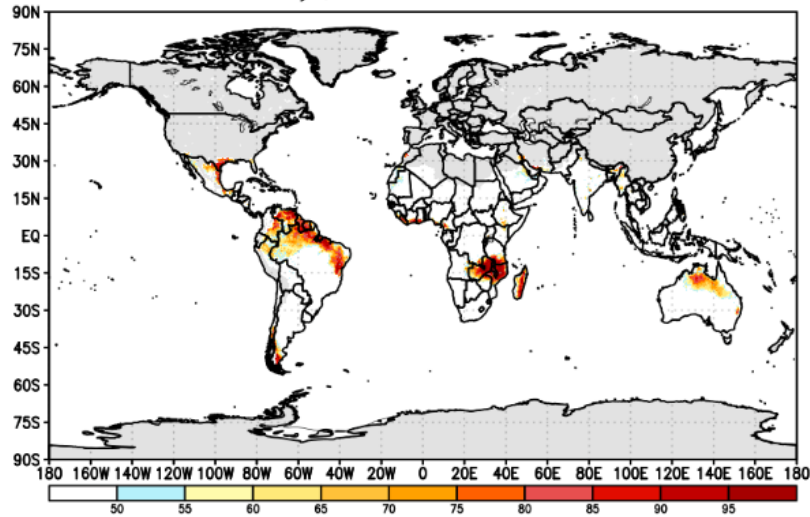


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# GEFS Week-2 HI/Tmax Hybrid POE with Respect to Percentile Climo. Thresholds

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

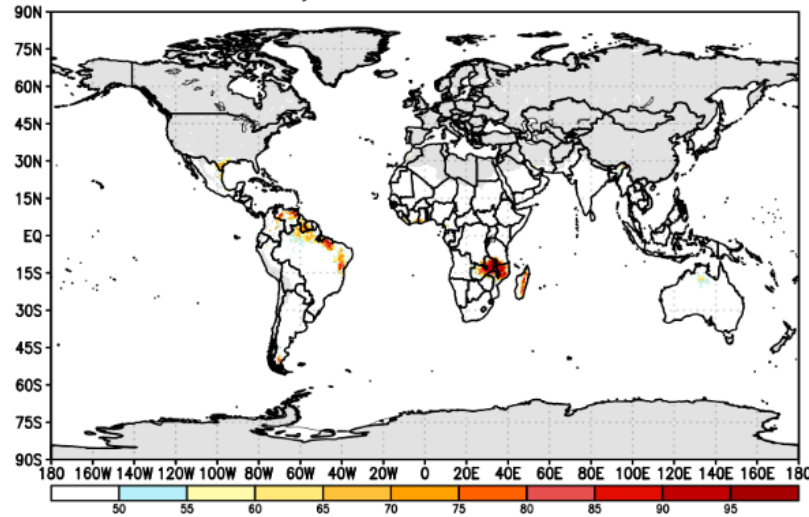
GEFS Week-2 POE Tmax/HI Hybrid > 80th Pctle.  
> 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/global\\_heat/gefs\\_week2\\_prob\\_hybrid\\_3\\_glb\\_80.png](https://ftp.cpc.ncep.noaa.gov/International/global_heat/gefs_week2_prob_hybrid_3_glb_80.png)

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

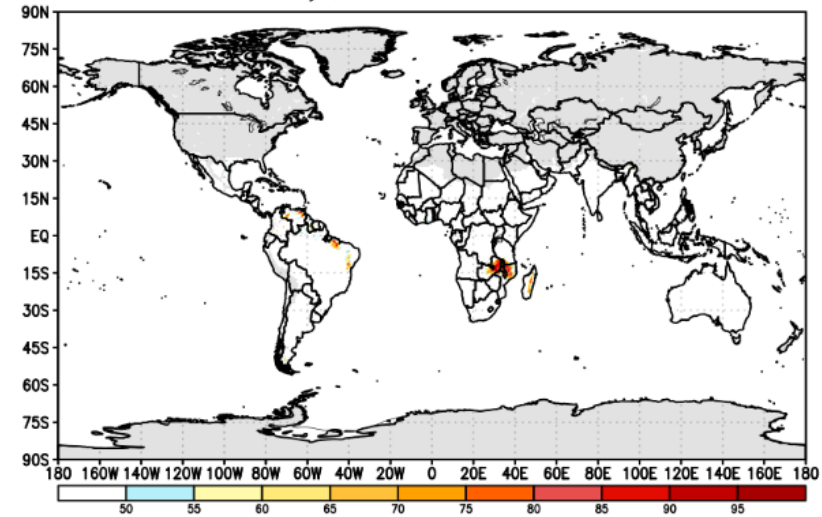
GEFS Week-2 POE Tmax/HI Hybrid > 90th Pctle.  
> 3 Cons. days, Valid: 25Dec2024 - 31Dec2024



[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: 25Dec2024 - 31Dec2024



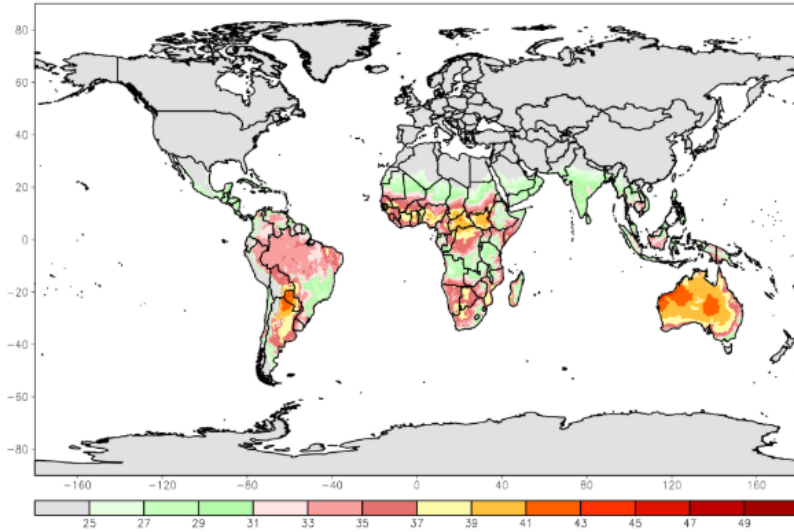
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# GEFS Week-2 Tmax Percentile Climatology (°C)

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

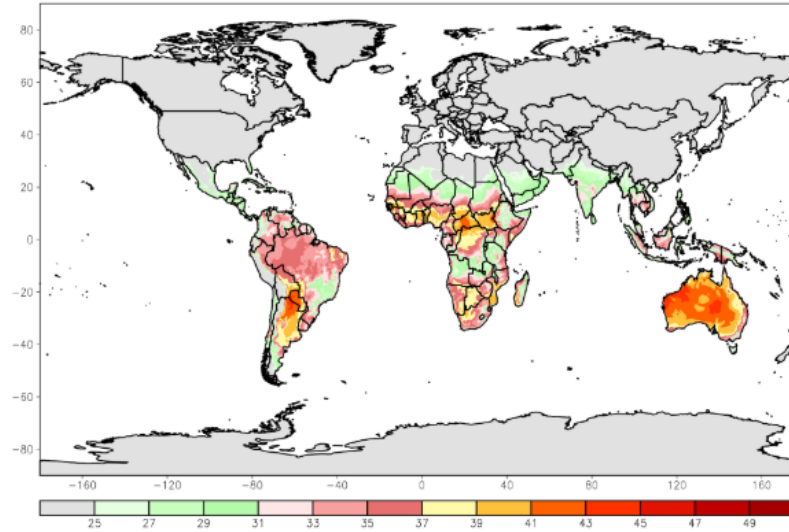
GEFS Week-2 Tmax Percentile Climo (Cels.), 80th Pctle.  
Valid: 25Dec2024 - 31Dec2024



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

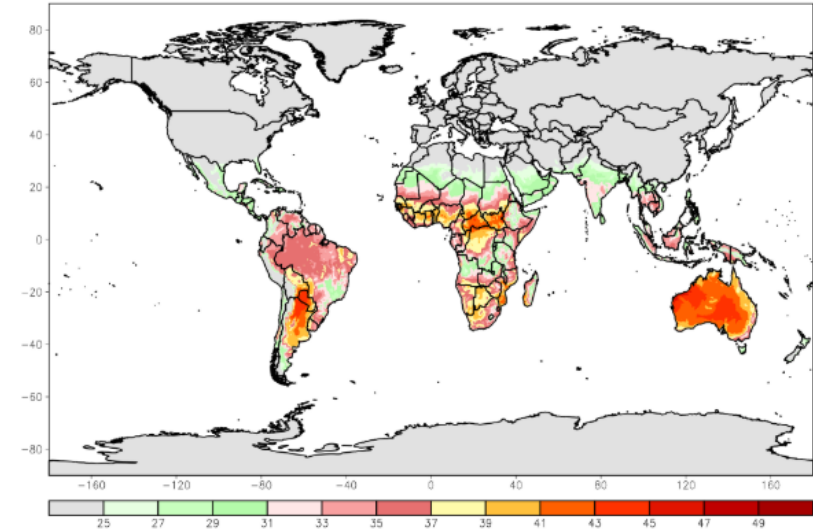
GEFS Week-2 Tmax Percentile Climo (Cels.), 90th Pctle.  
Valid: 25Dec2024 - 31Dec2024



[https://ftp.cpc.ncep.noaa.gov/International/extreme\\_fcst/gefs\\_heat/gefs\\_hybrid\\_week2\\_glb\\_clm\\_90.gif](https://ftp.cpc.ncep.noaa.gov/International/extreme_fcst/gefs_heat/gefs_hybrid_week2_glb_clm_90.gif)

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

GEFS Week-2 Tmax Percentile Climo (Cels.), 95th Pctle.  
Valid: 25Dec2024 - 31Dec2024

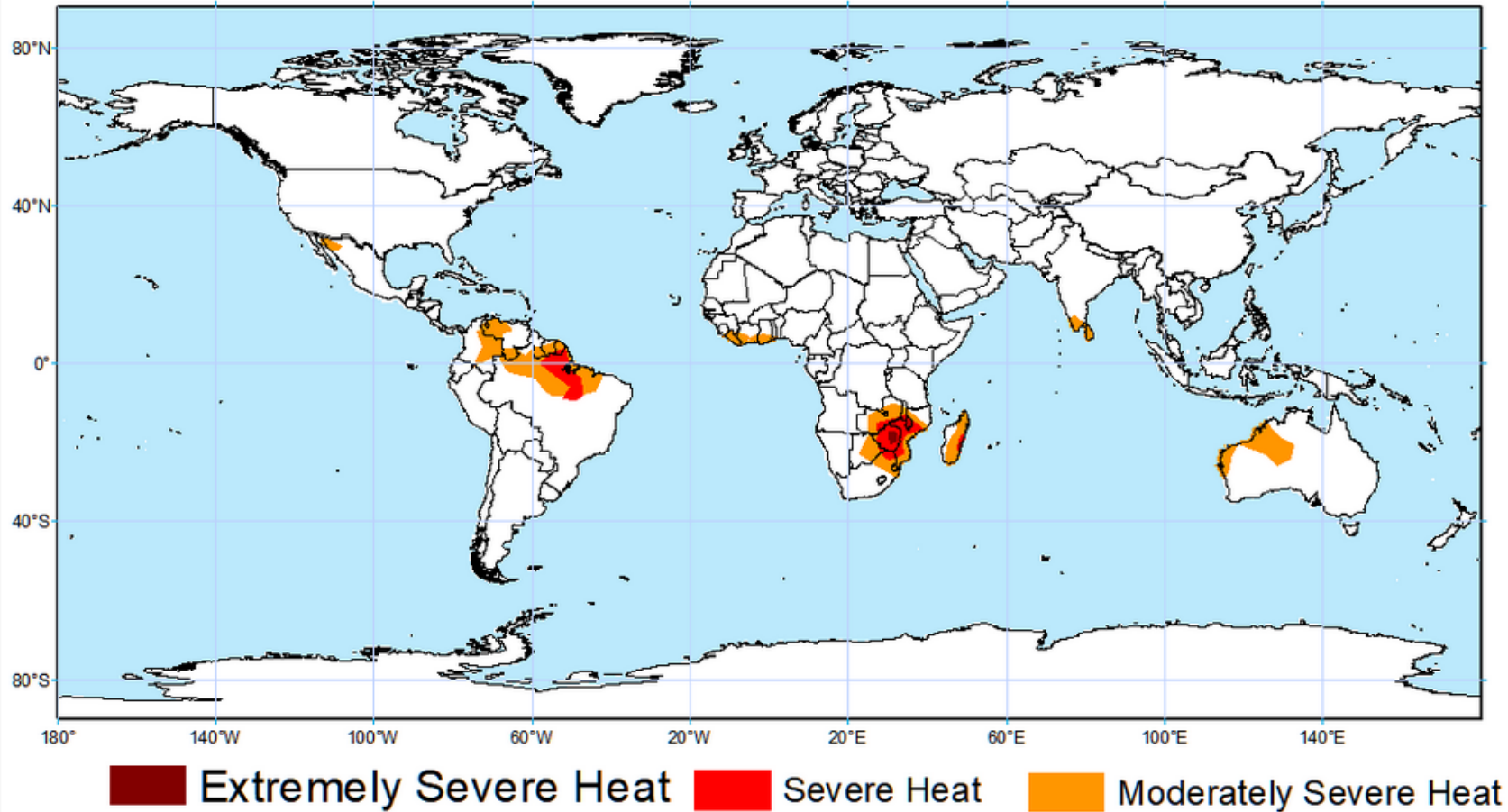


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## Week-1 Experimental Global Heat Hazard Outlook

Issued: 17 Dec 2024

Valid: 18 - 24 Dec 2024



- There is an increased chance of *moderately severe heat* over the northern portions of Southern America, small parts of Mexico, part of Western Africa and Southern Africa, Madagascar and Western part of Australia.
- There is an elevated likelihood of severe and *extremely severe heat* over portions of the Southern America and Southern Africa.

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

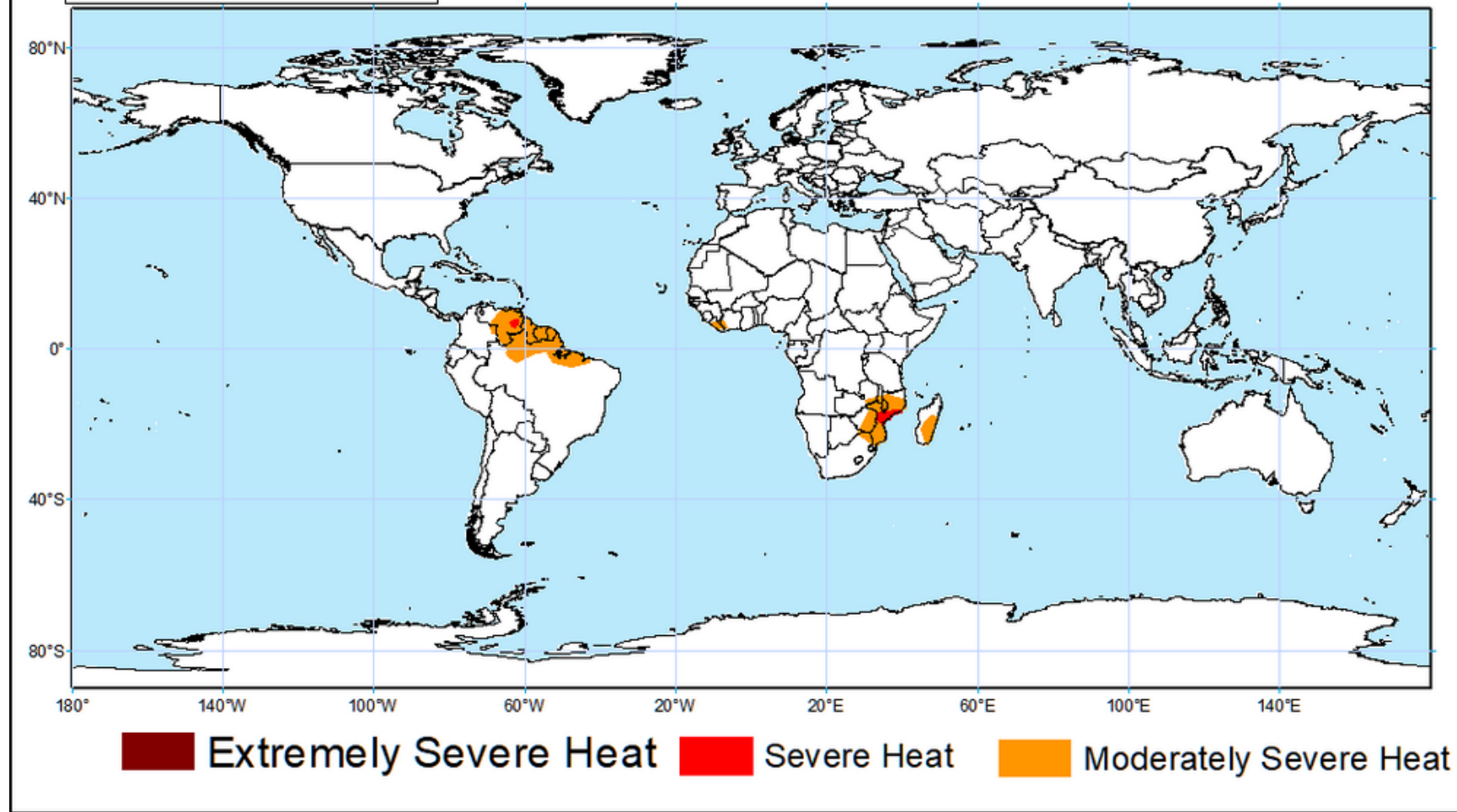
**Severe Heat:** Tmax/HI are among the 10% highest values over the 30-year period 1991-2020

**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**

## Week-2 Experimental Global Heat Hazard Outlook Valid: 25 - 31 Dec 2024

Issued 17 Dec 2024



- There is an increased chance for *moderately severe heat* over portions of the northern areas of Southern America, small part of Southern Africa and Madagascar.
- There is an increased chance for *Severe Heat* over small parts of the Southern Africa.

**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**