Heat Hazards Outlooks for the Caribbean

Date of Issue: 2025-01-07 Week-1, Valid for: 08 - 14 January 2025 Week-2, Valid for: 15 - 21 January 2025



Week-1, Mean Sea Level Pressure & 500-hPa Height

7-day Total

GEFS Week-1 Mean Sea Level Pressure Average Valid: 20250108 - 20250114



7-day Anomaly

GEFS Week-1 Mean Sea Level Pressure Anomaly Valid: 20250108 - 20250114



Next week, mean sea level pressure is forecasted to be slightly-below-average across southern Caribbean and northern South America, while it is near normal in the north Caribbean region

GEFS Week-1 500-hPa Gea-Potential Height Average Valid: 20250108 - 20250114



GEFS Week-1 500-hPa Geo-Potential Height Anomaly Valid: 20250108 - 20250114



At 500-hPa, geopotential height anomalies in the region also expected to be above-normal for next week.

Week-1, 925-hPa and 200-hPa Wind

7-day Total



7-day Anomaly

GEFS Week-1 925-hPa Wind Speed and Direction, Anomaly Valid: 20250108 - 20250114



For week-1, low-level easterly winds are expected to weaker over most of the Caribbean region and it is near average over northern South America



GEFS Week-1 200-hPa Divergence and Wind Average

GEFS Week-1 200-hPa Divergence and Wind Anomaly Valid: 20250108 - 20250114



Upper-level convergence is expected over much of the northern South American region.

Week-1, Daily Tmax/HI Hybrid Index Exceedance Probability, with Respect to Percentile Thresholds

hybrid > 80th percentile, ≥3 consecutive days

GEFS Week-1 Tmox/HI hybrid exceedance Prob. > 80th, > 3 consec. days Valid: 20250108 - 20250114



hybrid > 90th percentile, ≥3 consecutive days

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days Valid: 20250108 - 20250114

hybrid ≥ 95th percentile, ≥3 consecutive days

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days Valid: 20250108 - 20250114



There is a high chance for daily Tmax/HImax hybrid index to exceed the 80th percentile for at least 3 consecutive days over northern South America, ABC Islands and northern Lesser Antilles . There is also a moderate to high chance for daily Tmax/HImax hybrid index to exceed the 90th percentile for at least 3 consecutive days over ABC Islands and northern South America.

Week-1, Daily Tmax/HI Hybrid Index Exceedance Probability, with Respect to Fixed Thresholds

hybrid > 33°C, ≥3 consecutive days

FS Week-1 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da Valid: 20250108 - 20250114



hybrid > 35°C, ≥3 consecutive days

FS Week-1 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da Valid: 20250108 - 20250114



hybrid > 37°C, ≥3 consecutive days

FS Week-1 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da Valid: 20250108 - 20250114



There is a high probability for daily Tmax/HImax hybrid index to exceed 33°C for at least 3 consecutive days over northern South America There is also a moderate to high chance for daily Tmax/HImax hybrid index to exceed 35°C over southwestern French Guyana

Week-1, Convergence of Evidences

GEFS Week-1 500-hPa Geo-Potential Height Anomaly Valid: 20250108 - 20250114



- At 500-hPa, model forecasts indicate above average height over the Caribbean region and
- Hybrid index exceedance probability forecasts indicate: High chances for the hybrid index to exceed the 80th percentile over northern South America. High chances for the hybrid index to exceed 33°C over in this region.

GEFS Week-1 Tmox/Hi hybrid exceedance Prob. > 80th, > 3 consec. days Valid: 20250108 - 20250114



GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days Valid: 20250108 - 20250114



GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 95th, > 3 cansec, days Valid: 20250108 - 20250114



FS Week-1 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da Valid: 20250108 - 20250114



FS Week-1 Tmax/HI hybrid exceedance Prab. > 35 deg. Cels., > 3 consec. da Valid: 20250108 - 20250114



FS Week-1 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da Valid: 20250108 - 20250114



Week-2, Mean Sea Level Pressure & 500-hPa Height

7-day Total

GEFS Week-2 Mean Sea Level Pressure Average Valid: 20250115 - 20250121



7-day Anomaly

GEFS Week-2 Mean Sea Level Pressure Anomaly Valid: 20250115 - 20250121



For week-2, mean sea level pressure is forecasted to be slightlyabove-average across Caribbean and nearaverage across northern South America.

GEF5 Week-2 500-hPa Gea-Potential Height Average Valid: 20250115 - 20250121



GEFS Week-2 500-hPa Geo-Potential Height Anomaly Valid: 20250115 - 20250121



At 500-hPa, geopotential height anomalies in the region also expected to be above-average over central Caribbean region and near-average over northern South America for next week.

Week-2, 925-hPa and 200-hPa Wind

7-day Total



7-day Anomaly

GEFS Week-2 925-hPa Wind Speed and Direction, Anomaly Valid: 20250115 - 20250121



For week-2, low-level easterly winds are expected to be weaker over Caribbean region and near-average over northern South America.







Upper-level conergence is expected over much of the Caribbean region.

Week-2, Daily Tmax/HI Hybrid Index Exceedance Probability, with Respect to Percentile Thresholds

hybrid > 80th percentile, ≥3 consecutive days

GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days Valid: 20250115 - 20250121



hybrid > 90th percentile, ≥3 consecutive days

GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days Valid: 20250115 - 20250121

≥3 consecutive days GEFS Week-2 Tmox/HI hybrid exceedance Prob. > 95th, > 3 consec. days

hybrid \geq 95th percentile,

Velid: 20250115 - 20250121

There is a high chance for daily Tmax/HImax hybrid index to exceed the 80th percentile for at least 3 consecutive days over Lesser Antilles, ABC Islands and northern South America. However, probabilities are weaker over northern South America. There is also a moderate to high chance for daily Tmax/HImax hybrid index to exceed the 90th percentile for at least 3 consecutive days over Lesser Antiles.

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Week-2, Daily Tmax/HI Hybrid Index Exceedance Probability, with Respect to Fixed Thresholds

hybrid > 33°C, ≥3 consecutive days

FS Week-2 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da Valid: 20250115 - 20250121



hybrid > 35°C, ≥3 consecutive days

FS Week-2 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da Valid: 20250115 - 20250121



hybrid > 37°C, ≥3 consecutive days

FS Week-2 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da Valid: 20250115 - 20250121



There is a high probability for daily Tmax/HImax hybrid index to exceed 33°C for at least 3 consecutive days over northern South America. There is also a moderate to high chance for daily Tmax/HImax hybrid index to exceed 35°C over southwestern Guyana.

Week-2, Convergence of Evidences

GEFS Week-2 500-hPa Geo-Potential Height Anomaly Valid: 20250115 - 20250121



- At 500-hPa, model forecasts indicate expected to be above-average over central Caribbean region and near-average over northern South America for next week.
- Hybrid index exceedance probability forecasts indicate: High chances for the hybrid index to exceed the 80th percentile over Lesser Antilles, ABC Islands and northern South America. High chances for the hybrid index to exceed 33°C over northern South America

GEFS Week-2 Tmox/HI hybrid exceedance Prob. > 80th, > 3 consec. days Valid: 20250115 - 20250121



GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days Valid: 20250115 - 20250121







FS Week-2 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da Valid: 20250115 - 20250121



FS Week-2 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da Valid: 20250115 - 20250121



FS Week-2 Tmax/HI tybrid exceedance Prob. > 37 deg. Cela., > 3 consec. da Valid: 20250115 - 20250121



Urban Heat Island Alerts for Caribbean



https://www.cpc.ncep.noaa.gov/products/international/UHI/UHI_alert_Caribbean.html

Urban Heat Island Forecasts Week-1

	Stations	80th Pctl Clim	Jan-08-2025			Jan-09-2025			Jan-10-2025			Jan-11-2025			Jan-12-2025		
NO			Tmax	Rain	Alert												
1	Barranquilla	28.6 degC															
2	Cartagena	29.6 degC															
3	Chaguanas	28.2 degC												_			
4	Maracaibo_La_Chinita	30.0 degC															
5	Miami_FI	28.6 degC															



https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb_day_80.html

Urban Heat Island Forecasts Weeks-2, 3, & 4

NO	Stations	Week 2: 13.	Week 3: 20.	Jan2025 - 2	6Jan2025	Week 4: 27Jan2025 - 02Feb2025							
		80th Pctl Clim	Tmax	Rain	Alert	80th Pctl Clim	Tmax	Rain	Alert	80th Pctl Clim	Tmax	Rain	Alert
1	Barranquilla	28.8 degC				28.9 degC				29.1 degC			
2	Cartagena	30.2 degC				30.6 degC				30.7 degC			
3	Chaguanas	28.4 degC				28.2 degC				28.5 degC			
4	Maracaibo_La_Chinita	30.4 degC				31.0 degC				31.5 degC			



https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb_week234_80.html

Week-1 Heat Hazards Outlook



There is an increased chance for moderately severe heat over Guyana, Suriname and French Guiana.

Hybrid index probability of exceedance forecasts suggest high chances for persistent heat in the orange and red shaded areas.

Week-1 Lesser Antilles Heat Hazards Outlook



There are no heat hazards forecast over the Lesser Antilles in week 1.

Week-2 Heat Hazards Outlook



There is an increased chance for moderately severe heat over northern and southwestern Guyana and over northern French Guiana.

Hybrid index probability of exceedance forecasts suggest high chances for persistent heat in the orange and red shaded areas.

Week-2 Lesser Antilles Heat Hazards Outlook



There are no heat hazards forecast over the Lesser Antilles in week 2.

For More Information Please Visit

Forecasting Tools:

https://www.cpc.ncep.noaa.gov/products/international/endalk/climate health/heat-health_forecasts_alt.shtml

Urban Heat Island Alerts:

https://www.cpc.ncep.noaa.gov/products/international/UHI/UHI_alert _____map.html