

# Heat Hazards Outlooks for the Caribbean

**Date of Issue: 2024-12-17**

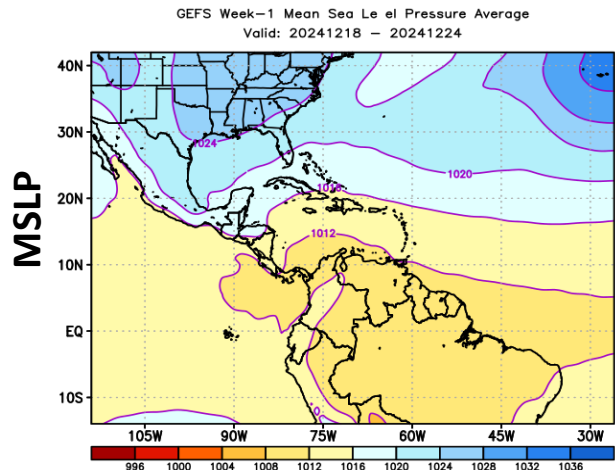
**Week-1, Valid for: 18 - 24 December 2024**

**Week-2, Valid for: 25 - 31 December 2024**

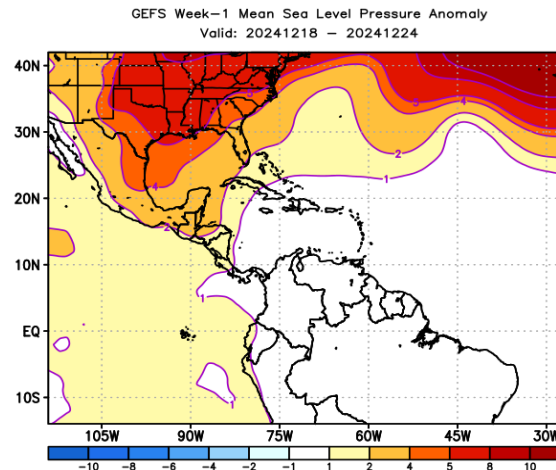


# Week-1, Mean Sea Level Pressure & 500-hPa Height

## 7-day Total



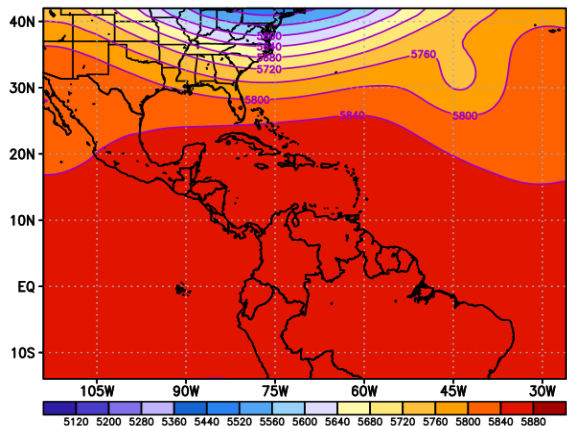
## 7-day Anomaly



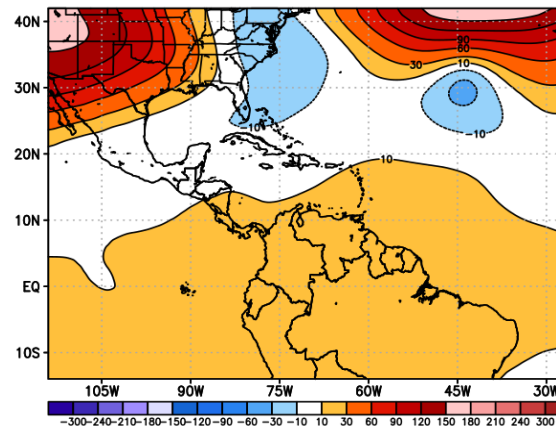
Next week, mean sea level pressure is forecasted to be slightly-above-average across western-northern Caribbean and near-normal across central-eastern Caribbean regions.

## Geop. Height (500-hPa)

GEFS Week-1 500-hPa Geo-Potential Height Average  
Valid: 20241218 - 20241224



GEFS Week-1 500-hPa Geo-Potential Height Anomaly  
Valid: 20241218 - 20241224

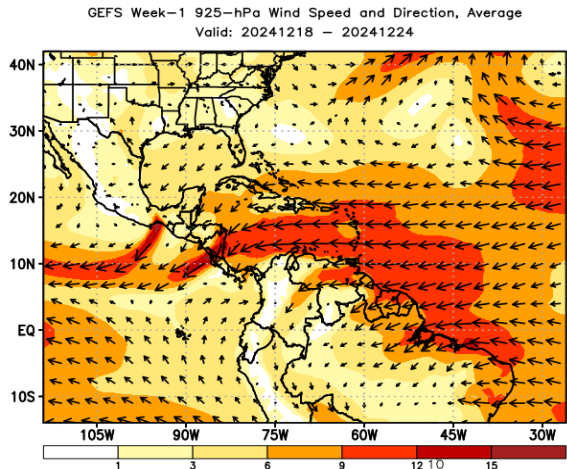


At 500-hPa, geopotential height anomalies in the region also expected to be below-average over northern Bahamas, near-normal over most central and northern locations and slightly-above-average over Lesser Antilles into southern Caribbean and northern South America for next week.

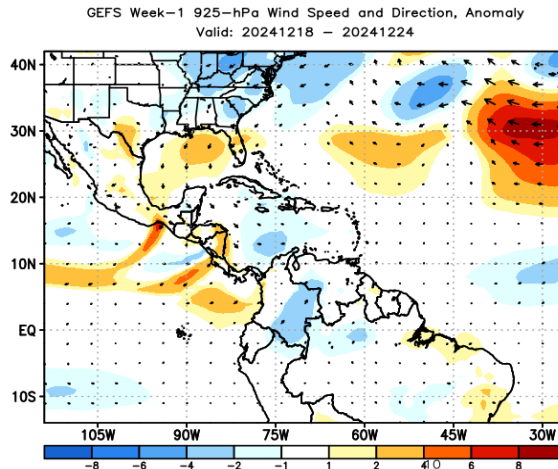
# Week-1, 925-hPa and 200-hPa Wind

## 7-day Total

Wind (925-hPa)

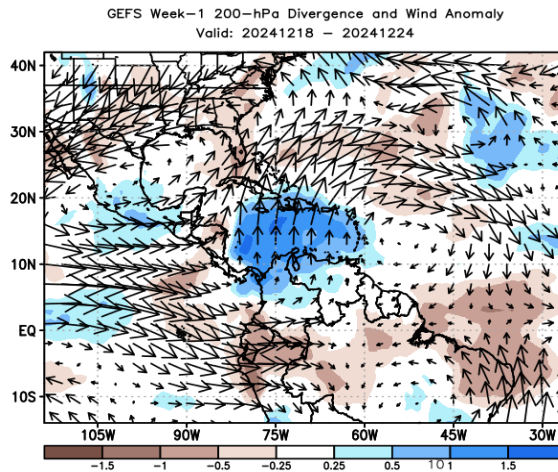
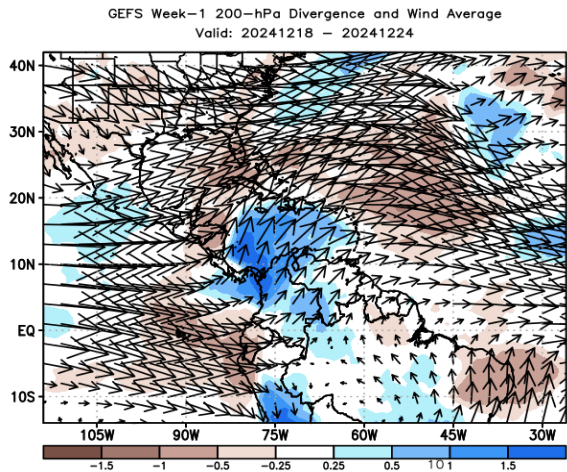


## 7-day Anomaly



For week-1, low-level winds are expected to be above-normal over Gulf of Mexico, slightly-below-normal over Jamaica and more southern Caribbean islands compared with near-normal speeds over many central and eastern islands.

Wind & Diverg. (200-hPa)

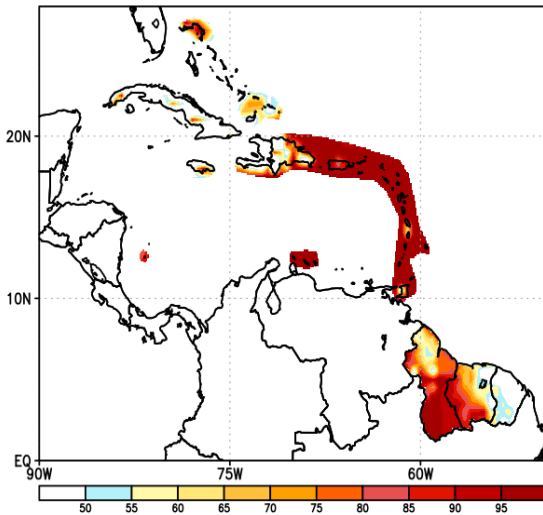


Upper-level divergence is expected over many islands in central, eastern, and southern locations in the Caribbean region.

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

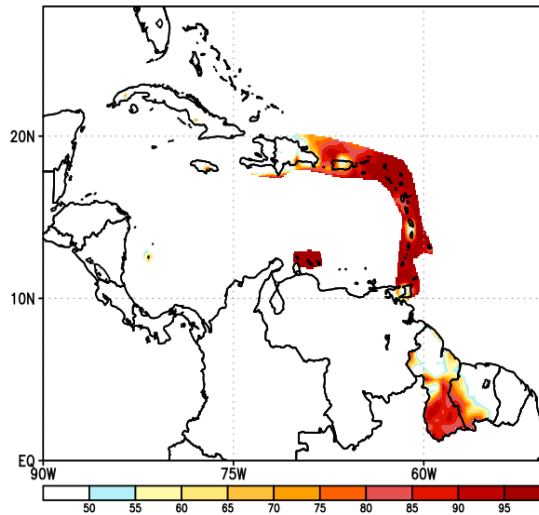
**hybrid > 80th percentile,  
≥3 consecutive days**

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days  
Valid: 20241218 – 20241224



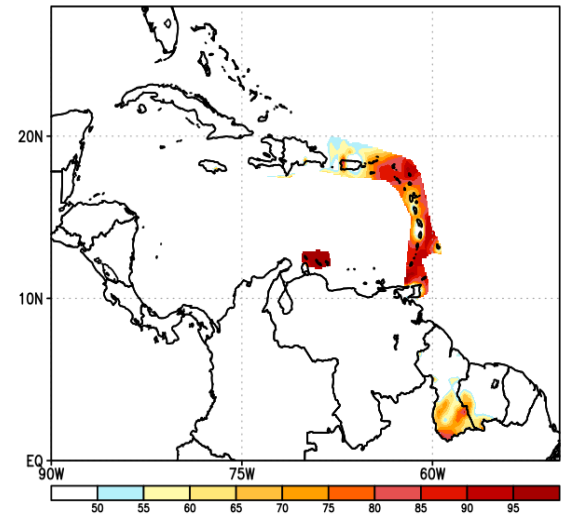
**hybrid > 90th percentile,  
≥3 consecutive days**

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days  
Valid: 20241218 – 20241224



**hybrid ≥ 95th percentile,  
≥3 consecutive days**

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days  
Valid: 20241218 – 20241224

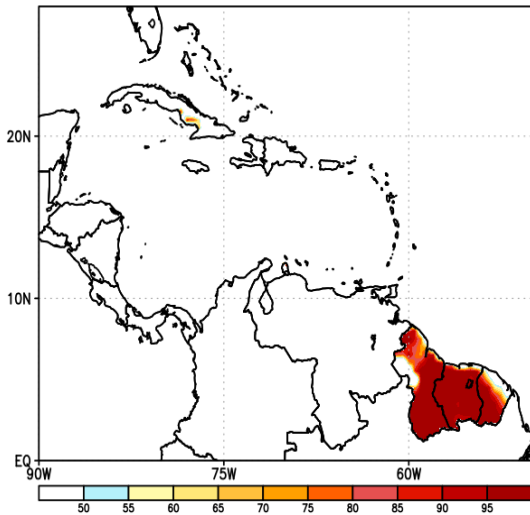


**There is a high chance for daily Tmax/HI max hybrid index to exceed the 80th percentile for at least 3 consecutive days over parts of the Dominican Republic, Lesser Antilles islands, Aruba, Bonaire, and Curacao (ABC) islands, Trinidad and Tobago, and most of Guyana and Suriname. There is also a moderate to high chance for daily Tmax/HI max hybrid index to exceed the 95th percentile for at least 3 consecutive days over many Lesser Antilles islands, ABC islands, and the southern half of Guyana into southwest Suriname.**

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

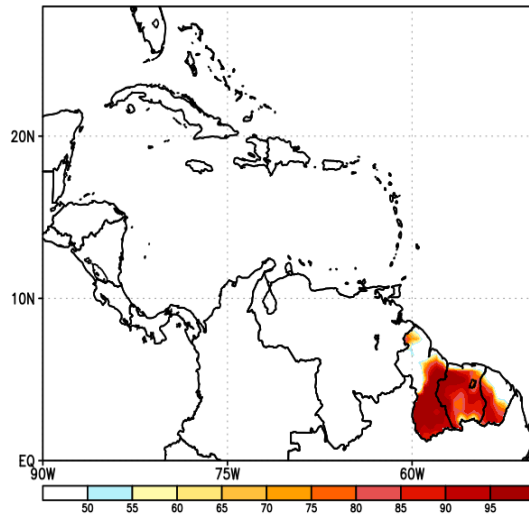
**hybrid > 33°C,  
≥3 consecutive days**

FS Week-1 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da  
Valid: 20241218 - 20241224



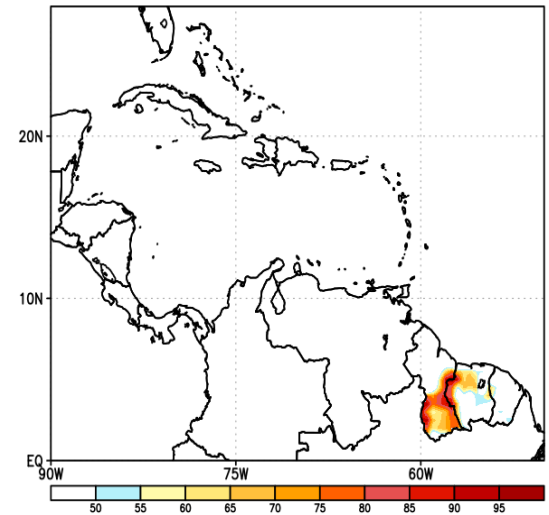
**hybrid > 35°C,  
≥3 consecutive days**

FS Week-1 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da  
Valid: 20241218 - 20241224



**hybrid > 37°C,  
≥3 consecutive days**

FS Week-1 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da  
Valid: 20241218 - 20241224

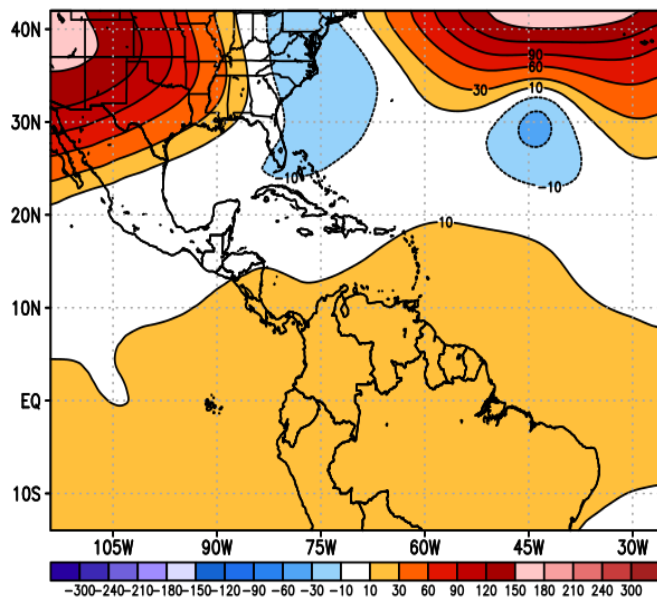


**There is a high probability for daily Tmax/HImax hybrid index to exceed 33°C for at least 3 consecutive days over most of Guyana, Suriname, and French Guiana. There is also a moderate to high chance for daily Tmax/HImax hybrid index to exceed 37°C over the southern half of Guyana into eastern Suriname.**

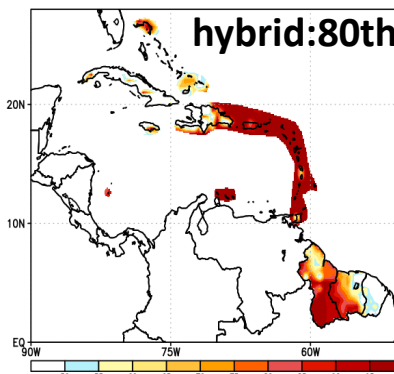


# Week-1, Convergence of Evidences

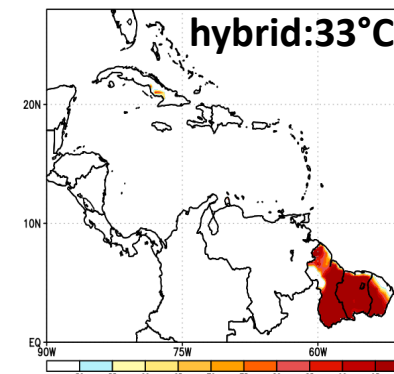
GEFS Week-1 500-hPa Geo-Potential Height Anomaly  
Valid: 20241218 - 20241224



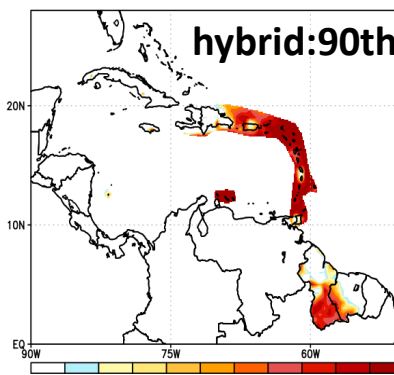
GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days  
Valid: 20241218 - 20241224



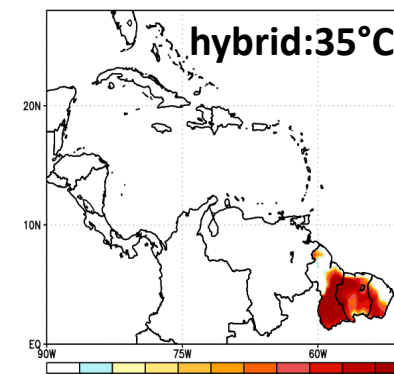
FS Week-1 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. do  
Valid: 20241218 - 20241224



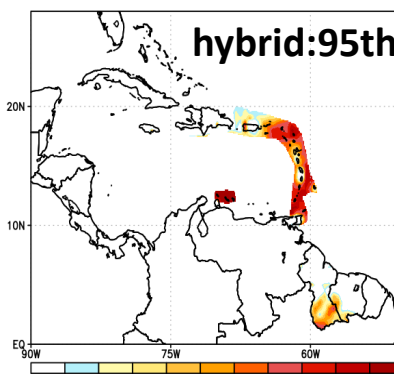
GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days  
Valid: 20241218 - 20241224



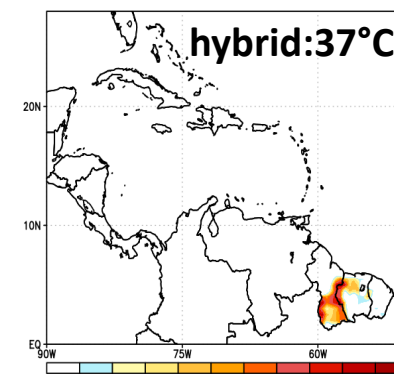
FS Week-1 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. do  
Valid: 20241218 - 20241224



GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days  
Valid: 20241218 - 20241224



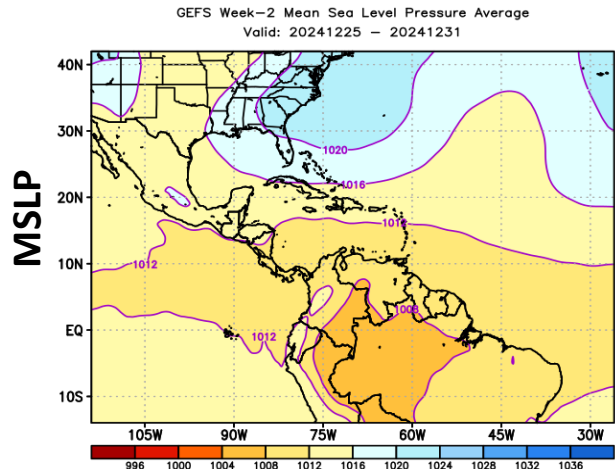
FS Week-1 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. do  
Valid: 20241218 - 20241224



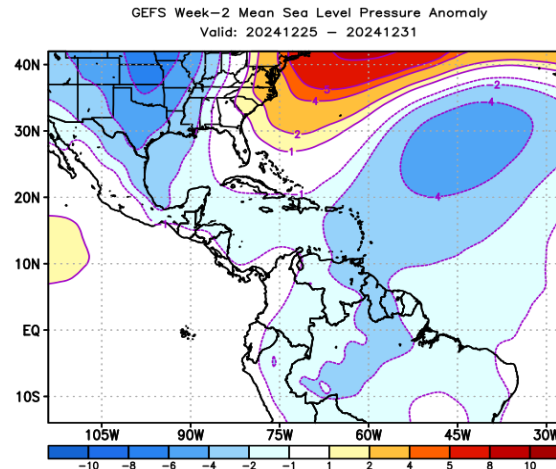
- At 500-hPa, model forecasts indicate below-average over conditions over the northern Bahamas, near-normal conditions over most central and northern locations in the region, and slightly-above-average conditions over the Lesser Antilles into southern Caribbean and northern South America for next week.
- Hybrid index exceedance probability forecasts indicate:
  - High chances for the hybrid index to exceed the 95th percentile over many Lesser Antilles islands, ABC islands, and the southern half of Guyana into southwest Suriname.
  - High chances for the hybrid index to exceed 37°C over the southern half of Guyana into eastern Suriname.

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

## 7-day Total



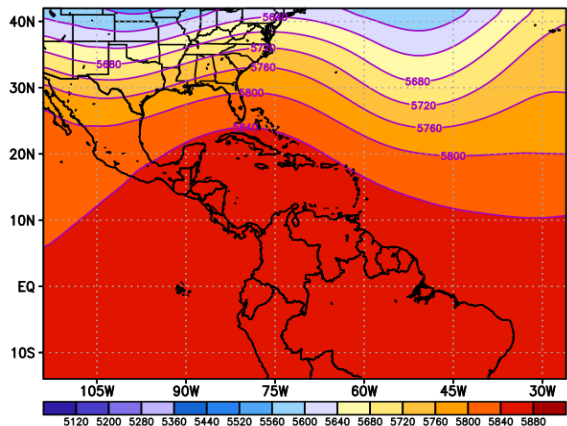
## 7-day Anomaly



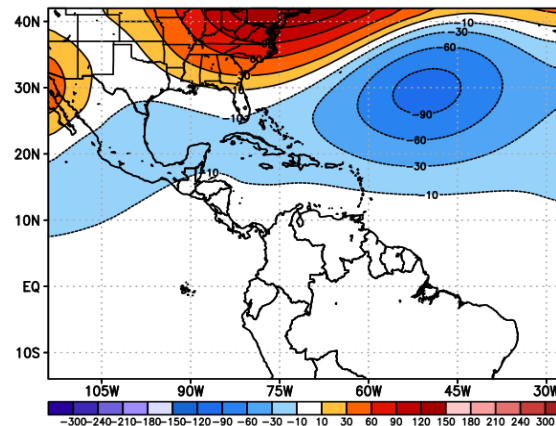
For week-2, mean sea level pressure is forecasted to be slightly-below-average across much of the Caribbean and near-normal over near Cuba and the Bahamas.

## Geop. Height (500-hPa)

GEFS Week-2 500-hPa Geo-Potential Height Average  
Valid: 20241225 - 20241231



GEFS Week-2 500-hPa Geo-Potential Height Anomaly  
Valid: 20241225 - 20241231



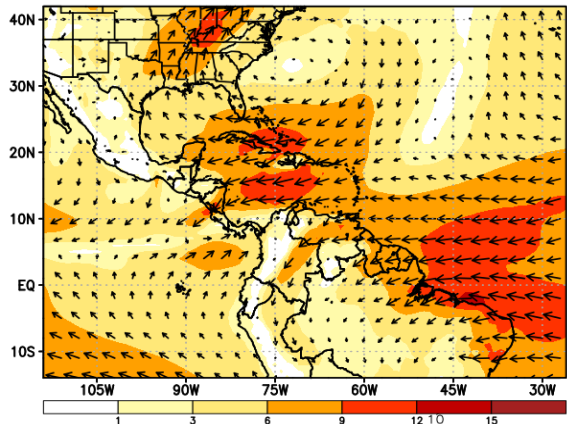
At 500-hPa, geopotential height anomalies in the region expected to be slightly-below-average over northern and central Caribbean and near-normal over more southern locations including northern South America, for next week.

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

## 7-day Total

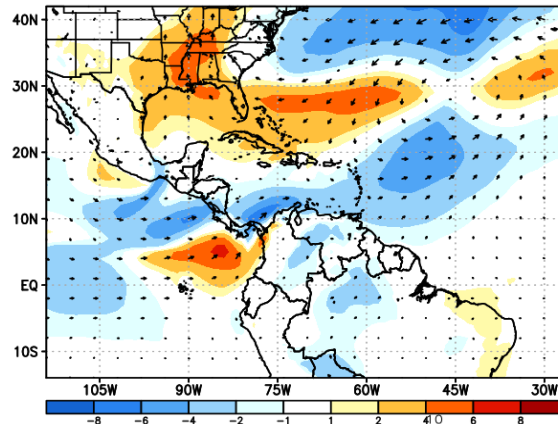
Wind (925-hPa)

GEFS Week-2 925-hPa Wind Speed and Direction, Average  
Valid: 20241225 - 20241231



## 7-day Anomaly

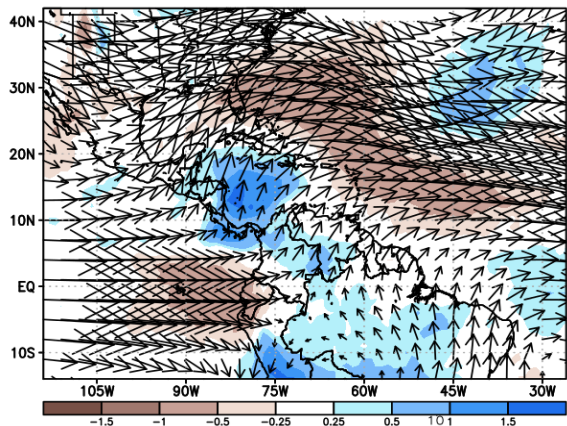
GEFS Week-2 925-hPa Wind Speed and Direction, Anomaly  
Valid: 20241225 - 20241231



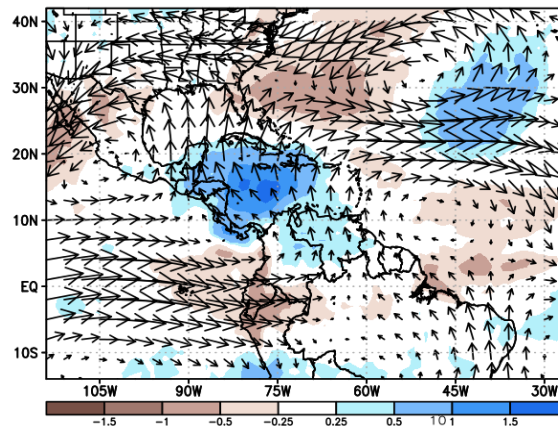
For week-2, low-level winds are expected to be above-average over Cuba and the Bahamas, near-normal over Hispaniola and Jamaica, and below-average over Lesser Antilles into southern Caribbean locations.

Wind & Diverg. (200-hPa)

GEFS Week-2 200-hPa Divergence and Wind Average  
Valid: 20241225 - 20241231



GEFS Week-2 200-hPa Divergence and Wind Anomaly  
Valid: 20241225 - 20241231



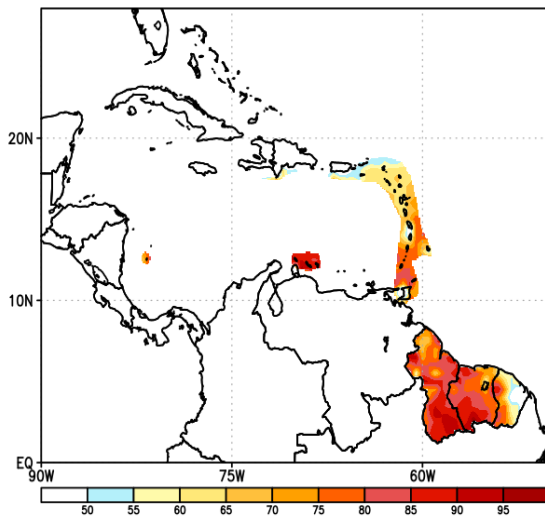
Upper-level divergence is expected over many central and southern Caribbean areas extending into some northern South American locations next week.



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

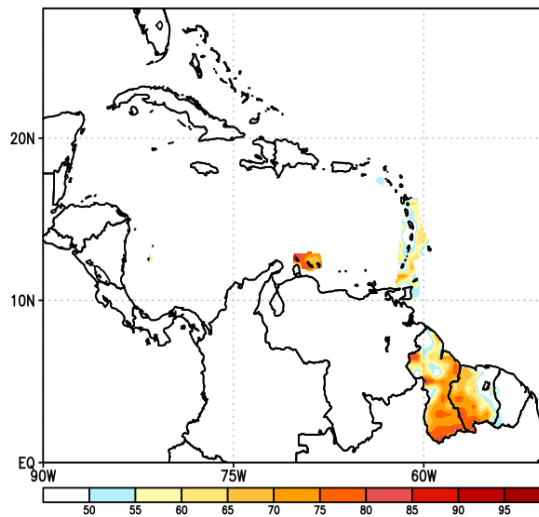
**hybrid > 80th percentile,  
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Valid: 20241225 - 20241231



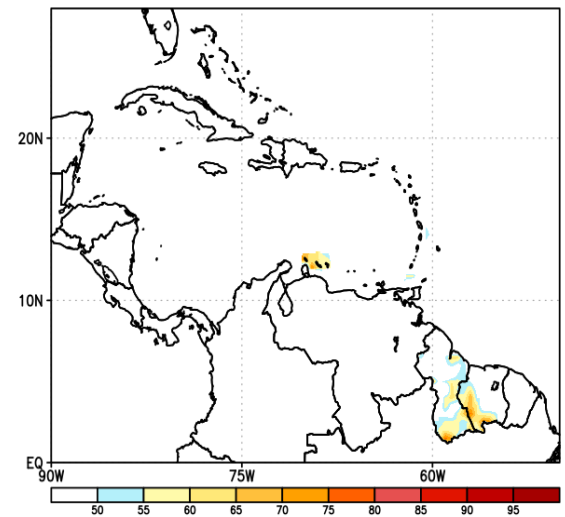
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GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days  
Valid: 20241225 - 20241231



**hybrid ≥ 95th percentile,  
≥3 consecutive days**

GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days  
Valid: 20241225 - 20241231

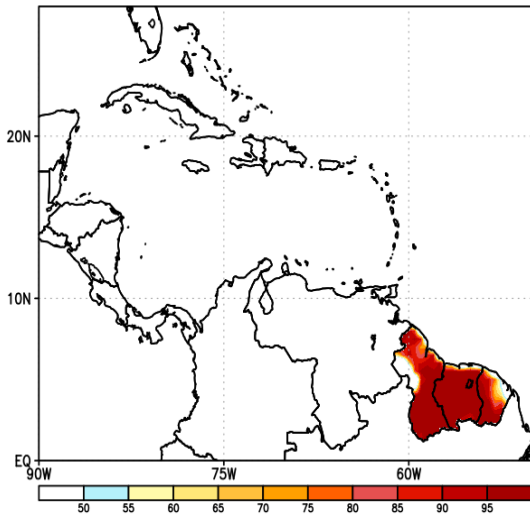


**There is a high chance for daily Tmax/HI max hybrid index to exceed the 80th percentile for at least 3 consecutive days over ABC islands, southern Lesser Antilles, Tobago, Guyana, Suriname, and western French Guiana. There is also a moderate to high chance for daily Tmax/HI max hybrid index to exceed the 95th percentile for at least 3 consecutive days over ABC islands and some pockets in southern Guyana and southwest Suriname.**

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

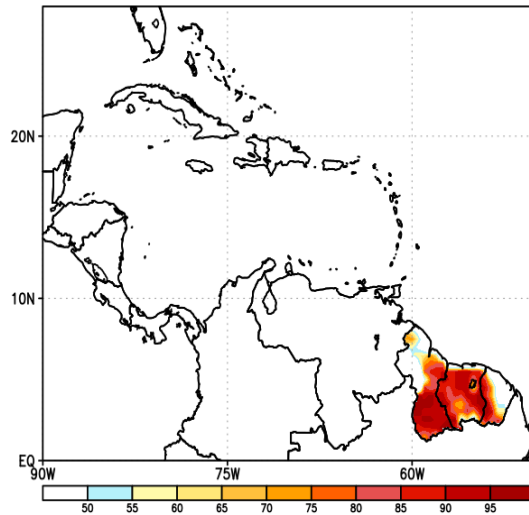
**hybrid > 33°C,  
≥3 consecutive days**

FS Week-2 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da  
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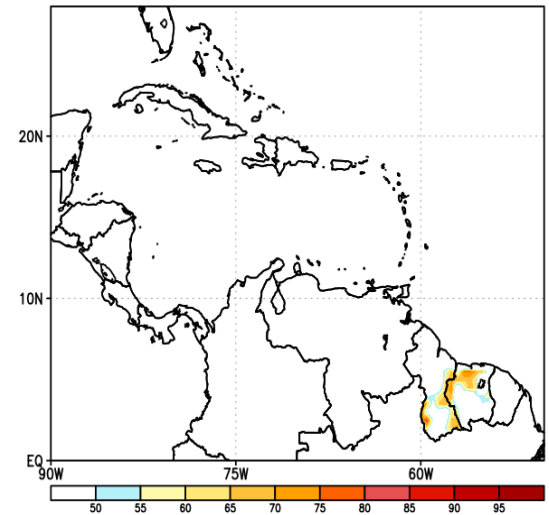
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**hybrid > 37°C,  
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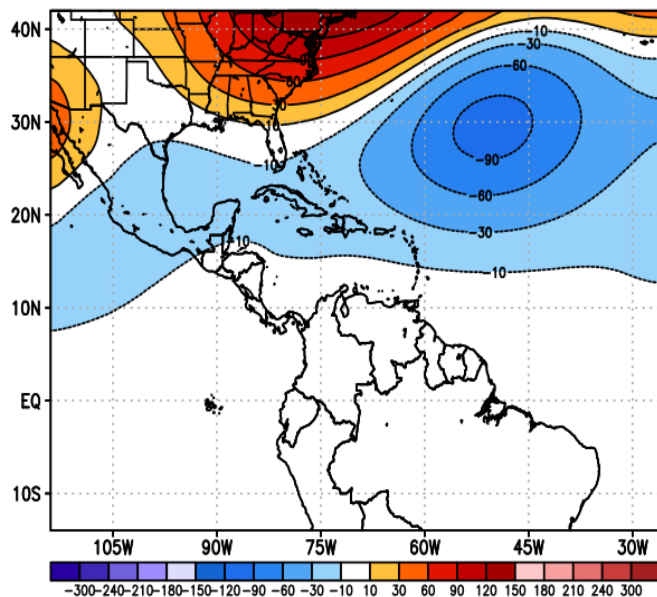
FS Week-2 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da  
Valid: 20241225 - 20241231



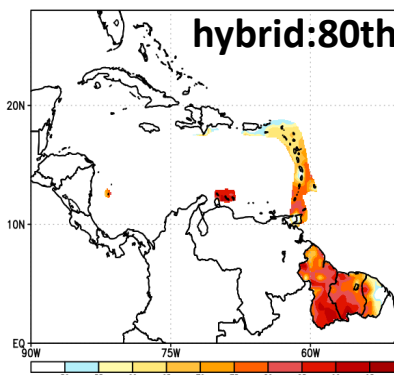
**There is a high probability for daily Tmax/HI hybrid index to exceed 33°C for at least 3 consecutive days over most of Guyana, Suriname, and French Guiana. There is also a moderate to high chance for daily Tmax/HI hybrid index to exceed 37°C over some scattered places in Guyana and some northern locations in Suriname.**

# Week-2, Convergence of Evidences

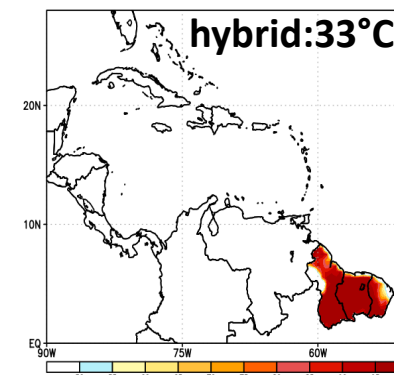
GEFS Week-2 500-hPa Geo-Potential Height Anomaly  
Valid: 20241225 - 20241231



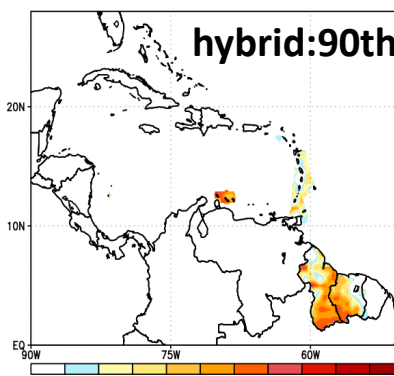
GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days  
Valid: 20241225 - 20241231



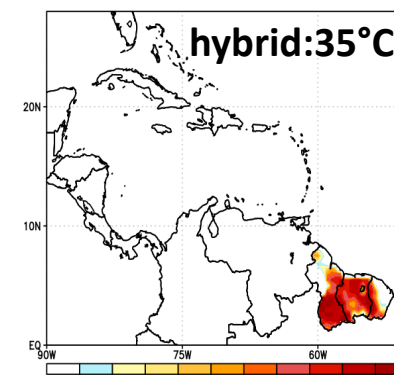
FS Week-2 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. days  
Valid: 20241225 - 20241231



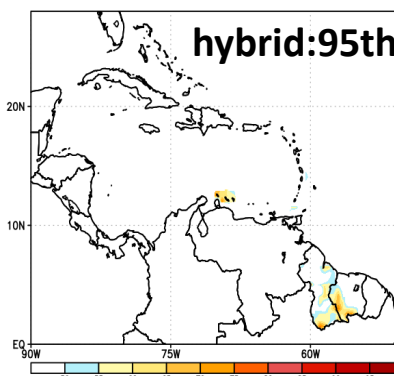
GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days  
Valid: 20241225 - 20241231



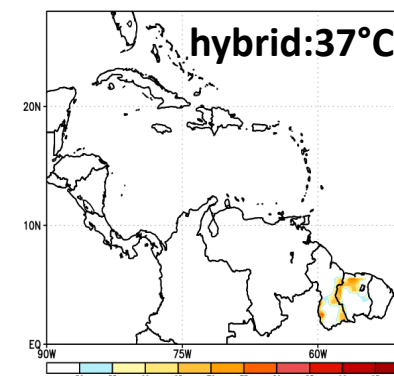
FS Week-2 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. days  
Valid: 20241225 - 20241231



GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days  
Valid: 20241225 - 20241231



FS Week-2 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. days  
Valid: 20241225 - 20241231



- At 500-hPa, geopotential height anomalies in the region expected to be slightly-below-average over northern and central Caribbean and near-normal over more southern locations including northern South America, for next week.
- Hybrid index exceedance probability forecasts indicate:
  - High chances for the hybrid index to exceed the 95th percentile over ABC islands and some pockets in southern Guyana and southwest Suriname.
  - High chances for the hybrid index to exceed 37°C over some scattered places in Guyana and some northern locations in Suriname.

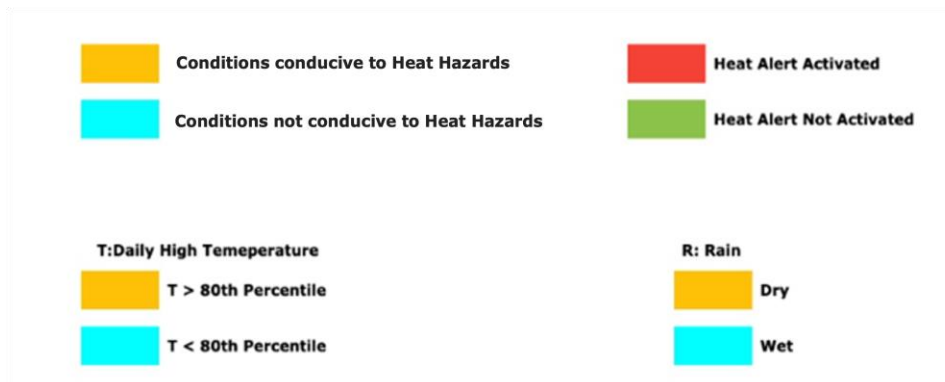
# Urban Heat Island Alerts for Caribbean



[https://www.cpc.ncep.noaa.gov/products/international/UHI/UHI\\_alert\\_Caribbean.html](https://www.cpc.ncep.noaa.gov/products/international/UHI/UHI_alert_Caribbean.html)

# Urban Heat Island Forecasts Week-1

			Dec-18-2024			Dec-19-2024			Dec-20-2024			Dec-21-2024			Dec-22-2024		
NO	Stations	80th Pctl Clim	Tmax	Rain	Alert	Tmax	Rain	Alert	Tmax	Rain	Alert	Tmax	Rain	Alert	Tmax	Rain	Alert
1	Barquisimeto	28.3 degC															
2	Barranquilla	29.9 degC															
3	Cartagena	31.2 degC															
4	Chaguanas	28.8 degC															
5	Maracaibo_La_Chinita	32.1 degC															

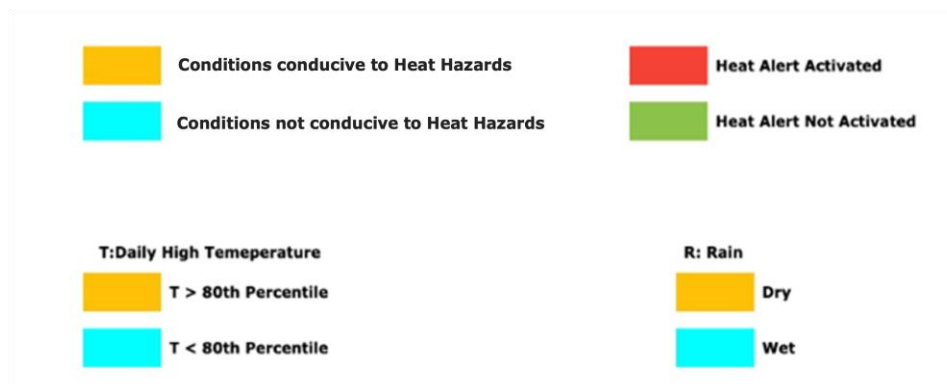


[https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb\\_day\\_80.html](https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb_day_80.html)



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

		Week 2: 23Dec2024 - 29Dec2024				Week 3: 30Dec2024 - 05Jan2025				Week 4: 06Jan2025 - 12Jan2025			
NO	Stations	80th Pctl Clim	Tmax	Rain	Alert	80th Pctl Clim	Tmax	Rain	Alert	80th Pctl Clim	Tmax	Rain	Alert
1	Barquisimelo	28.3 degC				28.5 degC				28.6 degC			
2	Barranquilla	29.5 degC				29.5 degC				29.8 degC			
3	Cartagena	31.3 degC				31.6 degC				31.8 degC			
4	Chaguanas	28.7 degC				28.5 degC				28.2 degC			
5	Maracaibo_La_Chinita	32.1 degC				32.1 degC				32.7 degC			

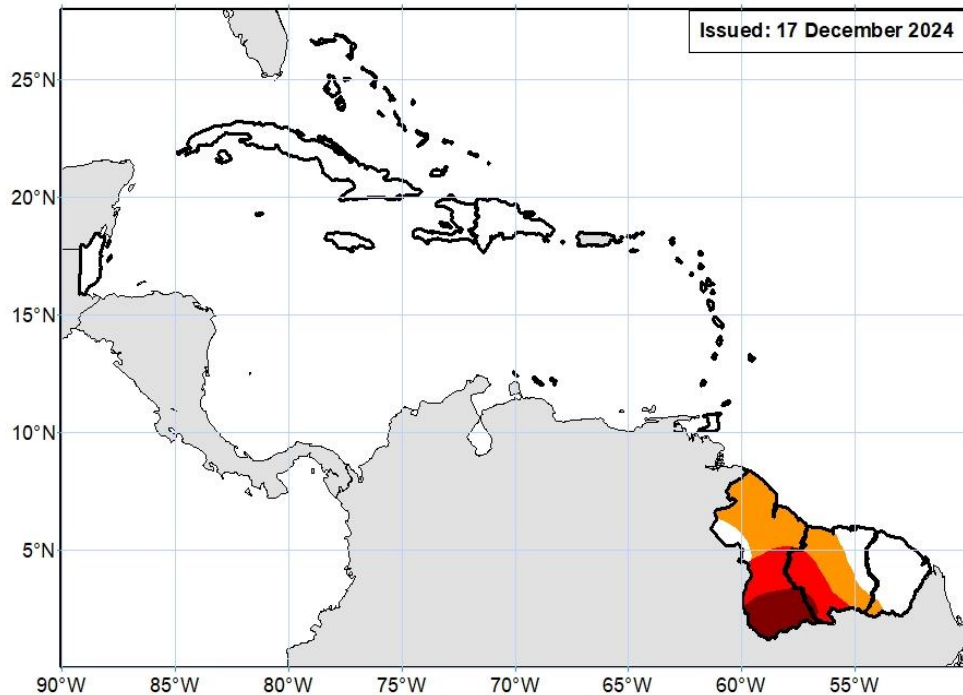


[https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb\\_week234\\_80.html](https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb_week234_80.html)

# Week-1 Heat Hazards Outlook

## Week-1 Caribbean Heat Hazard Outlooks Valid: 18 - 24 Dec 2024

Issued: 17 December 2024



Heat Levels

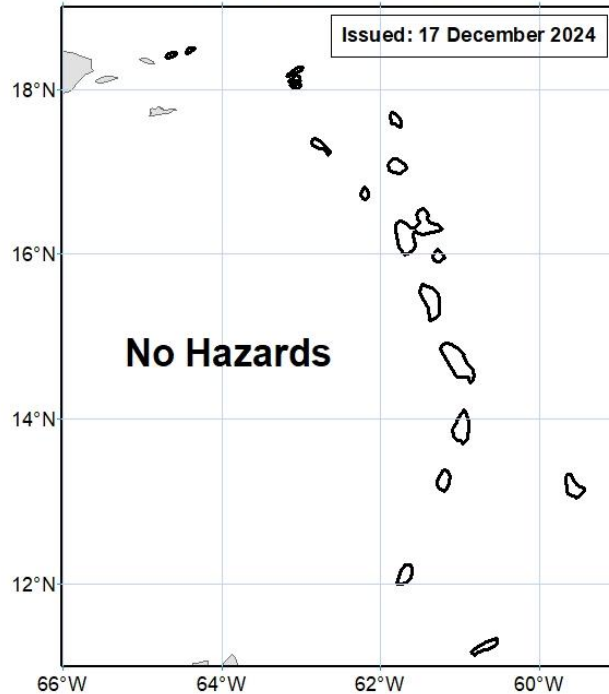
Moderately Severe Severe Extremely Severe

- There is an increased chance for **moderately severe heat** over northern Guyana, central Suriname, and a southwest corner of French Guiana.
- An increased chance for **severe heat** exists over central Guyana and western Suriname.
- Risks of **extremely severe heat** exist over southern Guyana into a southwest portion of Suriname.

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

# Week-1 Lesser Antilles Heat Hazards Outlook

## Week-1 Lesser Antilles Heat Hazard Outlooks Valid: 18 - 24 Dec 2024



### Heat Levels

Moderately Severe

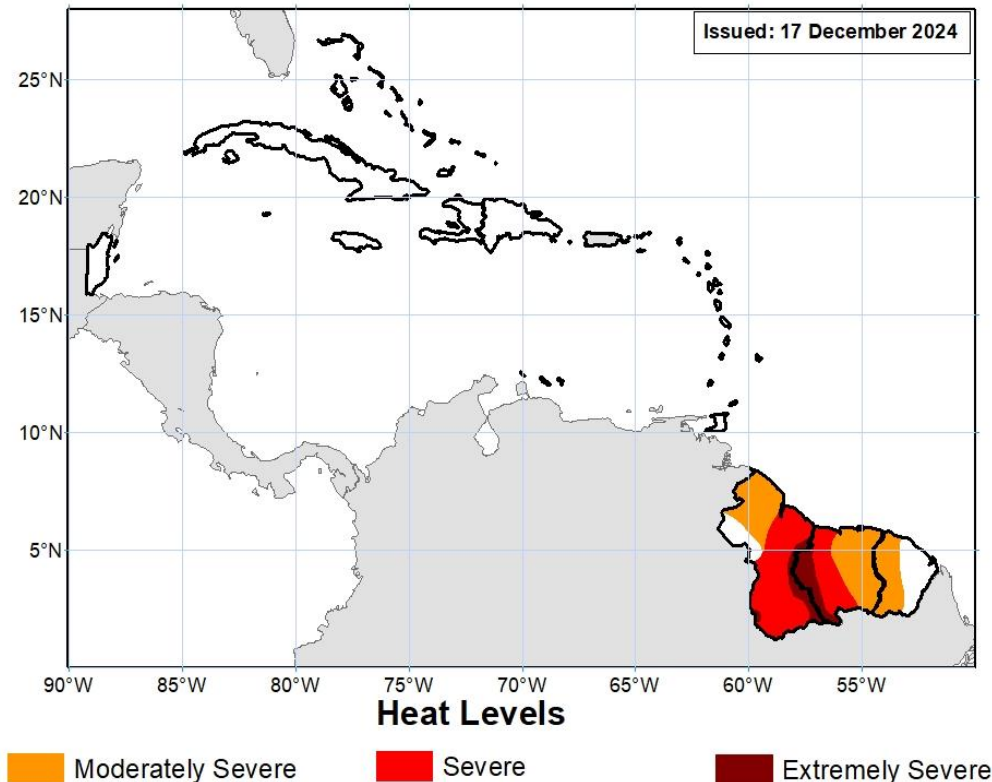
Severe

Extremely Severe

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

# Week-2 Heat Hazards Outlook

## Week-2 Caribbean Heat Hazard Outlooks Valid: 25 - 31 December 2024

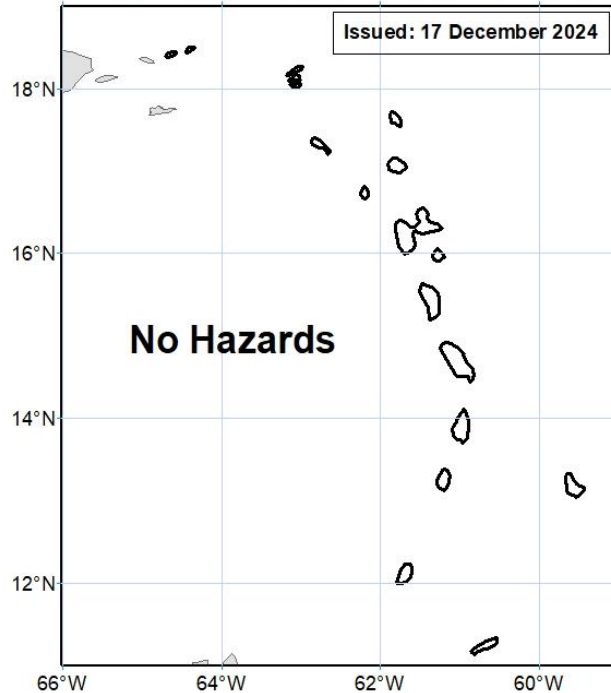


- There is an increased chance for **moderately severe heat** over northern Guyana, central-eastern Suriname, and western French Guiana.
- There is an increased chance for **severe heat** over most of eastern and southern Guyana and western Suriname.
- Increased chances for **extremely severe heat** exist over a pocket in southwest Guyana and the eastern edge of Guyana into western Suriname.

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

# Week-2 Lesser Antilles Heat Hazards Outlook

## Week-2 Lesser Antilles Heat Hazard Outlooks Valid: 25 - 31 December 2024



### Heat Levels

Moderately Severe

Severe

Extremely Severe

**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](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](https://www.cpc.ncep.noaa.gov/products/international/UHI/UHI_alert_map.html)