

Heat Hazards Outlooks for the Caribbean

Date of Issue: 2024-12-10

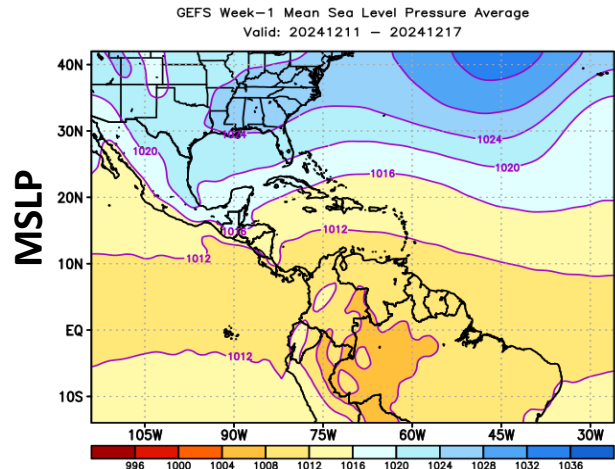
Week-1, Valid for: 11 - 17 December 2024

Week-2, Valid for: 18 - 24 December 2024

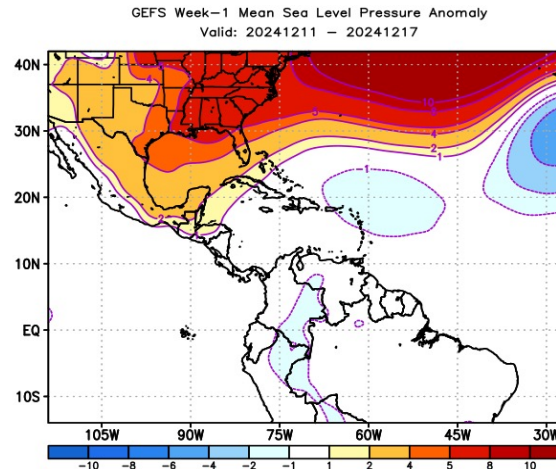


Week-1, Mean Sea Level Pressure & 500-hPa Height

7-day Total



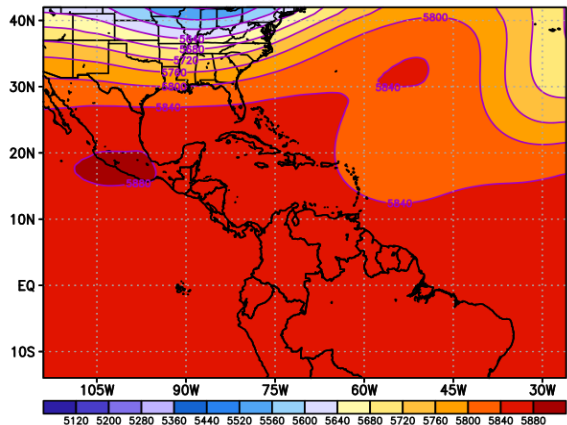
7-day Anomaly



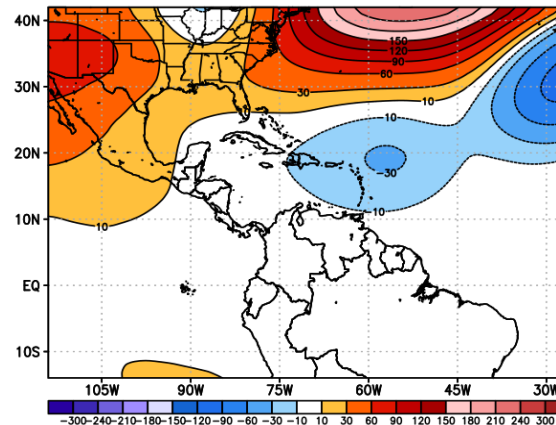
Next week, mean sea level pressure (MSLP) is forecasted to be slightly-above-average over northwest Caribbean, slightly-below-average over northern Lesser Antilles and near-normal across the central-southern Caribbean.

Geop. Height (500-hPa)

GEFS Week-1 500-hPa Geo-Potential Height Average
Valid: 20241211 - 20241217



GEFS Week-1 500-hPa Geo-Potential Height Anomaly
Valid: 20241211 - 20241217

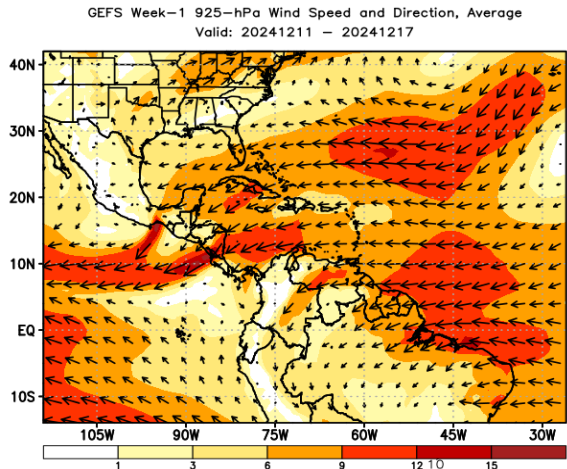


At 500-hPa, geopotential height anomalies in the region also expected to follow a similar pattern to MSLP: slightly-above-average over northwest Caribbean, slightly-below-average over central-eastern Caribbean, and near-normal across the central-southern Caribbean.

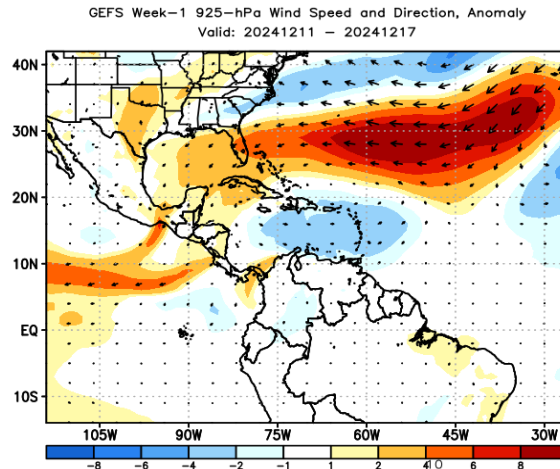
Week-1, 925-hPa and 200-hPa Wind

7-day Total

Wind (925-hPa)

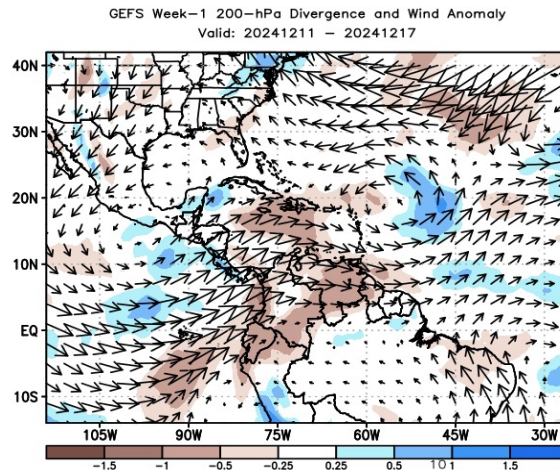
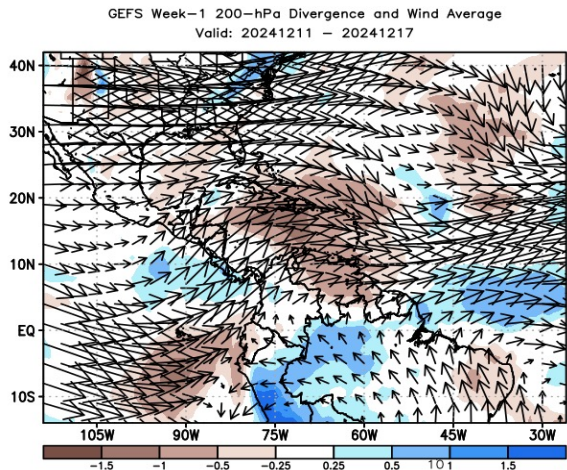


7-day Anomaly



For week-1, low-level winds are expected to be above-average over northwest Caribbean, contrasted with below-average speeds across the southeast Caribbean and near-normal over northern South America.

Wind & Diverg. (200-hPa)

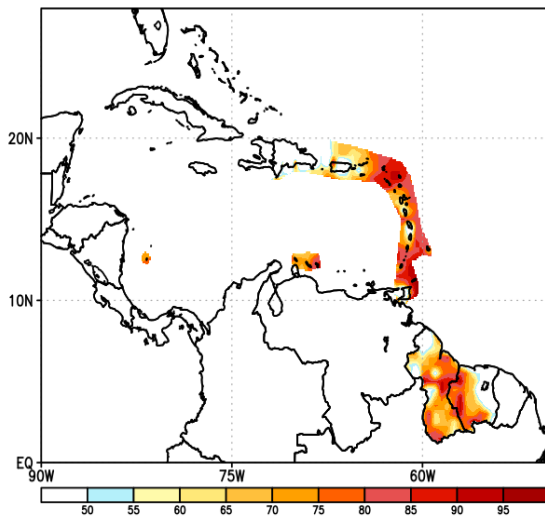


Minimal upper-level divergence is expected over much of the Caribbean region.

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

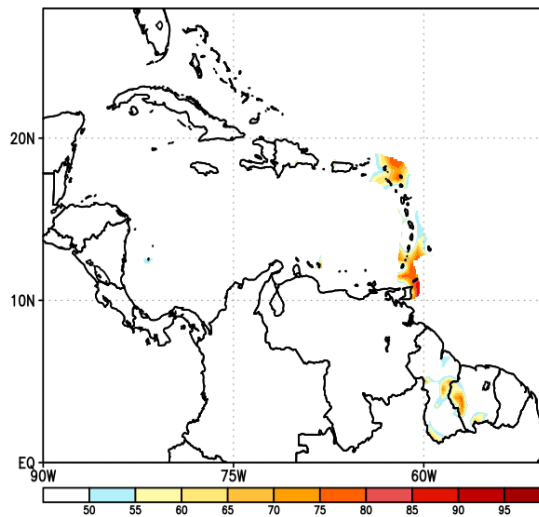
**hybrid > 80th percentile,
≥3 consecutive days**

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days
Valid: 20241211 – 20241217



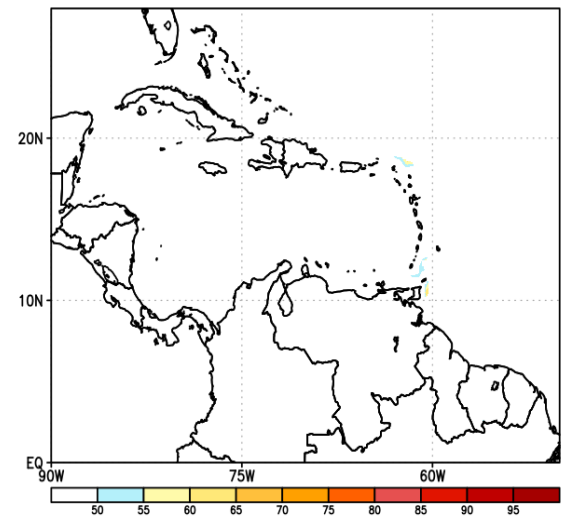
**hybrid > 90th percentile,
≥3 consecutive days**

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days
Valid: 20241211 – 20241217



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

GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days
Valid: 20241211 – 20241217

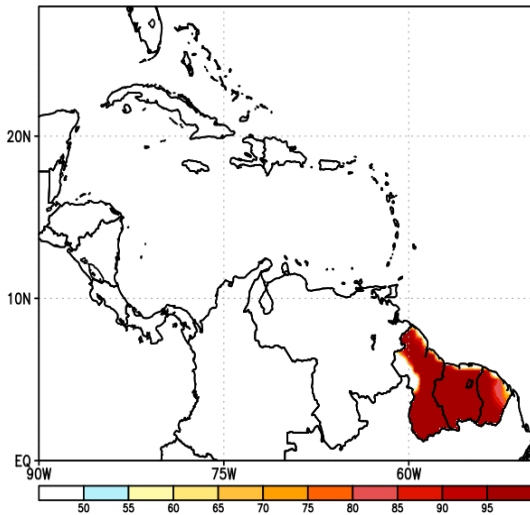


There is a high chance for daily Tmax/HI max hybrid index to exceed the 80th percentile for at least 3 consecutive days over the Lesser Antilles, Tobago, and Aruba, Bonaire and Curaçao. No regions have a moderate to high chance for daily Tmax/HI max hybrid index to exceed the 95th percentile for at least 3 consecutive days.

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

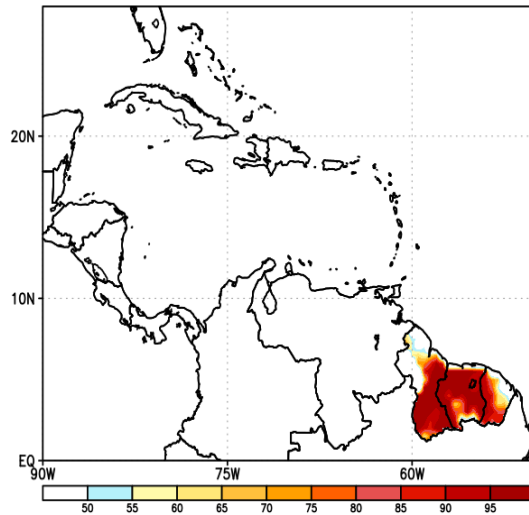
**hybrid > 33°C,
≥3 consecutive days**

FS Week-1 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da
Valid: 20241211 - 20241217



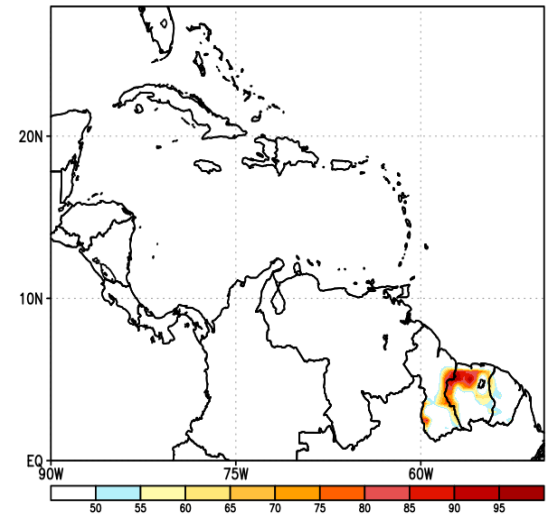
**hybrid > 35°C,
≥3 consecutive days**

FS Week-1 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da
Valid: 20241211 - 20241217



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

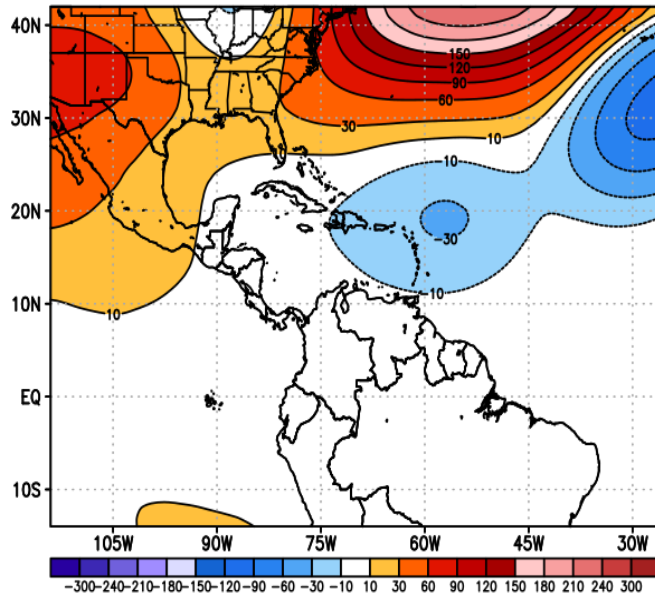
FS Week-1 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da
Valid: 20241211 - 20241217



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

Week-1, Convergence of Evidences

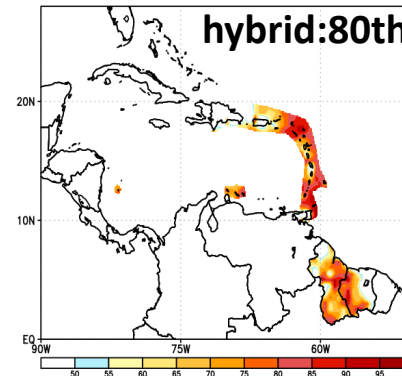
GEFS Week-1 500-hPa Geo-Potential Height Anomaly
Valid: 20241211 - 20241217



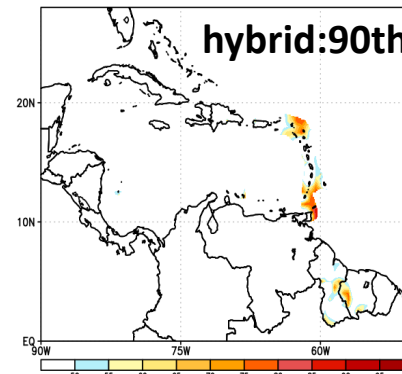
- At 500-hPa, model forecasts indicate slightly-above-average over northwest Caribbean, slightly-below-average over central-eastern Caribbean, and near-normal across the central-southern Caribbean. Hybrid index exceedance probability forecasts indicate:

- High chances for the hybrid index to exceed the 95th percentile over no locations.
- High chances for the hybrid index to exceed 37°C over a few places in Guyana and some locations in northern Suriname.

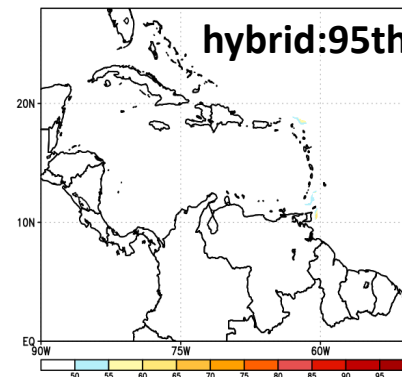
GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days
Valid: 20241211 - 20241217



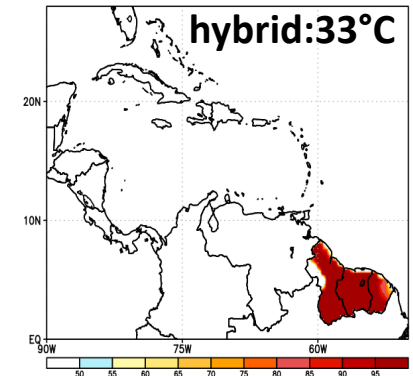
GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days
Valid: 20241211 - 20241217



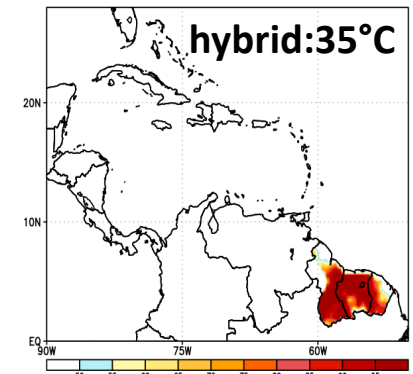
GEFS Week-1 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days
Valid: 20241211 - 20241217



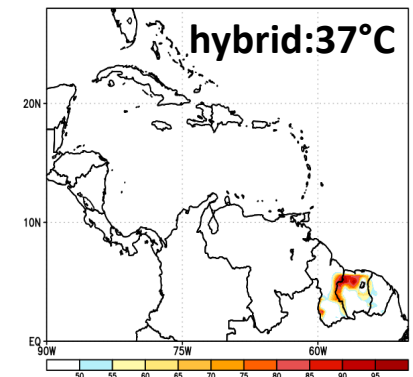
FS Week-1 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da
Valid: 20241211 - 20241217



FS Week-1 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da
Valid: 20241211 - 20241217

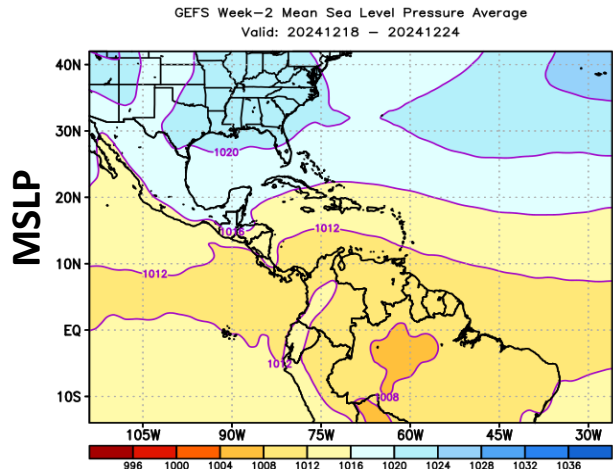


FS Week-1 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da
Valid: 20241211 - 20241217

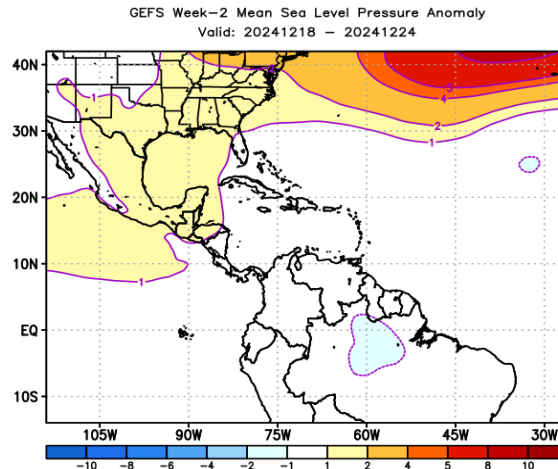


Week-2, Mean Sea Level Pressure & 500-hPa Height

7-day Total



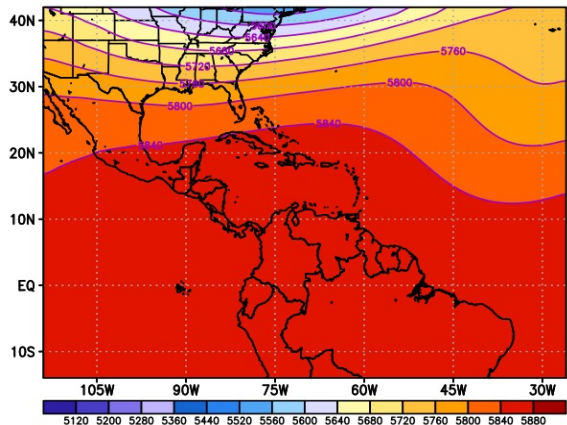
7-day Anomaly



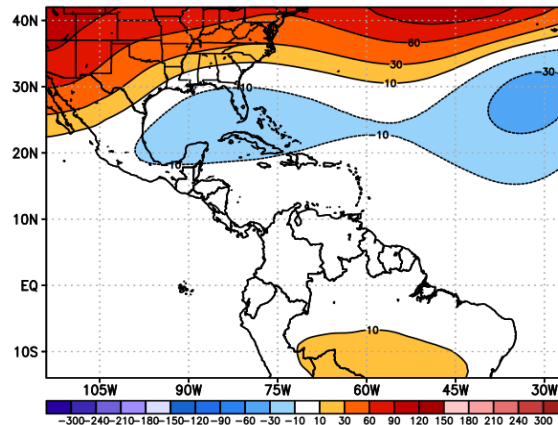
For week-2, mean sea level pressure is forecasted to be slightly-above-average over the Gulf of Mexico and some northwest Caribbean regions, and near-normal across in other areas of the Caribbean.

Geop. Height (500-hPa)

GEFS Week-2 500-hPa Geo-Potential Height Average
Valid: 20241218 - 20241224



GEFS Week-2 500-hPa Geo-Potential Height Anomaly
Valid: 20241218 - 20241224

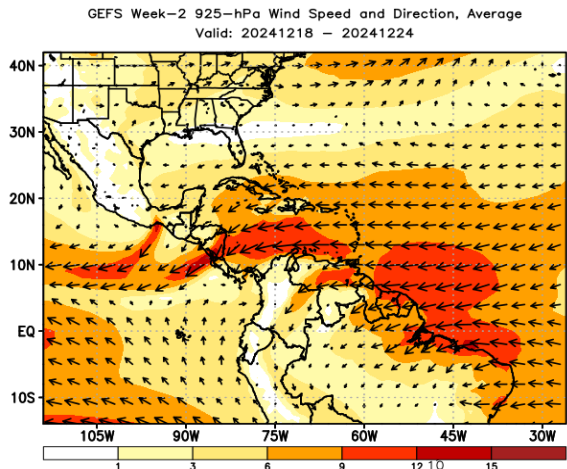


At 500-hPa, geopotential height anomalies in the region expected to be slightly-below-average over more northern Caribbean islands and near-normal over the central and southern Caribbean and northern South America next week.

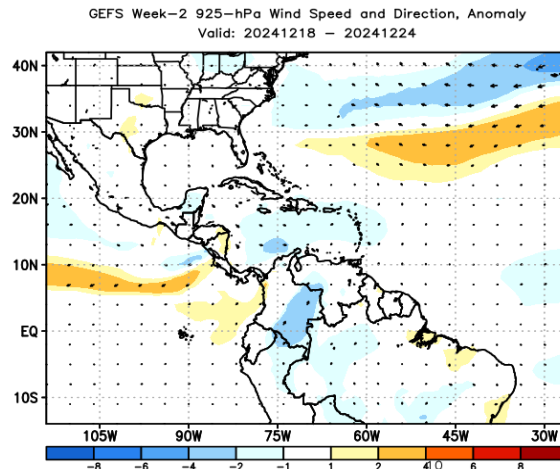
Week-2, 925-hPa and 200-hPa Wind

7-day Total

Wind (925-hPa)

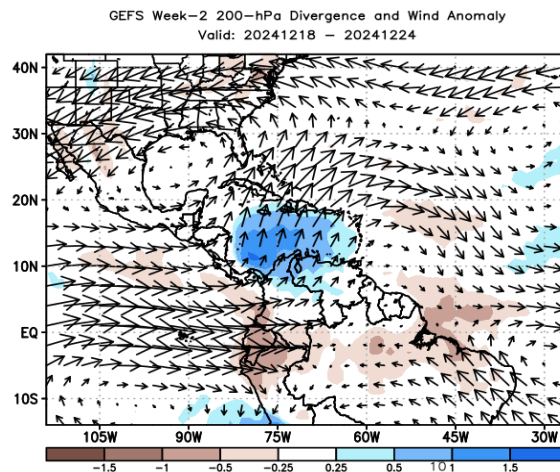
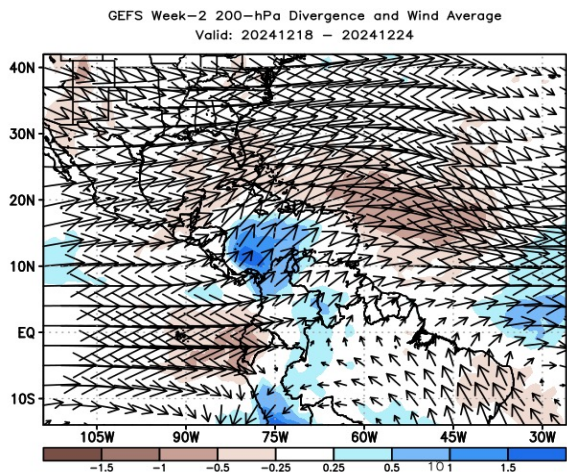


7-day Anomaly



For week-2, low-level winds are expected to near-normal to slightly-below-average over much of the Caribbean and northern South America.

Wind & Diverg. (200-hPa)

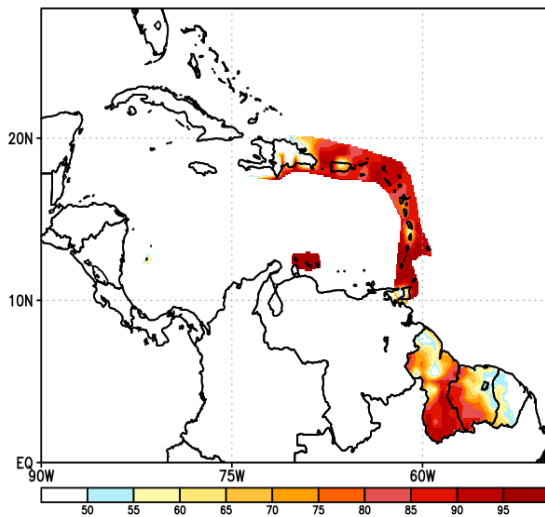


Upper-level divergence is expected over central-southern locations in the Caribbean south of Hispaniola and west of the Lesser Antilles next week.

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

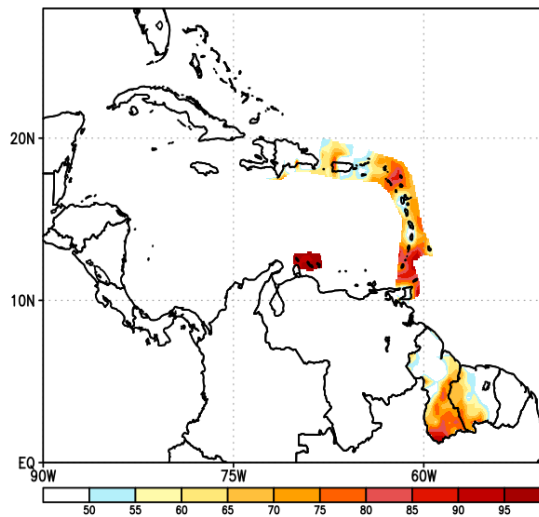
**hybrid > 80th percentile,
≥3 consecutive days**

GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days
Valid: 20241218 – 20241224



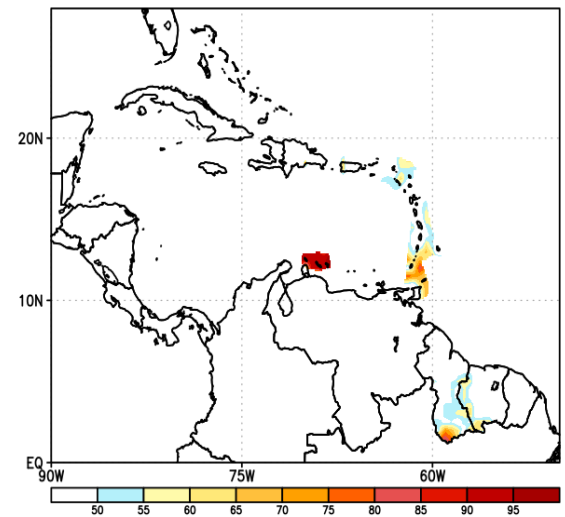
**hybrid > 90th percentile,
≥3 consecutive days**

GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days
Valid: 20241218 – 20241224



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

GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days
Valid: 20241218 – 20241224

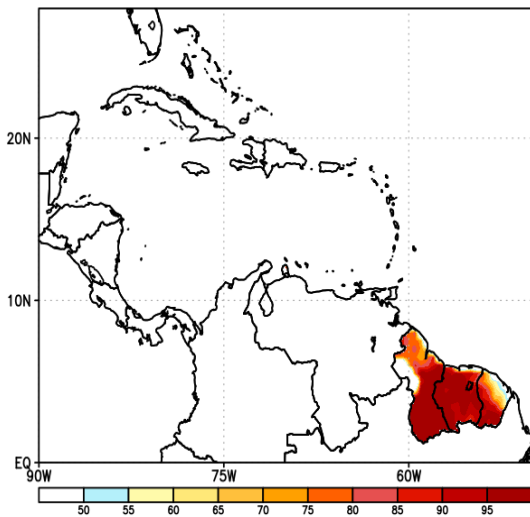


There is a high chance for daily Tmax/HI max hybrid index to exceed the 80th percentile for at least 3 consecutive days over some places in the Dominican republic, Lesser Antilles, Tobago, Aruba Bonaire, and Curaçao, and much of Guyana and Suriname. There is also a moderate to high chance for daily Tmax/HI max hybrid index to exceed the 95th percentile for at least 3 consecutive days over Aruba, Bonaire, and Curaçao, some southern Lesser Antilles islands and Tobago, and a southern pocket of Guyana.

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

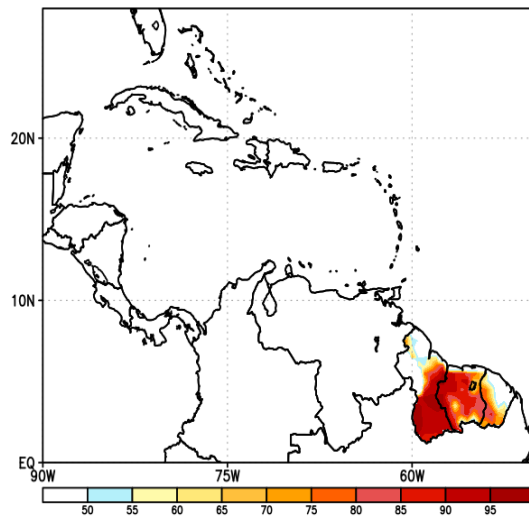
**hybrid > 33°C,
≥3 consecutive days**

FS Week-2 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da
Valid: 20241218 - 20241224



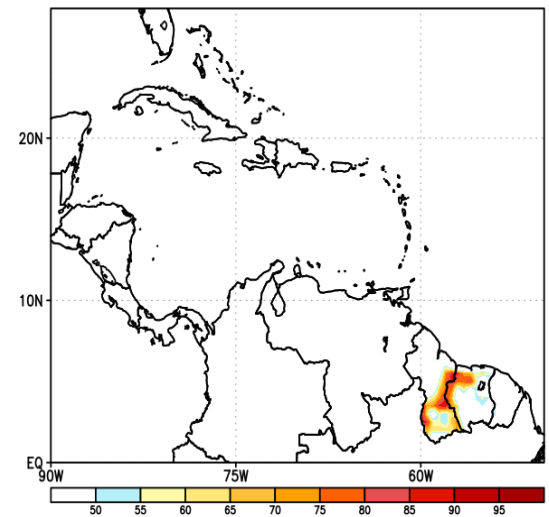
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FS Week-2 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da
Valid: 20241218 - 20241224



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

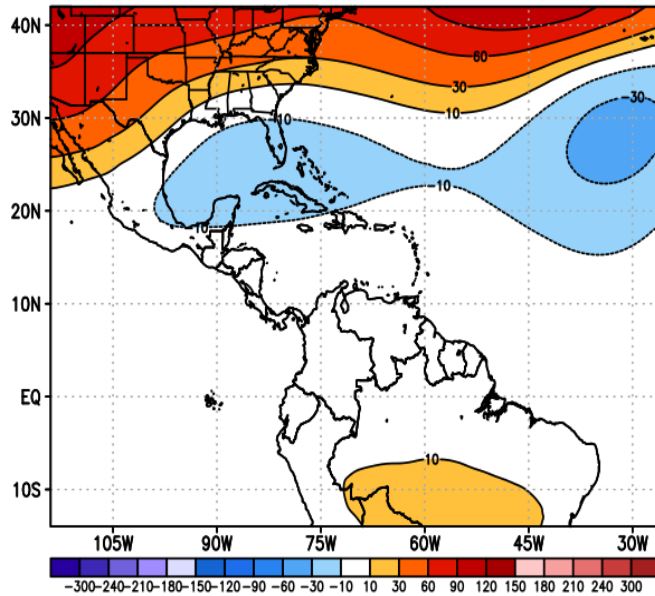
FS Week-2 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da
Valid: 20241218 - 20241224



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 some southern and eastern portions of Guyana and a northern band across Suriname.

Week-2, Convergence of Evidences

GEFS Week-2 500-hPa Geo-Potential Height Anomaly
Valid: 20241218 - 20241224

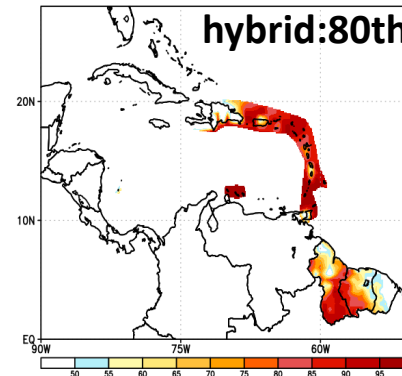


At 500-hPa, model forecasts indicate slightly-below-average conditions over more northern Caribbean islands and near-normal over the central and southern Caribbean and northern South America next week.

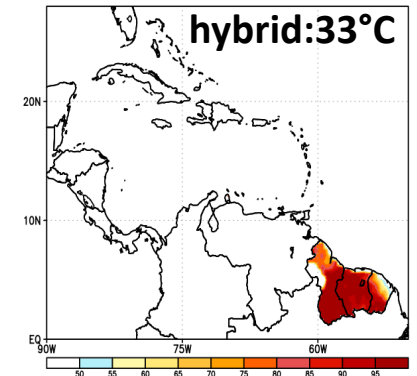
Hybrid index exceedance probability forecasts indicate:

High chances for the hybrid index to exceed the 95th percentile over Aruba, Bonaire, and Curaçao, some southern Lesser Antilles islands and Tobago, and a southern pocket of Guyana. High chances for the hybrid index to exceed 37°C over some southern and eastern portions of Guyana and a northern band across Suriname.

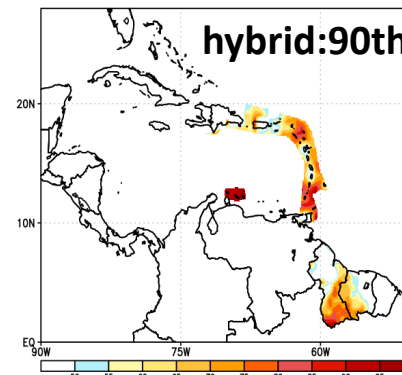
GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 80th, > 3 consec. days
Valid: 20241218 - 20241224



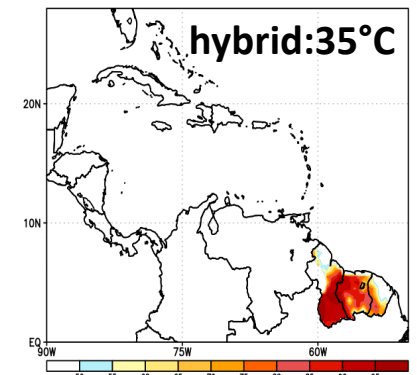
FS Week-2 Tmax/HI hybrid exceedance Prob. > 33 deg. Cels., > 3 consec. da
Valid: 20241218 - 20241224



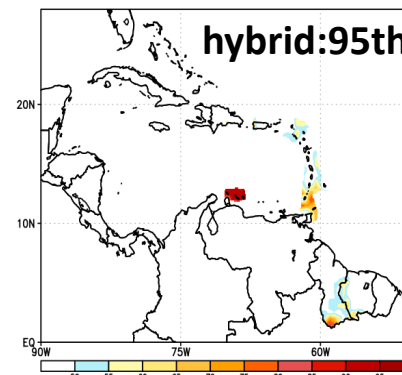
GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 90th, > 3 consec. days
Valid: 20241218 - 20241224



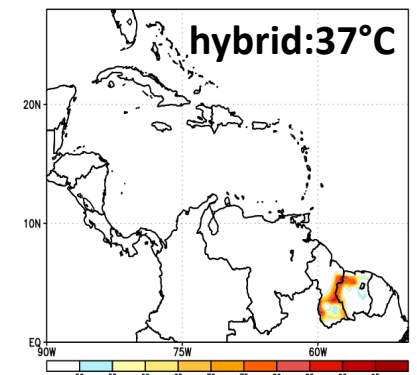
FS Week-2 Tmax/HI hybrid exceedance Prob. > 35 deg. Cels., > 3 consec. da
Valid: 20241218 - 20241224



GEFS Week-2 Tmax/HI hybrid exceedance Prob. > 95th, > 3 consec. days
Valid: 20241218 - 20241224

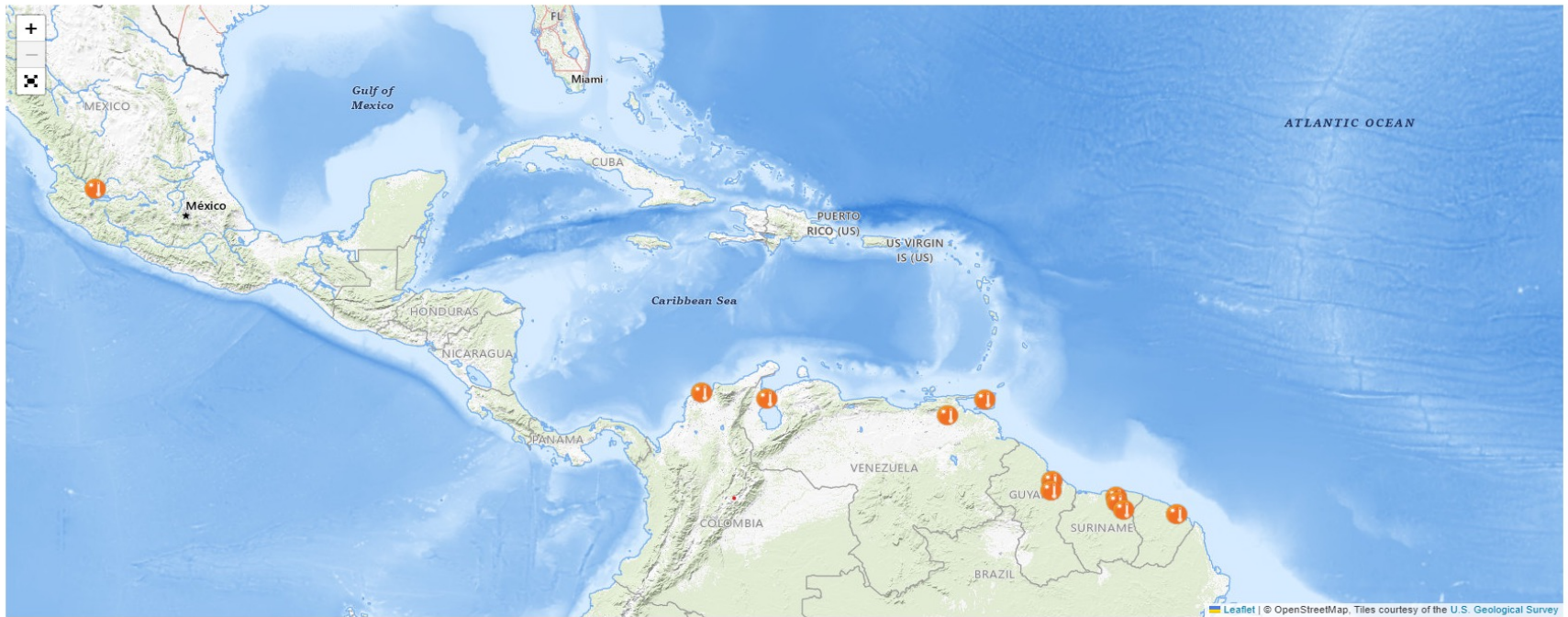


FS Week-2 Tmax/HI hybrid exceedance Prob. > 37 deg. Cels., > 3 consec. da
Valid: 20241218 - 20241224



Urban Heat Island Alerts for Caribbean

NCEP Global Ensemble Forecast System

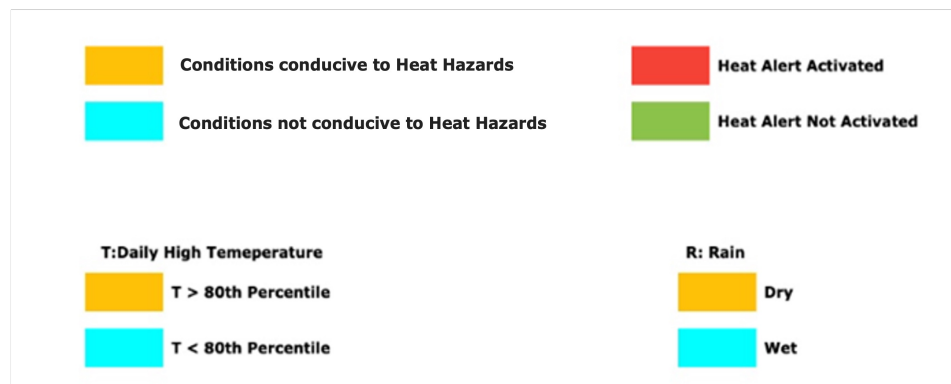


 Urban Heat Island Alert: active

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

Urban Heat Island Forecasts Week-1

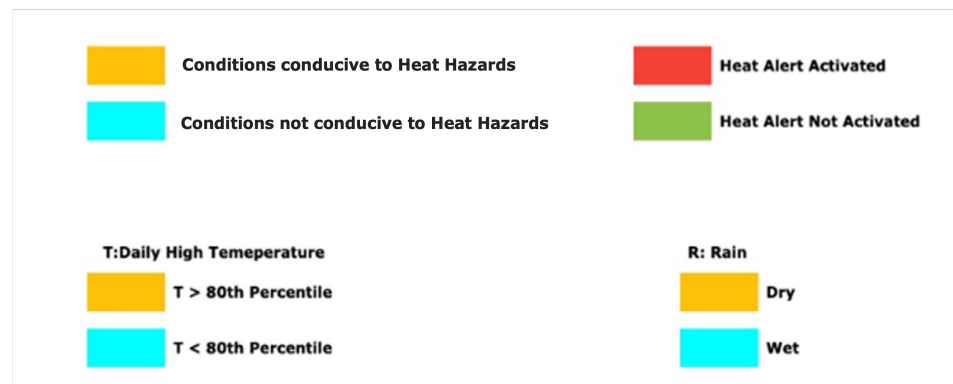
NO	Stations	80th Pctl Clim	Dec-11-2024			Dec-12-2024			Dec-13-2024			Dec-14-2024			Dec-15-2024		
			Tmax	Rain	Alert	Tmax	Rain	Alert	Tmax	Rain	Alert	Tmax	Rain	Alert	Tmax	Rain	Alert
1	Barranquilla	29.9 degC															
2	Cartagena	31.1 degC															
3	Chaguanas	28.4 degC															
4	Maracaibo_La_Chinita	31.6 degC															
5	Miami_Fl	28.1 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: 16Dec2024 - 22Dec2024				Week 3: 23Dec2024 - 29Dec2024				Week 4: 30Dec2024 - 05Jan2025			
		80th Pctl Clim	Tmax	Rain	Alert	80th Pctl Clim	Tmax	Rain	Alert	80th Pctl Clim	Tmax	Rain	Alert
1	Barquisimeto	28.2 degC				28.3 degC				28.2 degC			
2	Barranquilla	29.5 degC				29.4 degC				29.3 degC			
3	Cartagena	31.3 degC				31.3 degC				31.2 degC			
4	Chaguanas	28.7 degC				28.1 degC				28.1 degC			
5	Maracaibo_La_Chinita	32.1 degC				32.1 degC				31.8 degC			

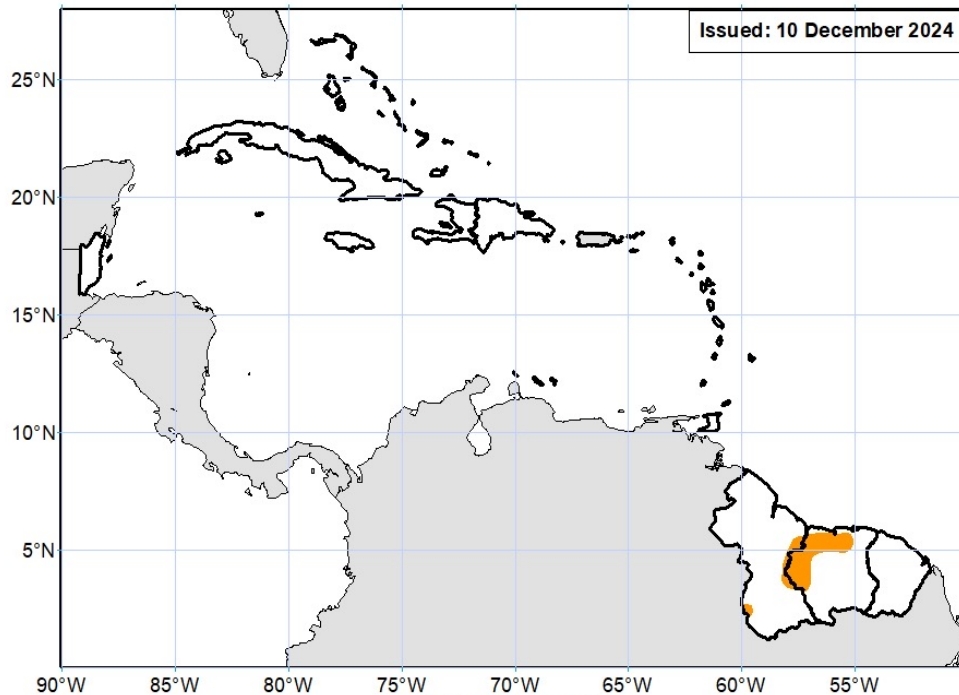


https://www.cpc.ncep.noaa.gov/products/international/UHI/Caribb_week234_80.html

Week-1 Heat Hazards Outlook

Week-1 Caribbean Heat Hazard Outlooks Valid: 11 - 17 Dec 2024

Issued: 10 December 2024



Heat Levels

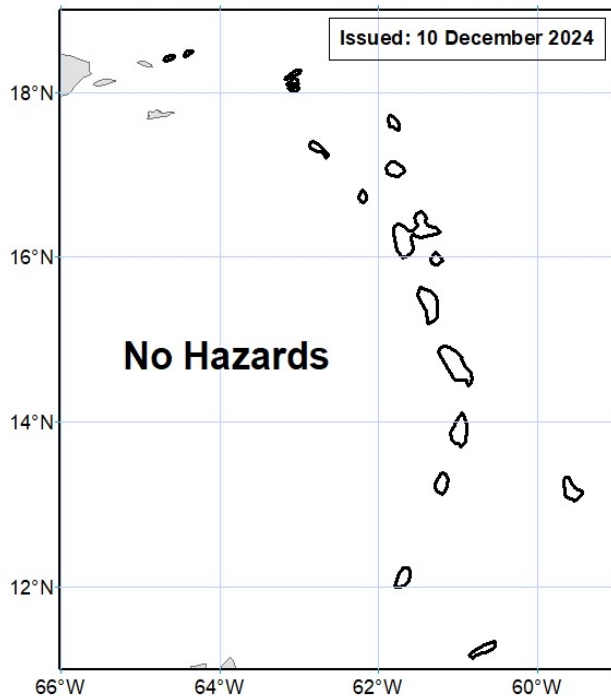
■ Moderately Severe ■ Severe ■ Extremely Severe

There is an increased chance for **moderately severe heat** over a few pockets of Guyana and a band western-northern 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: 11 - 17 Dec 2024



No Hazards

Heat Levels

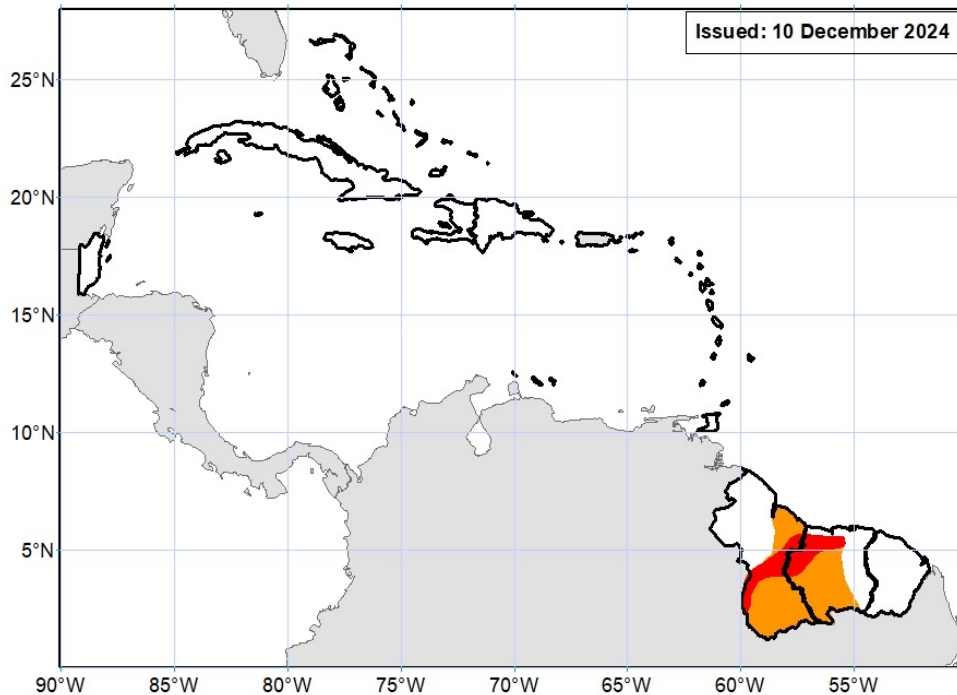
Moderately Severe Severe Extremely Severe

There are not heat hazards forecast over the Lesser Antilles in week 1.

Week-2 Heat Hazards Outlook

Week-2 Caribbean Heat Hazard Outlooks Valid: 18 - 24 December 2024

Issued: 10 December 2024



Heat Levels

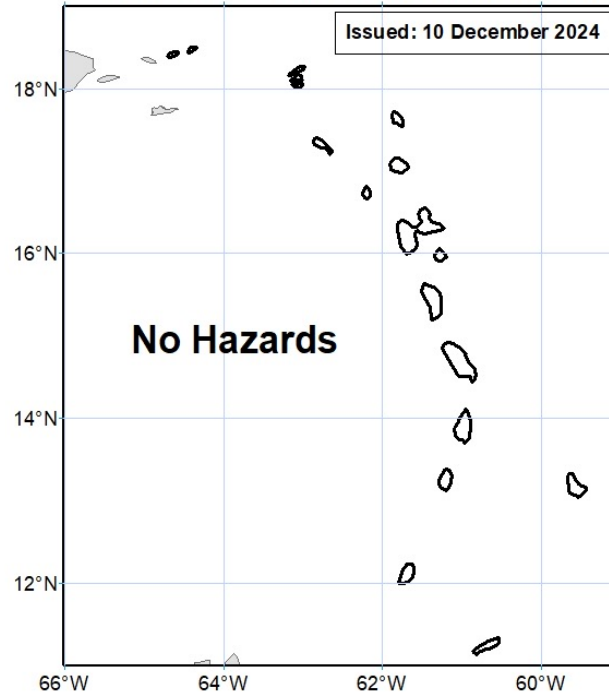
Moderately Severe Severe Extremely Severe

- There is an increased chance for **moderately severe heat** over much of eastern and southern Guyana and the western half of Suriname.
- An increased chance for **severe heat** exists over a band crossing central Guyana into northern 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: 18 - 24 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