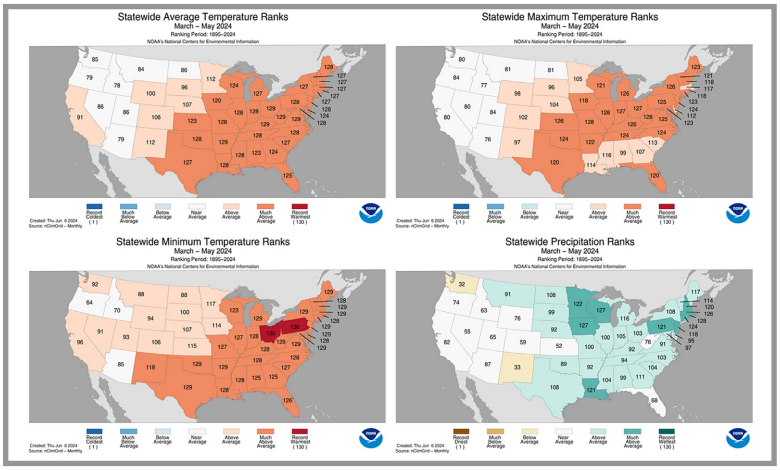
Quarterly Climate Impacts and Outlook

Southeast Region

June 2024

National and Regional Weather Highlights for Spring 2024



*Temperatures were much above average across the Southeast this spring. Regionally, it **tied for the 3rd warmest spring on record**. Florida recorded its warmest May on record. **Precipitation was also above average** across the region, except across Florida, which was near average. Wet conditions prevailed in March and May, while precipitation was near to below average in April. **Temperatures and precipitation were above average across the Caribbean**. Drought emerged in South Florida, while the rest of the region was drought-free. For more information, see NOAA's National Climate Report.*

Highlights for the Southeast

The famous cherry blossoms in Washington D.C. reached peak bloom on March 17th, which **tied for the second earliest bloom date** since 1921.

Pollen concentrations in Raleigh, NC were 5,232 grains per cubic meter on April 1st and 3,634 grains per cubic meter on April 3rd, marking the **highest and second highest daily concentrations**, respectively, since 1999.

A large squall line dropped over 7 inches of rain in Tallahassee, FL, including over 2 inches in one hour, from April 10th to 11th, prompting **flash flood emergencies in the capital city**.

Fort Lauderdale, FL **tied it all-time highest minimum temperature** of 85 degrees F on May 14th, while Punta Gorda, FL **tied its all-time highest maximum temperature** of 101 degrees F on May 30th.

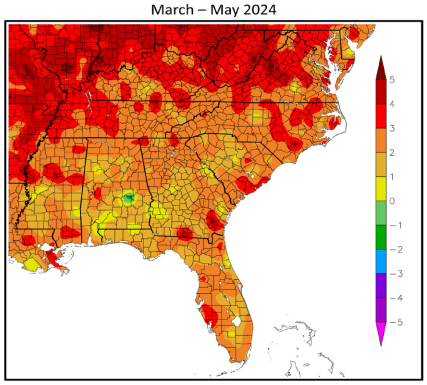
There were seven rip current fatalities, all in PR.

El Niño has ended, and ENSO-neutral conditions are present. La Niña is expected to develop this summer (65% chance) and persist into the upcoming winter (85% chance).

Regional Weather Overview for Spring 2024

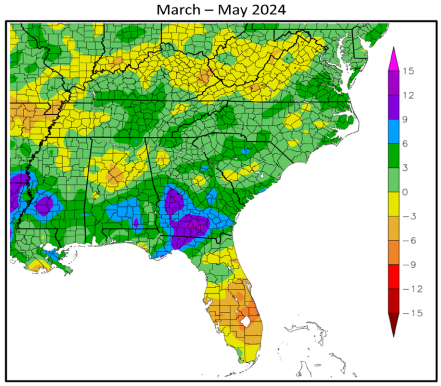
Temperature and Precipitation Anomalies

Mean Temperature Departure from Average (°F)
March – May 2024



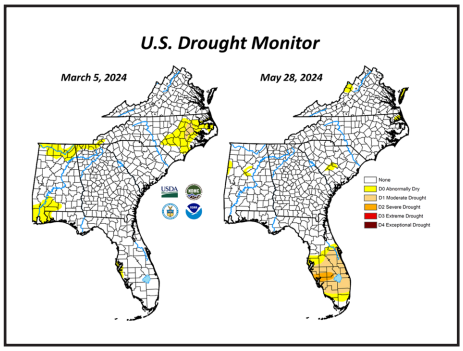
Temperatures were **above average** across the Southeast, particularly in parts of VA and along the East Coast, where some locations were **more than 4 degrees F above average** for the season. Several long-term stations, including Roanoke, VA, Raleigh-Durham, NC, Wilmington, NC, Charleston, SC, Fort Lauderdale, FL, and Key West, FL, recorded their **warmest spring on record**, while many other stations recorded one of their top 5 warmest springs on record.

Precipitation Departure from Normal (in)
March – May 2024



Precipitation was **above average** across much of the Southeast, particularly across southern portions of AL and GA, and North FL, where seasonal totals were **more than 10 inches above average** in places. In contrast, precipitation was **below average** across western portions of VA, northern AL, and much of the FL Peninsula, where seasonal **deficits of over 5 inches were observed**. Some parts of South FL recorded one of their top 5 driest springs on record.

Drought



Drought coverage remained low across much of the region this spring, reaching **its lowest percentage (3%) in nearly three years** by the end of March. **Areas of abnormal dryness (D0) were eliminated** across coastal AL and extreme northwest FL, as well as northern AL and GA and eastern NC, which also saw a **small pocket of moderate (D1) drought eliminated** by the end of the season. On the other hand, **small pockets of abnormal dryness (D0) emerged** across central portions of AL and SC and western VA, while **moderate (D1) and severe (D2) drought emerged** across South FL by the end of the season.

Contacts: Chip Konrad, Chris Fuhrmann and William Schmitz (SERCC)
Ellen Mecray and Sharon Mesick (NOAA/NCEI)

Regional Climate Impacts for Spring 2024

Severe Weather Spotlight: May 2024

Damage to Dick Howser Stadium at FSU (source: @Greg_Tish)

May was an exceptionally active month for severe weather in the region, with **over 1,000 reports** of tornadoes, high winds, and hail. A total of 57 tornadoes were confirmed, which is the **5th most tornadoes in the Southeast in the month of May since 1950**. Most of these occurred as part of a **severe weather outbreak** that affected a large portion of the region from May 8th to 10th. Two **EF-3 tornadoes** caused substantial damage and injured several people across northern AL. Two **EF-2 tornadoes** caused considerable damage in Tallahassee, FL, including the campuses of several local colleges and universities. Damaging straight-line winds were recorded from North FL to NC, with **some gusts estimated at over 100 mph**. **Four-inch hail** was reported in central AL, while **3-inch hail** was reported in Buncombe County, NC, making it one of the **top 5 largest hailstones on record in western NC** since 1950.

Severe Weather

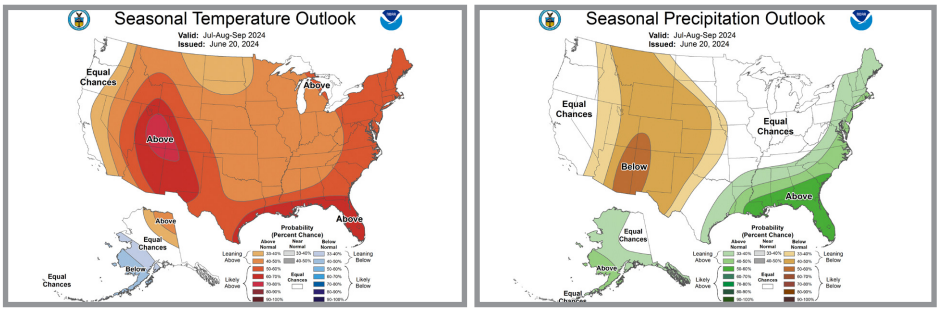
There were **1,456 reports of severe weather** this past spring, which is about 1.5 times the median spring frequency observed between 2000 and 2022. There were **80 confirmed tornadoes** (23 EF-0s, 47 EF-1s, 8 EF-2s, 2 EF-3s), which is above the median spring frequency. For the season, there were **1,116 reports of high winds**, which is nearly double the median spring frequency. There were also **254 hail reports**, which is slightly below the median spring frequency. The **largest hailstone was 4.5 inches (grapefruit-sized)** near Lumberton, NC on April 20th, which **tied for the largest hailstone recorded in the state** since 1950. Softball-sized hail (4 inches) and winds over 90 mph were also recorded around Rock Hill, SC on April 20th, resulting in around **$5 million in damage**.

Agriculture and Livestock

Mostly **wet conditions** limited field activities, delayed planting and spraying, prevented seed germination, and led to fungal diseases. Some agricultural facilities flooded, causing crops to spoil. **Flooded fields** forced farmers to replant. Multiple rounds of **severe weather** resulted in crop damage. On the other hand, **precipitation was largely beneficial** across FL, helping to improve pasture and grazing conditions, reducing the need for supplemental feed, and allowed for preparation of planting for summer crops. **Dry and warm conditions** in April allowed many crops to **progress well**, including fruit crops, winter wheat, pastures, and soybeans, which also avoided frost damage from earlier in the year. However, dry conditions **delayed the planting** of some crops and **slowed pasture growth** in NC, while **heat and a lack of rain** in south FL affected citrus, pastures, and livestock.

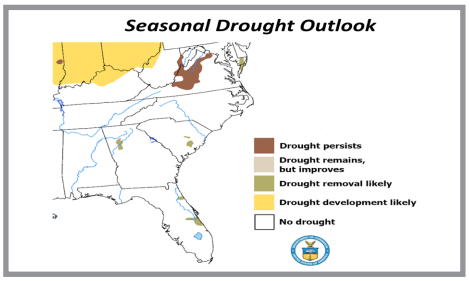
Regional Climate Outlook for Summer 2024

Temperature and Precipitation



NOAA's Climate Prediction Center (CPC) is forecasting **above average temperatures and above average precipitation** across the Southeast from July-September. Probabilities are lowest in the interior of the region (33-50%) and highest across FL (60-70%).

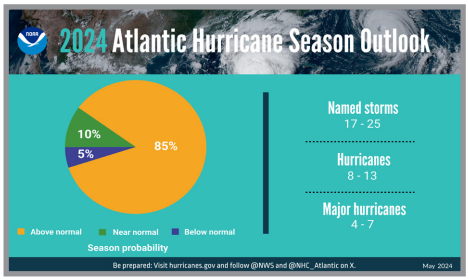
Drought



Given a favorable precipitation outlook, **drought removal** is expected across FL, GA, and SC. On the other hand, drought is **expected to persist** across VA through the end of September.

Atlantic Hurricane Season

On May 23rd, the CPC issued its outlook for the Atlantic Hurricane Season, which calls for **above-normal activity** this year. The forecast is for 17 to 25 total named storms, of which 8 to 13 could become hurricanes, with 4 to 7 becoming major hurricanes (Category 3+). The outlook reflects a **combination of favorable conditions**, including near-record warm ocean temperatures in the Atlantic Ocean, the development of La Niña, less wind shear, weaker trade winds, and an above-normal west African monsoon.



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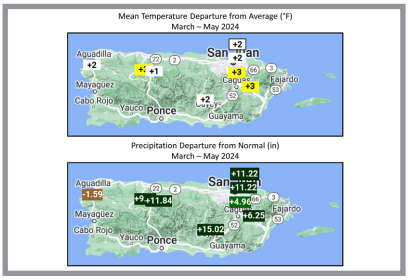
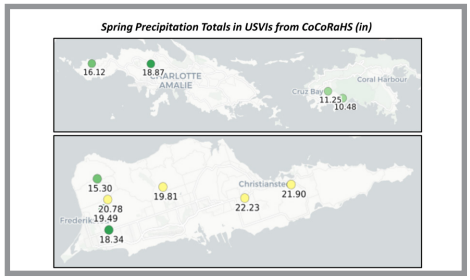
Caribbean Climate Overview and Impacts for Spring 2024

Temperature and Precipitation Anomalies



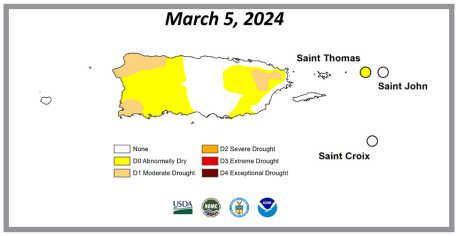


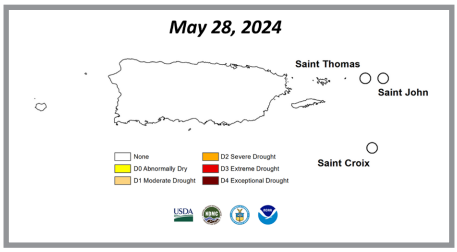
Temperatures this past spring were **above average** across PR and the USVIs. San Juan, PR recorded its **second warmest spring** on record (since 1898). Several other locations on the island also recorded one of their top 3 warmest springs on record. Heat indices exceeded 100 degrees F, and in some cases 115 degrees F, across the region, prompting **16 heat advisories and four excessive heat warnings**. Precipitation was **above average** across the Caribbean, with some locations recording more than double their expected amounts. San Juan recorded 23.54 inches for the season, which ranks as the **5th wettest spring on record**. Most CoCoRaHS gauges in the USVIs recorded 10-20 inches for the season, which is **2 to 3 times the average seasonal totals** based on data from long-term stations in the region.

Agriculture and Water Resources

Above average precipitation helped **recharge reservoirs, replenish wells and groundwater, and fill farm ponds**. This was a welcome relief following water shortages from last year's drought. Most **streamflows on PR were near to above normal** by the end of the season. As such, **improvements** in vegetation, crops, pasture, livestock, and poultry were noted in many parts of the region. However, some places received **too much precipitation**, which led to flooding of fields and access roads. **Saturated soils** prevented much field work and introduced **pests and disease pressures**. Heavy intermittent precipitation falling on drought-weakened soils resulted in **landslides and erosion**, which limited field work and caused damage to crops. **Extreme heat** continued to make field operations challenging for farmers. It also negatively affected vegetation and crop health, particularly during intermittent dry and windy periods.

Drought

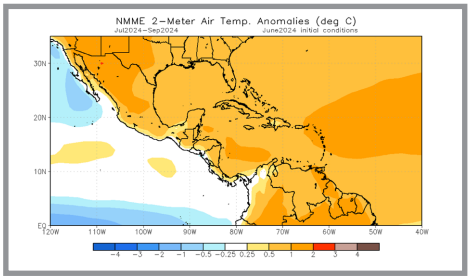


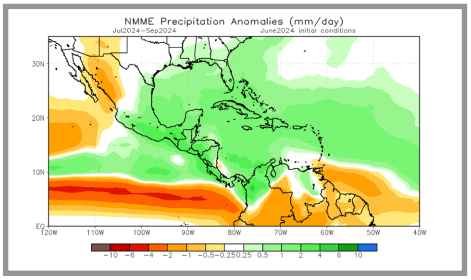


Spring began with **moderate (D1) drought covering about 16% of PR**, specifically the northwest, southwest, and eastern portions of the island. **Abnormal dryness (D0) was also found** across the western third and eastern third of the island, as well as on Saint Thomas. However, above average precipitation **eliminated all drought and abnormal dryness across the region** by the end of May for the first time since December 2022.

Caribbean Climate Outlook for Summer 2024

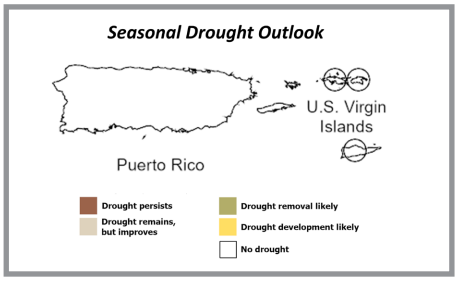
Temperature and Precipitation





According to the North American Multi-Model Ensemble (NMME), **above-average temperatures and precipitation** are expected across the Caribbean during the July-September period.

Drought



According to the CPC and Caribbean Climate Outlook Forum, PR and the USVIs are expected to **remain drought-free through the summer and into early autumn**. Factors include above average precipitation this past spring and the expectation of above average precipitation this summer (with potential for tropical activity).

Southeast Region Partners

- National Oceanic and Atmospheric Administration
  - National Centers for Environmental Information
  - National Weather Service Eastern Region
  - National Weather Service Southern Region
  - Climate Prediction Center
  - National Hurricane Center
  - National Integrated Drought Information System
  - Carolinas Integrated Sciences and Assessments
  - National Sea Grant Office
  - Southeast and Caribbean Regional Collaboration Team
- State Climatologists
- Southeast Regional Climate Hub
- Southeast Climate Science Center
- Community Collaborative Rain Hail and Snow Network

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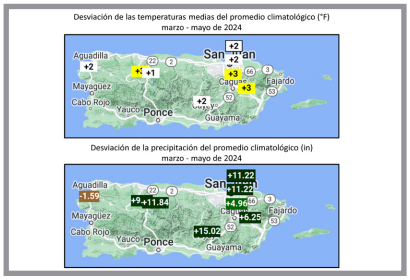
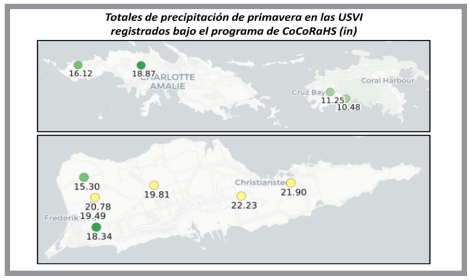
Perspectiva general del clima e impactos en el Caribe durante la primavera de 2024

Anomalías de temperatura y precipitación



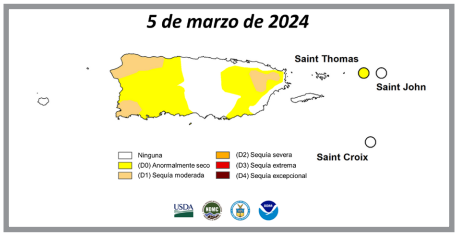


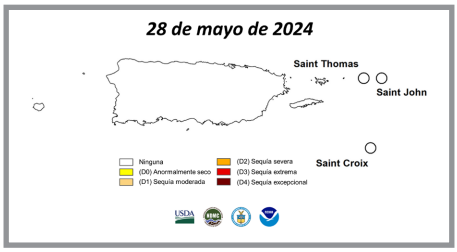
Las temperaturas durante la primavera de 2024 estuvieron por encima del promedio a través de Puerto Rico (PR) y las Islas Vírgenes Americanas (USVI, por sus siglas en inglés). San Juan, PR registró su segunda primavera más cálida desde que existen registros (1898). Varios otros lugares de la isla también tuvieron una de las tres primaveras más cálidas en registros. Los índices de calor excedieron los 100 grados F, y en algunos casos los 115 grados F a través de la región, lo que provocó 16 Advertencias de Calor y 4 Avisos de Calor Excesivo. La precipitación estuvo por encima del promedio a través del Caribe, con algunos lugares registrando más del doble de sus cantidades esperadas. San Juan registró 23.54 pulgadas de lluvia durante la temporada, lo que la clasifica como la 5ª primavera más húmeda en la historia. La mayoría de los pluviómetros del programa de CoCoRaHS en las USVI registraron entre 10 a 20 pulgadas de lluvia durante la temporada, lo cual es de 2 a 3 veces mayor al promedio, basado en datos de estaciones a largo plazo en la región.

Agricultura y recursos hidrológicos

La precipitación por encima del promedio ayudó a rellenar las reservas, pozos, el agua subterránea y los estanques agrícolas. Este fue un alivio bienvenido luego de la escasez de agua por la sequía del año pasado. La mayoría de los flujos de corriente en PR estaban cerca de lo normal para el final de la temporada. Por esto, se notaron mejoras en la vegetación, los cultivos, pastizales, el ganado y en el sector avícola en muchas partes de la región. Sin embargo, algunos lugares recibieron demasiada precipitación, lo que condujo a inundaciones en los campos y las carreteras de acceso. Los suelos saturados impidieron mucho trabajo de campo e introdujeron presión debido a plagas y enfermedades. Las fuertes lluvias intermitentes que caían en los suelos debilitados por la sequía resultaron en deslizamientos de terreno y erosión, que limitaron el trabajo de campo y causaron daños a los cultivos. El calor extremo continuó haciendo que las operaciones de campo fueran desafiantes para los agricultores. También afectaron negativamente a la vegetación y la salud de los cultivos, particularmente durante periodos intermitentes de sequedad y viento.

Sequía

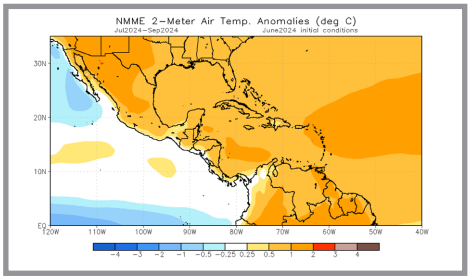


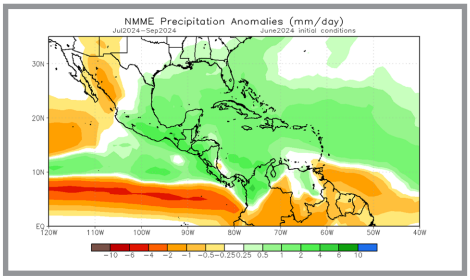


La primavera comenzó con una sequía moderada (D1) que cubría alrededor del 16% de PR, específicamente el noroeste, suroeste, y las porciones este de la isla. También se encontró una sequedad anómala (D0) a través del tercio oeste y el tercio este de la isla, así como en St. Thomas. Sin embargo, la precipitación por encima del promedio eliminó toda la sequía y sequedad anómala a través de la región para finales de mayo, por primera vez desde diciembre de 2022.

Perspectiva del clima en el Caribe para el verano de 2024

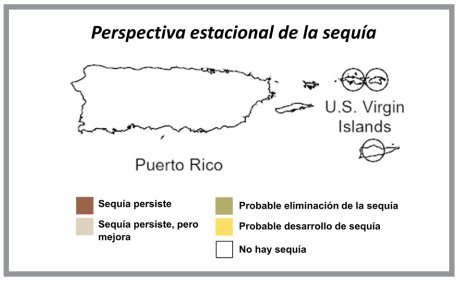
Temperatura y precipitación





Según el conjunto multi-modelo norteamericano (NMME, por sus siglas en inglés), se esperan temperaturas y precipitación por encima del promedio a través del Caribe durante el período de julio a septiembre.

Sequía



Según el Centro de Predicciones Climáticas (CPC, por sus siglas en inglés) y el Foro de Perspectiva del Clima en el Caribe, se espera que las USVI permanezcan libres de sequía durante el verano y principios del otoño. Los factores incluyen la precipitación por encima del promedio esta pasada primavera y la expectativa de precipitación por encima del promedio durante el verano (debido al potencial de actividad tropical).

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