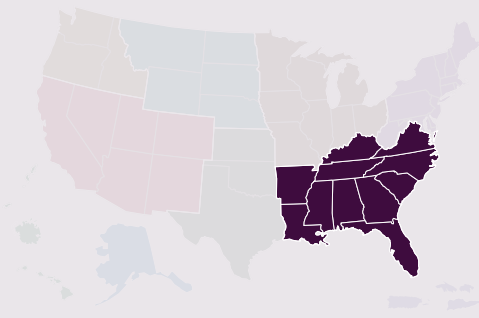


# Preparing for the Health Impacts of Climate Change in **Southeast**



## **Temperature-Related Death and Illness**

Heatwaves in the Southeast are happening more frequently and occurring during longer heat seasons, with some cities also showing increasing trends in their duration and intensity. Sixty-one percent of major Southeast cities are exhibiting some aspects of worsening heat waves, which is a higher percentage than any other region of the country.

Extreme heat affects everyone, but particularly at risk are pregnant women, people with heart or lung conditions, older adults and young children, people with mental health conditions, outdoor workers in construction, agricultural workers, athletes, and populations who lack adequate shelter or are incarcerated.



## **Air Quality Impacts**

In the Southeast, some sources of poor air quality include vehicle or power plant emissions, industrial facilities, wildfires, and airborne allergens. Urban areas have higher concentrations of carbon dioxide which causes allergenic plants, such as ragweed, to grow faster and potentially produce more pollen allergens than in rural areas. Pollen increases pose significant health risks, including aggravating respiratory conditions such as asthma, which has been linked to a loss of school and workdays. The associated health effects of poor air quality are experienced disproportionately by communities of color and populations with lower socioeconomic status. This region has more days with stagnant air masses than other regions of the country (40% of summer days) and higher levels of fine particulate matter (PM<sub>2.5</sub>). The Southeast is projected to have the highest number of premature deaths due to climate-induced increases in PM<sub>2.5</sub> and ozone exposure in the country.



## **Extreme Events**

Growth along the region's coastlines has increased the population exposed to coastal-specific climate threats. An assessment by the Florida Department of Health determined that 590,000 people in south Florida face "extreme" or "high" risk from sea level rise, with 125,000 people living in these areas identified as socially vulnerable and 55,000 classified as medically vulnerable. In addition to causing direct injury, storm surges and related

flooding can impact transportation infrastructure by blocking or flooding roads and affecting access to healthcare facilities.

Rising disaster costs negatively impact local and regional economies, some of which are already affected by limited upward economic mobility for their population, as well as by limited administrative, institutional, and social capacity. Financial losses attributed to climate change are expected to increase as rapid development continues to occur in hazardous areas, particularly along coasts.



## **Vector-Borne Diseases**

The Southeast has the most favorable conditions for the *Aedes aegypti* mosquito and thus faces the greatest threat from diseases the mosquito carries. Warmer conditions may have facilitated the expansion of the geographic range of mosquito populations and could potentially increase their capacity to transmit diseases such as chikungunya, dengue, malaria, West Nile virus, and Zika virus.

For ticks that carry diseases such as Lyme and Rocky Mountain spotted fever, statistical models predict varying shifts in ecosystems suitable for ticks to live in the Southeast depending on the degree of warming, species of tick, land-use changes, and host abundance.



## **Water-Related Illness**

Some wastewater utilities may not have developed plans to assure system resilience in response to heavy precipitation and flood events.

Consequently, future populations may be exposed to untreated wastewater and its associated pathogens due to climate change.

Simultaneously, rising temperatures and precipitation could intensify harmful algal blooms (HABs). HABs have significant negative impacts on human and animal health, as well as broad-reaching environmental and economic effects. Humans may experience various health issues from HAB exposure, such as diarrhea and headache.



## **Food Safety, Nutrition and Distribution**

Extreme weather and coastal stressors are affecting crop production, aquaculture, and livestock in the Southeast. Rising sea levels have increased saltwater intrusion in coastal aquifers, reducing the extent of available forests and farmland and threatening seafood harvesting in estuaries by altering the salinity and turbidity in freshwater streams and marine nurseries.



Further, higher overnight temperatures have reduced crop yields, which is projected to worsen with additional global warming. Hurricanes, tropical storm winds, and increasing rainfall pose unique threats to agriculture in this region.



## Mental Health and Well-Being

Mental health is of particular concern in the Southeast, as it is home to 5 out of the 10 highest-ranked states for the prevalence of mental illness, and 8 out of the 10 lowest-ranked states for access to mental healthcare services. Climate change significantly affects mental health as a result of acute disaster events and long-term existential threats of climate change impacts that make people feel less secure in their physical environment.

While extreme weather events commonly occur in the Southeast, climate change has increased their frequency and magnitude, causing residents to face repeated trauma and displacement at an unprecedented level. This can lead to stress and the onset of new psychiatric disorders or the worsening of preexisting mental health conditions, especially among children and under-resourced and BIPOC residents.



## Populations of Concern

Workers in the agriculture, forestry, hunting, and fishing sectors, together with construction and support, waste, and remediation services work are the most highly vulnerable to heat-related deaths in the United States, representing almost 68% of heat-related deaths nationally. Six of the 10 states with the highest occupational heat-related deaths in these sectors are in the Southeast region, accounting for 28.6% of occupational heat-related deaths between 2000 and 2010.

Further, the Southeast has more non-Hispanic Black residents than any other Health and Human Services (HHS) region which face unique health-related barriers. Majority non-Hispanic Black communities have less access to health resources, lower life expectancies, limited opportunities for economic prosperity, and additional barriers to access to quality education—all of which shape health outcomes. As a result, non-Hispanic Black communities in the Southeast will face a disproportionate level of health risk associated with climate change.

# CDC Success Stories

## North Carolina Department of Health and Human Services

Sea level rise, hurricane intensity, and inland flooding intensify water management challenges in North Carolina. To help protect residents living in flood-prone regions, the North Carolina Department of Health interviewed community members disproportionately at risk about flooding-related knowledge and resources. Additionally, with the National Weather Service, a river monitoring program was established in 2023. The river gauge on the Black River near Tomahawk has already been used to give residents real-time information regarding river flooding following Hurricane Ida in 2023 and will continue to help protect residents.

## Florida Department of Health

The Florida Building Resilience Against Climate Effects (FLBRACE) Program is working to improve the ability of the public health sector to respond to the health effects of climate variability by incorporating the best available science into routine public health practice. One area of concern for FLBRACE

was the accessibility of emergency shelters to vulnerable populations, such as the elderly or residents living in coastal communities, as sea level rise and more intense hurricanes threaten to flood Floridians' homes. The Florida Department of Health and the University of Florida conducted assessments of emergency shelters and made recommendations to improve communication systems and accessible shelter management. Emergency shelters now understand the gaps that need to be addressed to serve their residents at greatest risk.

## City of New Orleans Department of Health, Louisiana

The Southeast is experiencing more frequent and intense heat waves. With support through a 2020 mini-grant from CDC via the National Association of County and City Health Officials (NACCHO), New Orleans piloted a heat monitoring program where thermometers were distributed to residents to gather temperature data and develop better outreach about extreme heat and heat-related illnesses. Heat and health messages for New Orleanians with higher risk have been improved, reducing the burden of heat-related illness.

This fact sheet was prepared by the CDC Climate and Health Program, which empowers communities to protect public health from a changing climate. Information on the health impacts of climate change is provided by the Fifth National Climate Assessment. For more information on the CDC Climate and Health Program, visit <https://www.cdc.gov/climate-health/index.html>, and the Fifth National Climate Assessment, visit <https://nca2023.globalchange.gov/>.