# EXTREME HEAT IN LOUISIANA

## STAYING PROTECTED

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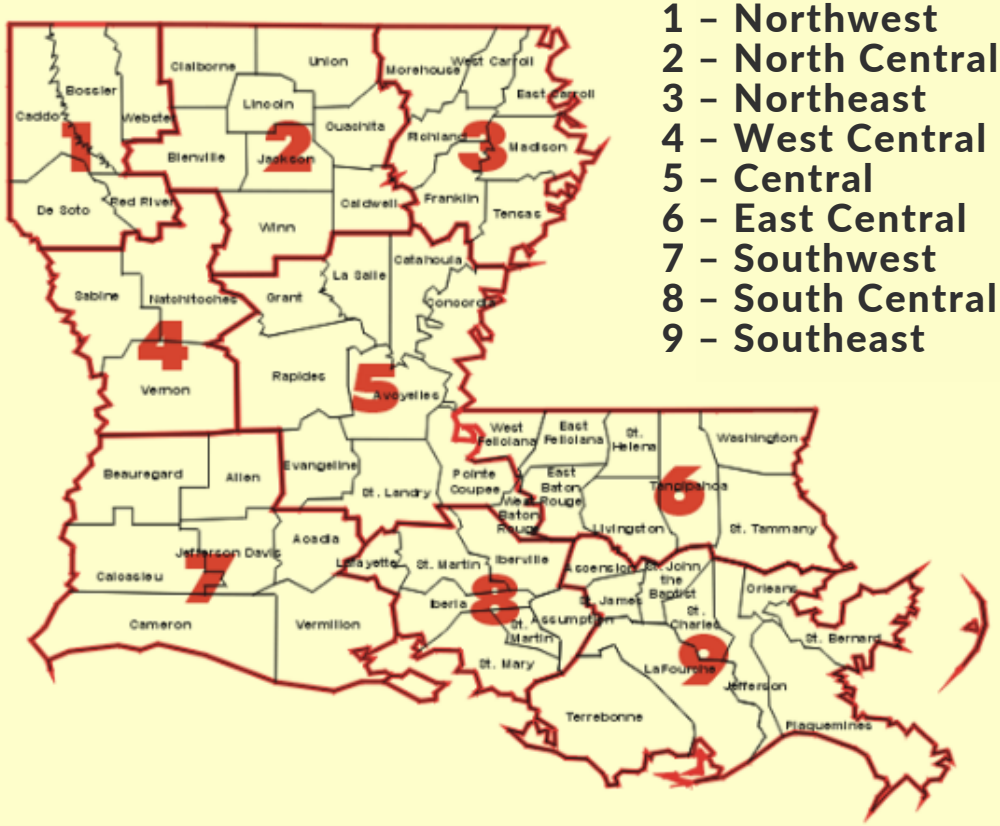
Recent summer temperatures across the state of Louisiana in 2019 and 2020 have made national news. As major heat waves affect the state, it is important to stay safe as temperatures increase. This document uses a question-and-answer format to examine the problems of extreme heat and what it means for the residents of Louisiana.

## LOUISIANA'S 9 CLIMATE DIVISIONS




1 – Northwest
2 – North Central
3 – Northeast
4 – West Central
5 – Central
6 – East Central
7 – Southwest
8 – South Central
9 – Southeast

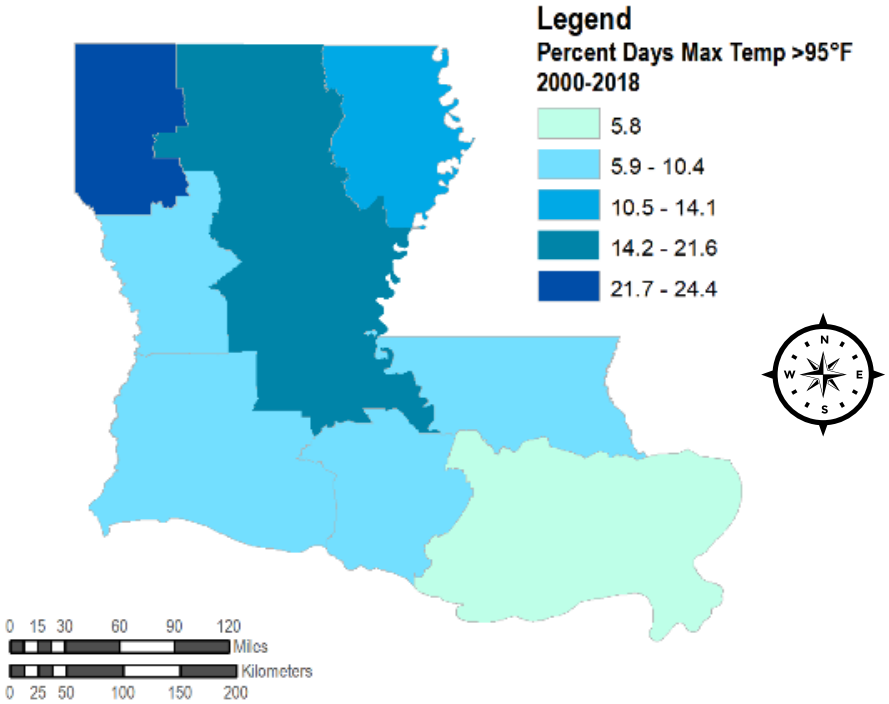
## WHY IS IT SO HOT IN LOUISIANA?

Louisiana is divided into nine climate divisions, each containing parishes with similar temperature, humidity and rain trend characteristics. While high temperatures affect the entire state, your geographical location may determine how you feel the effects of heat[1]. The general temperature across the nine climate divisions is about the same, but large differences are seen between the average maximum temperature and the average heat index (HI) for a given region.

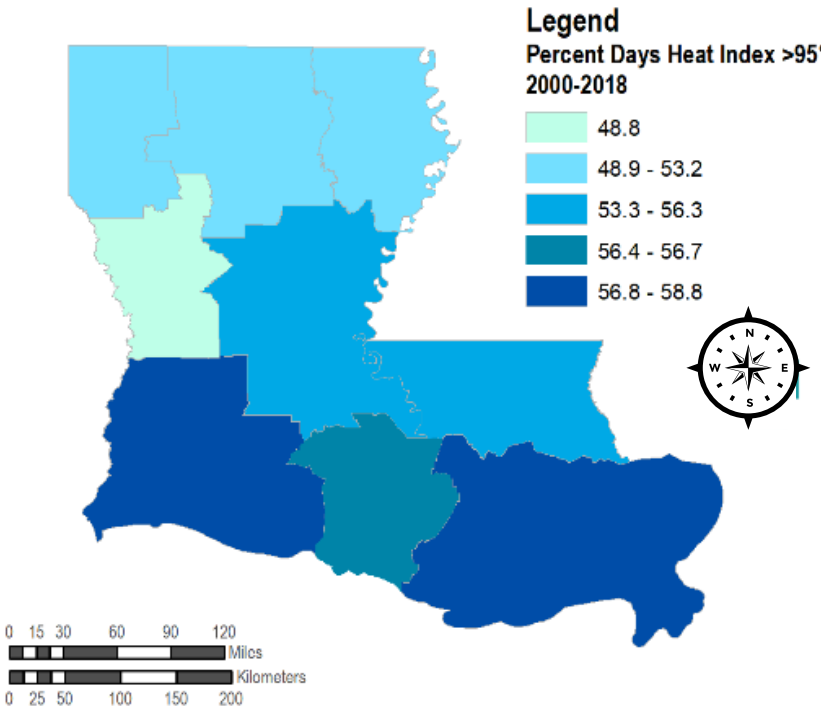
Since 1895, the average temperature has been relatively stable with differences emerging when the average maximum temperature and the maximum heat indexes are compared across the state. The average maximum temperature represents the highest actual temperature in °F/°C and the heat index represents the “feels like” temperature that often appears alongside the actual temperature. The heat index is a measure of how hot it feels outside when relative humidity and actual air temperature are taken into consideration.

# WHAT IS HUMIDITY?

### Percent Days Maximum Temperature > 95°F (2000-2018)




### Percent Days Heat Index > 95°F (2000-2018)




*Summer months May-September, by Louisiana Climate Division. Data Sources: Southern Regional Climate Center Climate Data Portal – Daily Maximum Temperature, Iowa Environmental Mesonet ASOS/AWOS/METAR Data Downloader – Heat Index*

Humidity refers to the amount of water vapor in the air. Wetlands and naturally occurring bodies of water in South Louisiana actively regulate outdoor temperatures as they absorb heat through evaporation.

This process of evaporation leads to high humidity and trends of high heat indexes, but lower actual temperatures during periods of extreme heat in South Louisiana.

Alternately, North Louisiana experiences high heat indexes coupled with an equally high temperature. Unlike South Louisiana, it is not equipped with the same naturally occurring, insulating bodies of water. This results in a higher average monthly maximum temperature and far more days where the maximum temperature is greater than 95°F or even 100°F. Humidity is the cause for these differences between heat index and actual temperature.

Just as the heat and humidity can affect the presence of clouds, storms and the weather across the state of Louisiana, it can also affect you and your family.

# WHAT IS EXTREME HEAT AND HOW CAN IT AFFECT YOU?

**Extreme heat** is defined as a maximum heat index or temperature greater than or equal to 95°F.

The National Weather Service issues a **Heat Advisory** when the temperature is greater than or equal to 103°F or when the Heat Index is greater than or equal to 108°F.

An **Excessive Heat Warning** is issued when the temperature is greater than or equal to 105° or the heat index is greater than or equal to 113°F.

Exposure to extreme heat for any amount of time can lead to **heat stress** resulting in **heat-related illness**. Heat stress and heat-related illness occur when our body is unable to cool itself enough to maintain a healthy temperature.[2] This condition can manifest in a variety of ways ranging from mild to severe.

| WHAT TO LOOK FOR: | | | |
|---|---|---|---|
| **HEAT RASH**<br>• Red clusters of pimples or small blisters on the neck, upper chest, groin, under the breasts and in elbow creases | **HEAT CRAMPS**<br>• Heavy sweating during intense exercise<br>• Muscle pain or spasms | **HEAT EXHAUSTION**<br>• Muscle pain or spasms<br>• Cold, pale, clammy skin<br>• Nausea or vomiting<br>• Muscle cramps<br>• Tiredness or weakness<br>• Dizziness, headache, fainting | **HEAT STROKE**<br>• High body temperature (+103°F)<br>• Hot, red, dry or damp skin<br>• Fast, strong pulse<br>• Headache, dizziness<br>• Nausea, confusion,<br>• Loss of consciousness |
| **WHAT TO DO:** | | | |
| • Stay in a cool, dry place<br>• Keep the rash dry<br>• Use powder to soothe the rash | • Stop physical activity and move to a cool place<br>• Drink water or a sports drink<br>• Wait for cramps to go away before any more physical activity<br><br>**SEEK MEDICAL ATTENTION IF:**<br>• Cramps last longer than 1 hour<br>• You're on a low sodium diet<br>• You have heart problems | • Move to a cool place and loosen your clothes<br>• Put cool, wet cloth on your body or take a cool bath<br>• Sip water<br><br>**SEEK MEDICAL ATTENTION IF:**<br>• You're throwing up<br>• Your symptoms get worse<br>• Your symptoms last longer than 1 hour | **Call 911 right away — Heat Stroke is a Medical Emergency**<br><br>• Move the person to a cooler place<br>• Help lower the person's body temperature with cool cloths or a cool bath<br>• Do not give the person anything to drink. |

# WHO IS MOST AFFECTED BY HEAT-RELATED ILLNESS?

Heat-related illnesses, also referred to as **heat-stress** Illness, can affect anyone, but some are more vulnerable than others.[1,2] The most vulnerable populations include:

- Outdoor workers
- Individuals with heart or lung conditions
- Birthing persons
- Older adults
- Athletes
- Young children

Extreme heat interferes with sweating, the body's main cooling mechanism, which puts those who work outdoors at increased risk of developing heat-related illness. Workers who have heart disease, are over 65, have high blood pressure, are overweight or take medications that can be affected by extreme heat are at greater risk of heat-related illness. Risks from extreme heat can be alleviated by removing the individual from the heat immediately, administering cooling techniques or calling 911 depending on severity.

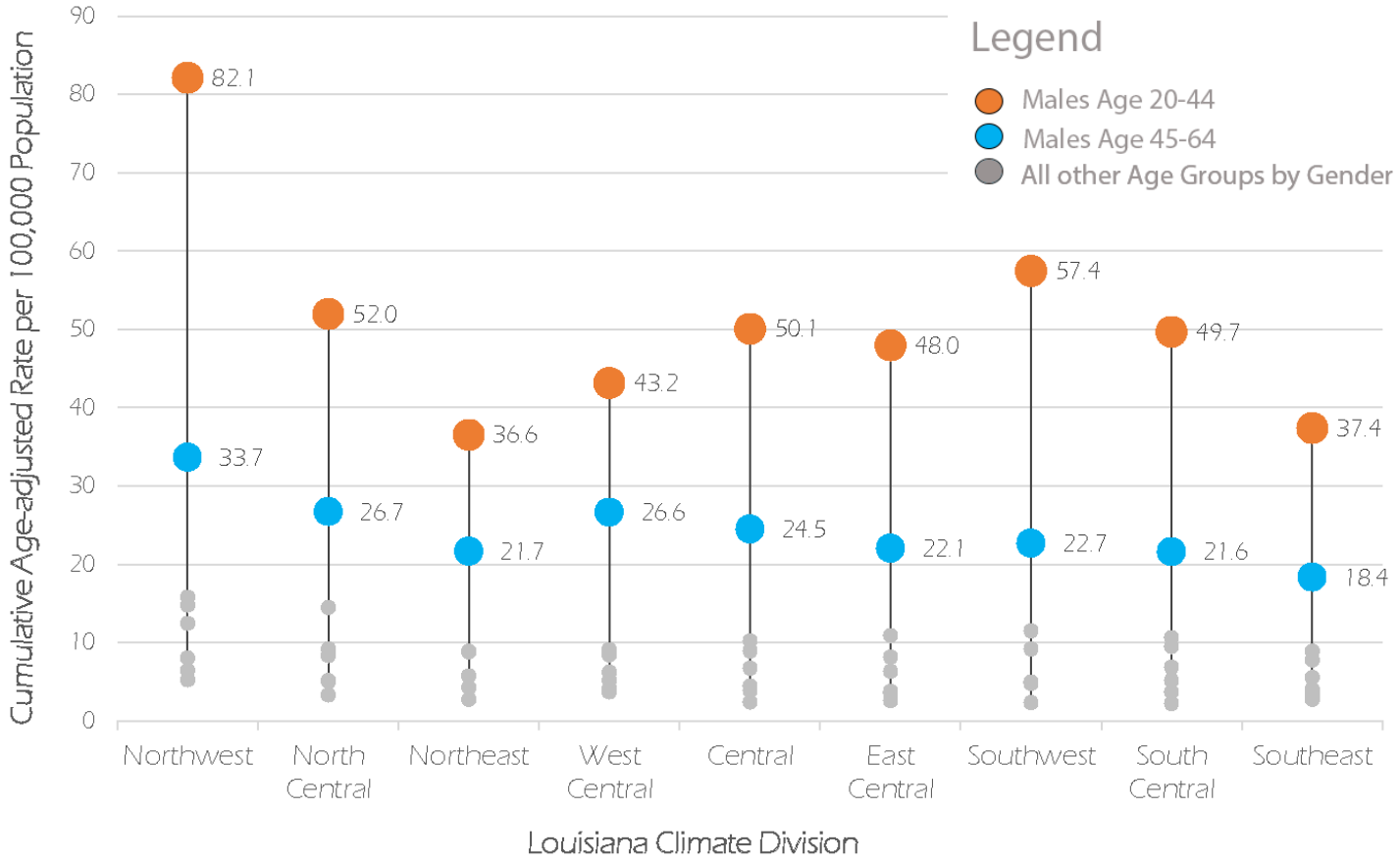
# EXTREME HEAT AND COVID-19

The public, medical professionals and public health officials need to be prepared for heat waves to prevent and tackle the possible health consequences of heat exposure across the state. This is particularly important this year due to the ongoing COVID-19 pandemic.

The health effects brought on by extended exposure to hot weather combined with the current COVID-19 outbreak make for a difficult situation for Louisiana residents, especially those most vulnerable to infection and the heat.[3]

# HEAT-RELATED ILLNESS AND TEMPERATURE IN LOUISIANA

**Males Aged 20-44 and 45-64 were the most frequent visitors to the Emergency Room (2010-2018) in Louisiana**




*Data Source: Louisiana's Environmental Health Tracking Data Explorer* ***https://healthdata.ldh.la.gov/***

The heat and humidity of Louisiana's climate make heat exposure a serious health concern.

According to recent data, **males in the age groups 20-44 and 45-64** were the most frequent visitors to the **emergency department (ED)** in Louisiana (2010-2018, Louisiana Environmental Health Tracking) compared to all other age groups by gender.

Analyzed by Climate Division, **Northwest** Louisiana **(Climate Division 1** on reference map, Page 2) had the highest rate of ED visits from 2010-2018.

# WHAT IS A HEAT WAVE?

A **heat wave** is a period of abnormally hot weather generally lasting more than two days. In one example, according to the National Weather Service, 2011 was ranked as one of the warmest years ever in locations including Monroe and Shreveport, Louisiana. For the month of August 2011, several of Louisiana's Climate Divisions recorded **between 27 and 30 days that month** where the **maximum temperature was 95°F or higher.** These included the Northwest, East Central, South Central and Southeast Climate Divisions.

Temperature trends such as maximum temperature and heat index can be viewed in an interactive data query on the LDH Data Explorer. Northwest Louisiana, which includes Shreveport, experienced over 25 days of maximum temperatures over 95°F every day for several months in 2011 (in June, July and August) and again during the summers of 2016 (July) and 2018 (during both July and August) where maximum temperatures exceeded 95°F every day for 25 and 23 days of the month, respectively.

# EXPLORE DATA ON EXTREME HEAT

Information and data related to heat-related illness, temperature and many other **environmental health** topics on extreme heat can now be explored. **Environmental Heath Tracking Programs** at Louisiana's Department of Health (LDH), the U.S. Centers for Disease Control and Prevention (CDC), and other states or cities have partnered to provide access to a growing network of health and environmental data.

Local and nationwide data on heat-telated illness and temperature can be searched and downloaded using **Data Explorers**. These data can be viewed as maps, tables and charts.

**Louisiana Department of Health Environmental Health Tracking Website:**
https://ldh.la.gov/tracking

**Data Explorer:**
https://healthdata.ldh.la.gov

**CDC Tracking National Website and Data Explorer:**
https://www.cdc.gov/ephtracking

# HOW CAN YOU PREVENT HEAT-RELATED ILLNESS?

- Wear light-colored, loose-fitting clothing.
- Drink water often, not only when you are thirsty.
- Avoid unnecessary hard work or activities if you are outside or inside a building without air-conditioning.
- Avoid unnecessary exposure to the sun. When in the sun, wear a hat with a wide brim if possible.[1,3]
- Stay in air-conditioned areas during the hottest part of the day.
- If you do not have air conditioning in your home, reference official COVID-19 guidelines for going to a public place such as a shopping mall or library to stay cool.
  - **Visit this link for additional ways to Beat the Heat this summer**
- Cooling stations and senior centers operating under COVID-19 guidelines may also be available in many larger cities for people of all ages.
  - **For CDC guidance on Cooling Centers & COVID-19, visit this link**
- Air conditioning is the strongest protective factor against heat-related illness. Exposure to air-conditioning even for a few hours a day will reduce the risk of heat-related illness.[3]

**STAY COOL. STAY HYDRATED. STAY INFORMED.**

# FOOTNOTES


1. http://ldh.la.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/LMR/Newsletter/2019/November2019_FINAL.pdf
2. https://www.cdc.gov/niosh/topics/heatstress/default.html
3. https://ephtracking.cdc.gov/showClimateChangeExtremeHeat.action
4. https://www.weather.gov/lix/wwa_criteria#Heat%20Products
5. https://www.weather.gov/safety/heat-index
6. https://www.cdc.gov/disasters/extremeheat/warning.html


# ACKNOWLEDGEMENTS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