

Louisiana's Climate

As you read, look for:

- the difference between weather and climate,
- the effect of climate on the people and the physical environment, and
- vocabulary terms **weather, climate, precipitation, tornado, hurricane, and growing season.**

People often confuse weather and climate. **Weather** measures the current conditions of the atmosphere: temperature, precipitation, and wind. **Climate** is the average weather of an area over a long period of time, such as 25-30 years. The daily television news gives a weather report, not a climate report.

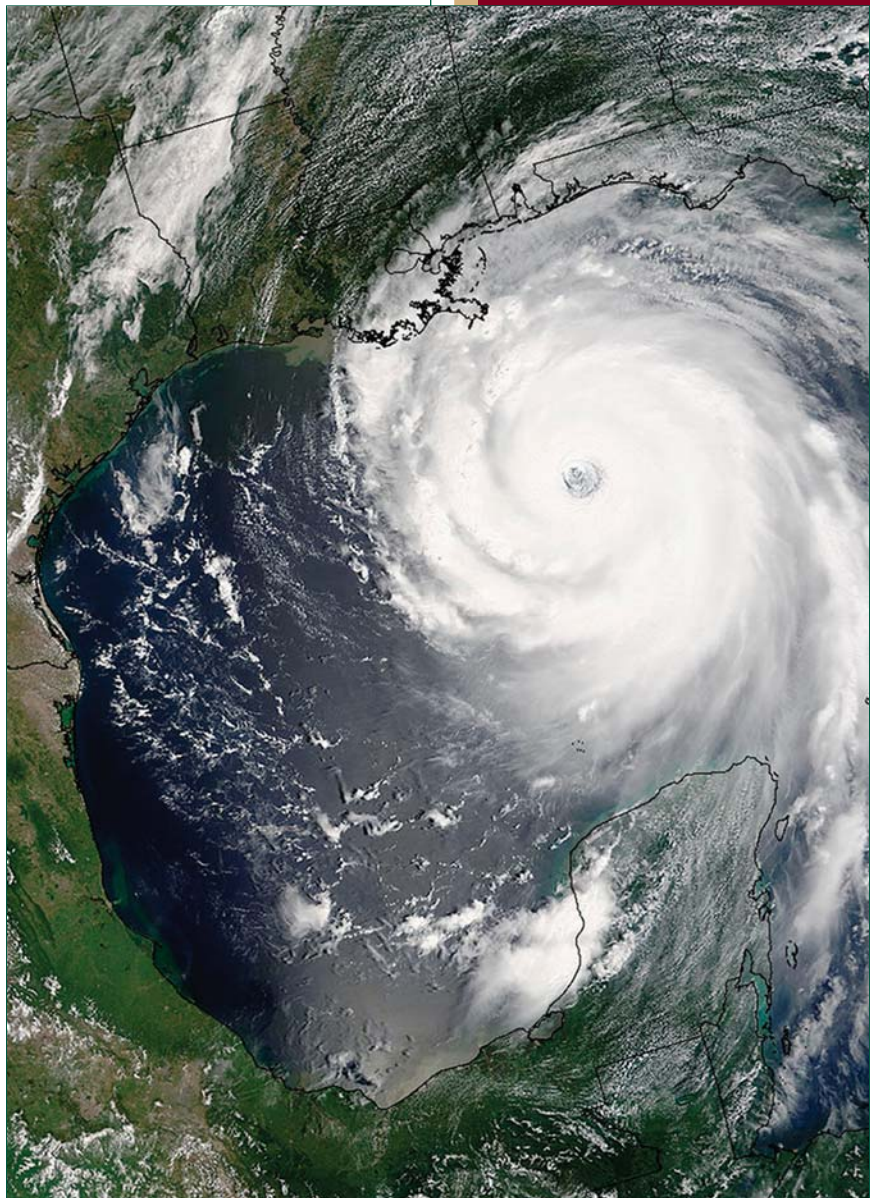
Louisiana's climate is most affected by the Gulf of Mexico, its distance from the equator, and its position on the North American continent. Based on climate, Louisiana has only two regions—North Louisiana and South Louisiana—and the state's five natural land regions fit into these two climatic regions.

Louisiana has a *humid subtropical* climate. This means the summers are just as hot as a tropical climate. It is the winter freezes that cause Louisiana to be classified as subtropical.

Much of the warm air and moisture that create this humid subtropical climate are the result of high pressure systems that approach Louisiana from Florida and carry huge amounts of moisture.

The continental air masses also influence Louisiana's climate. These high

Below: Louisiana is no stranger to summer hurricanes. This satellite photo shows Hurricane Katrina approaching the Louisiana coast in August 2005.



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In most Louisiana winters, there is little or no snowfall.

In 1899, however, snow covered all of Louisiana, even the mouth of the Mississippi. Rayne in Acadia Parish got a record 24 inches of snow from that storm.

pressure systems generally move from west to east across North America. Because there are no mountains to stop them, these continental air masses hit Louisiana full strength and flow across the state.

Temperature, precipitation, and wind are the atmospheric conditions used to describe climate.

Temperature

Surprisingly to some, North Louisiana has the highest temperatures in the state. South Louisiana benefits from the cooling effects of the Gulf of Mexico. The highest temperature ever recorded, 114°F (Fahrenheit), occurred on August 10, 1936, in Bossier Parish at Plain Dealing. Fewer than fifty miles away, Minden in Webster Parish recorded the state's lowest temperature of -16°F on February 15, 1899.

In July, the average temperatures in the state range from 73°F to 93°F; January's average temperatures range between 32°F and 55°F. The greatest temperature ranges occur in northwest Louisiana.

Precipitation

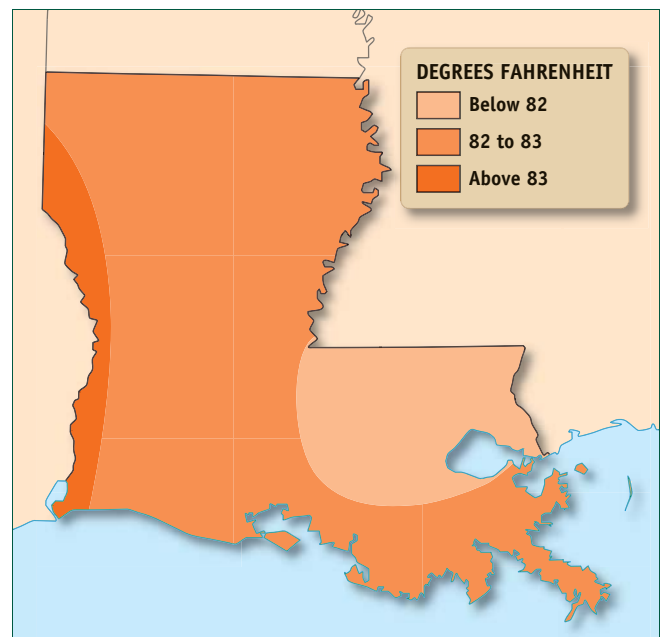
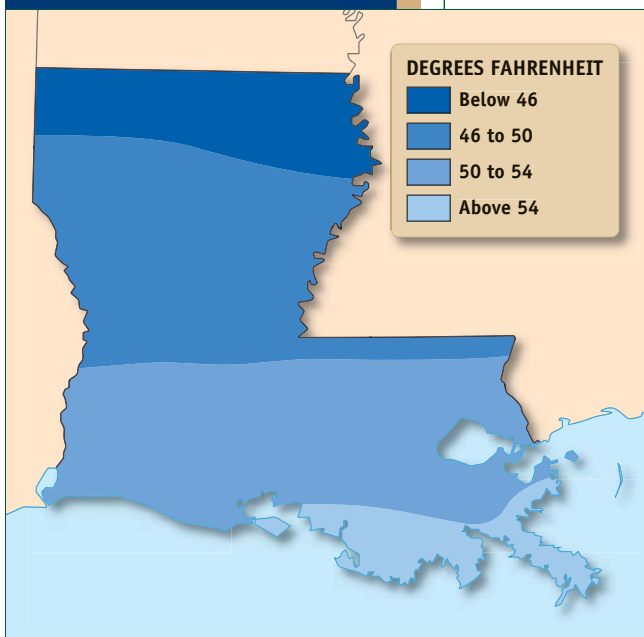
Precipitation means any form of water—liquid or solid—that falls from the atmosphere and reaches the ground. Rain is the most frequent type of precipitation in Louisiana, with occasional summer hail storms. In winter, sleet is more common than the rare snowfall.

Map 8 (left) Average January Temperatures

Map Skill: What is the average January temperature for where you live?

Map 9 (right) Average July Temperatures

Map Skill: What is the average July temperature for where you live?



The most rain falls in the southeast and the least in the northwest. Caddo Parish has an annual average rainfall of 48 inches, while Washington Parish has an average of 70 inches.

Wind

Wind causes the worst weather assaults on Louisiana. Two kinds of windstorms bring danger and destruction to the state each year.

Tornadoes

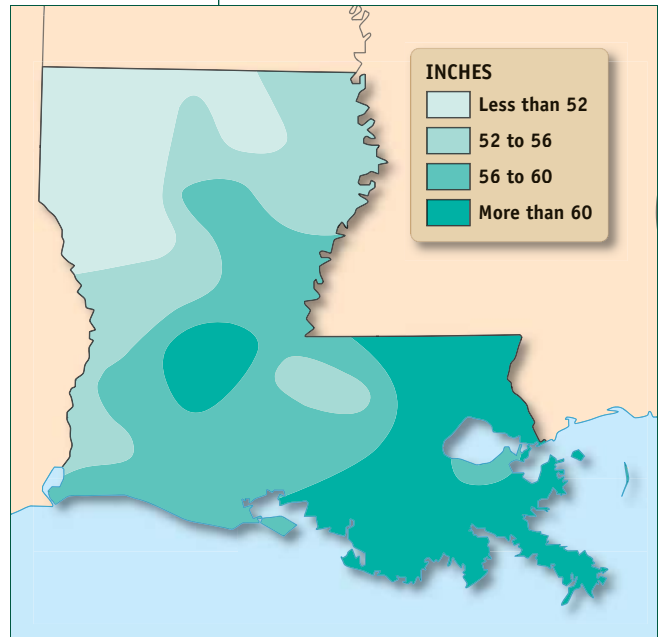
The **tornadoes** that threaten Louisiana give little warning. These dangerous, funnel-shaped windstorms can develop in five or ten minutes. A tornado may form in the atmosphere when the clouds of a thunderstorm are present or when cool air meets a layer of warm air.

Weather radar and computer technology can spot the tornado, but often not in time for people to get out of its way. The dangerous storm moves forward at about 50 miles an hour and is usually about 100 yards wide. Inside the funnel cloud, the winds are circling at speeds up to 300 mph. These high winds move counterclockwise around a low pressure center. The extreme low pressure center, called an *eye*, causes most of the damage.

Even though forecasting can now warn people that tornadoes are likely, it is not always possible to get out of danger. In recent years, LaSalle High School in LaSalle Parish was hit by a tornado, and a Bossier Parish tornado killed nine people.

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Louisiana ranks among the top twelve states for frequency of tornadoes.



Map 10 Average Annual Precipitation

Map Skill: What is the average annual precipitation for where you live?

Figure 2 Fujita Intensity Scale for Tornadoes

Rating	Wind Speeds	Expected Damage
F-0	40–72 mph	Light: Loose Debris
F-1	73–112 mph	Moderate: Broken Windows and Doors
F-2	113–157 mph	Considerable: Trees Broken
F-3	158–206 mph	Severe: Outer Walls Collapse
F-4	207–260 mph	Devastating: Structural Damage
F-5	261–318 mph	Incredible

Figure 3 Saffir-Simpson Hurricane Scale

Scale Number or Class	1	2	3	4	5
Wind Speeds (miles per hour)	74–95	96–110	111–130	131–155	Over 155
Storm Surge in Feet	4.0-4.9	5.0-7.9	8.0-11.9	12.0-18.0	Over 18.0
Expected Damage	Minimal	Moderate	Extensive	Extreme	Catastrophic



Above: Flooding is a real result of hurricanes. This photo shows New Orleans after Hurricane Katrina.

Hurricanes

Hurricanes begin over tropical ocean waters. When the wind speed of the storm reaches 74 mph, it becomes a **hurricane**. The hurricane winds rotate around a calm center or **eye** and get energy from the warm, moist air.

The hurricane attacks the coastline with high winds and the high water of storm surges. These walls of water are often more than ten feet high. When the storm surge happens during high tide, it may even reach twenty feet high. The storm surge and the heavy rain can cause major flooding. Sometimes the hurricane

winds form tornadoes, which do even more damage.

The National Hurricane Center reports that more than sixty hurricanes have hit Louisiana since the 1850s. Major hurricanes of the twentieth century included Hurricane Audrey, which killed more than four hundred people in Cameron Parish in 1957; Hurricane Betsy, which flooded New Orleans in 1965; and Hurricane Andrew, which caused \$2.4 billion in damage in 1992. Survivors of those events hoped they would never again face such destruction.

Unfortunately, 2005 brought the worst hurricane season Louisiana had ever seen. On August 29, 2005, Hurricane Katrina, a huge category 4 storm, made landfall in Plaquemines Parish, pushing a powerful and widespread storm surge. The hurricane caused extensive damage, and New Orleans flooded when drainage canal walls were breached.

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The U.S. National Weather Service started naming hurricanes in 1953, using women's names. In 1979, it began including men's names. If a hurricane causes significant damage, the name is retired from the list and is not used again.

Less than a month later, with the state still stunned by Hurricane Katrina, Hurricane Rita hit the southwest coast of the state. This category 3 hurricane struck with winds above 120 miles per hour and a storm surge of more than 15 feet.

From these two storms, more than 1,000 people died, and the damage was estimated at more than \$25 billion.

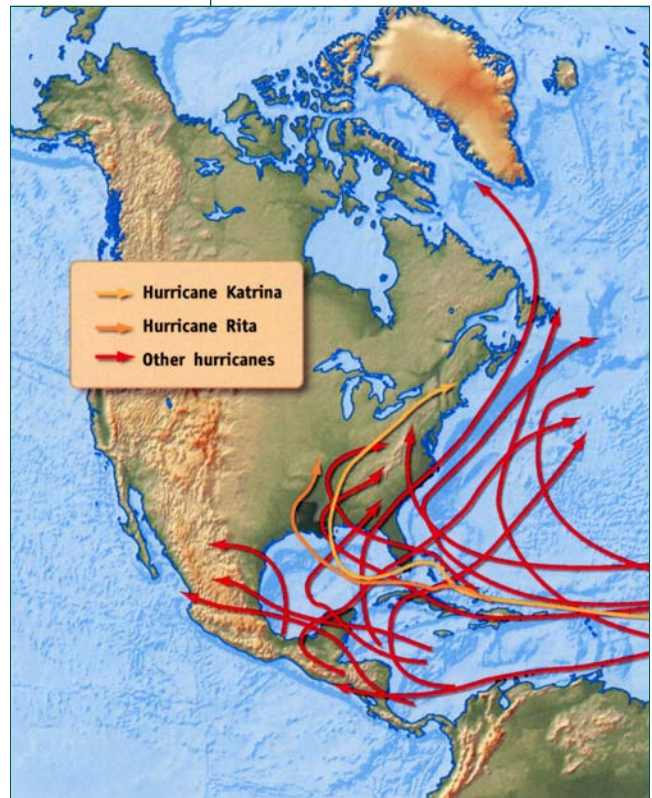
Climate and Agriculture

The hurricanes of 2005 hit Louisiana agriculture hard. Citrus trees have long thrived in Plaquemines Parish because the temperature seldom drops below freezing. Hurricane Katrina's storm surge flooded those citrus groves with saltwater and killed many trees. In southwest Louisiana, rice fields and cattle pastures were flooded with saltwater by Hurricane Rita. In southeast Louisiana, Hurricane Katrina snapped pine trees like toothpicks. Millions of acres of forests were lost.

While Louisiana's humid subtropical climate can bring risks to Louisiana farmers, it also provides a long growing season. Louisiana's growing season ranges from 210 days in north-central Louisiana to more than 290 days near the Passes. A **growing season** is the number of days between the last killing frost (below 32°F) in spring and the first killing frost in the fall.

One fruit that is the pride of Louisiana producers is the Louisiana strawberry. Louisiana's early spring gives Tangipahoa Parish strawberry growers an advantage. After 90 days, their crop is ready to sell. The first ripe berries to reach the market are from the fields of Louisiana.

Sugar cane is a tropical plant and, in its natural state, has a two-year growing season. But farmers can grow the cane for harvest with a growing season of 250 days. Only the southern part of the state has a growing season this long. If you drive south from Cheneyville in Rapides Parish, you will see where the cotton fields end and the sugar cane fields begin.



Map 11 Hurricane Paths

Map Skill: What area appears to be the most active for hurricanes?

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The greatest risk for hurricanes is during September, but hurricane season runs from June 1 to November 30.

Check for Understanding ✓

1. What are the two climate regions of Louisiana?
2. What are two influences on the climate of Louisiana?
3. What are the three atmospheric conditions that describe climate?
4. What is a storm surge?
5. How does Louisiana's climate help agriculture?