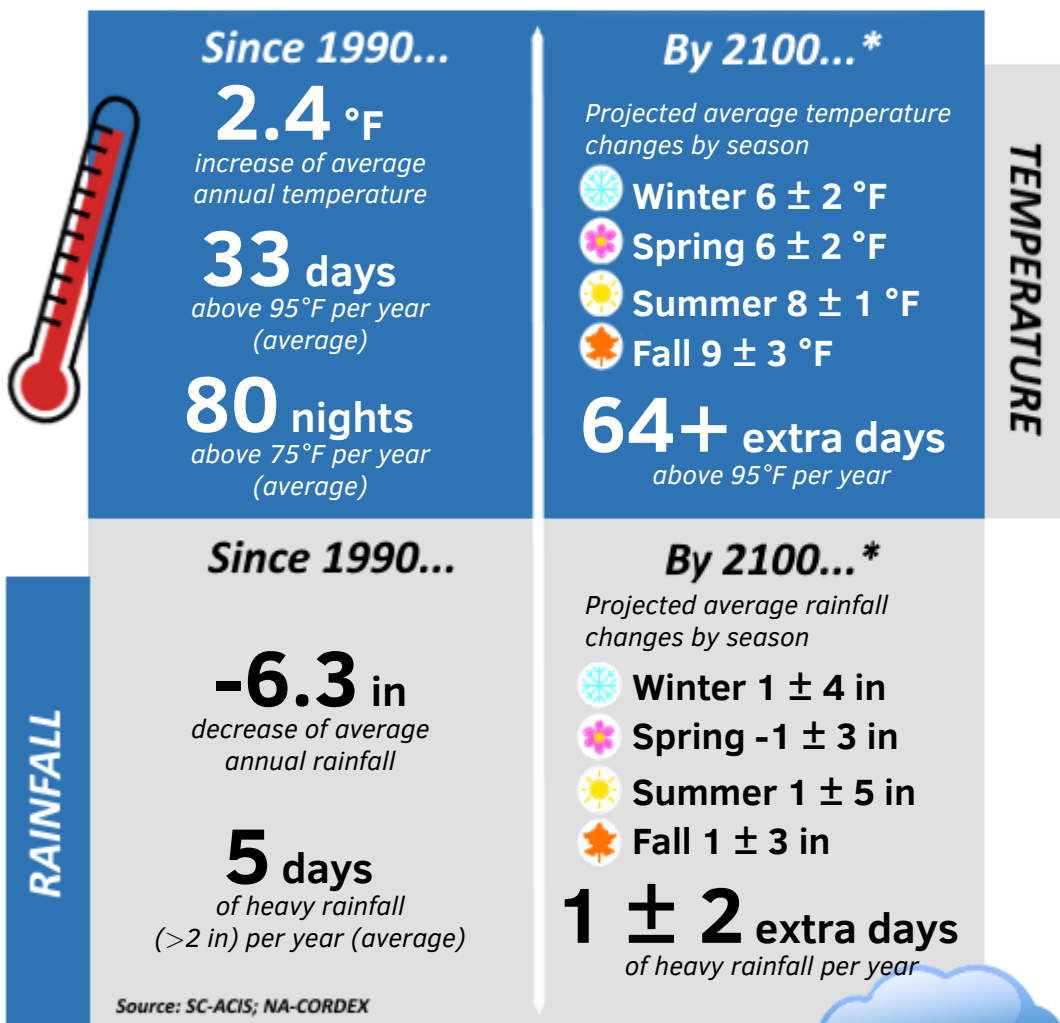


# Climate Change in New Orleans, LA

Being a coastal city that is mostly below sea level, New Orleans is vulnerable to several climate hazards, particularly tropical storms (most famously Hurricane Katrina in 2005) and sea level rise. New Orleans' many high flood risk buildings are protected by levees that surround the city, which are increasingly likely to fail as climate change continues to raise sea levels and contribute to increasingly powerful storms.



New Orleans, like the rest of South Louisiana, has experienced some of the largest temperature increases and rainfall decreases along the Gulf Coast in recent years. Key statistics about recent and future climate change in New Orleans are given below; *see the following pages for further details.*



Source: SC-ACIS; NA-CORDEX

\* Based on climate model projection ranges using higher emissions scenarios

## Climate Change Along the Gulf Coast

The Gulf Coast has seen increased temperatures and decreased rainfall in heavier bursts in recent decades, likely due to human-driven climate change. The region's coastal wetlands and low-lying cities are especially vulnerable to the challenges presented by climate change, such as reduced freshwater supply, more active hurricane seasons, and increased tidal flooding from sea level rise. As global temperature increases continue, adapting to these challenges will be essential for the sustainability of communities along the Gulf Coast. Further details can be found in the *Climate of the Gulf Coast States* report, prepared by FloodWise Communities.



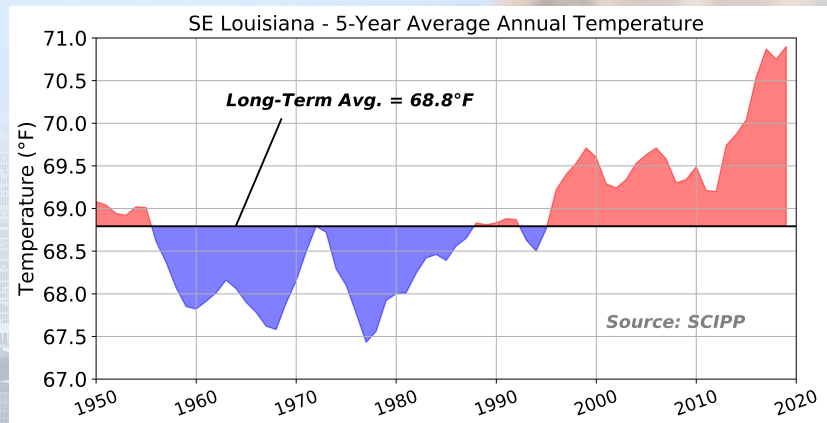
# City Climate Summary - New Orleans, LA

## Key Details

- Temperatures in New Orleans *increased by 2.4°F* between 1991 and 2020.
- Higher emissions scenarios could *increase temperatures by 5.8 to 9°F* by late-21st Century.
- New Orleans *lost over 6 inches of annual rainfall* between 1991 and 2020.
- Future rainfall trends are unclear, with a wide range of potential outcomes.
- A sea level rise of 3 feet between now and 2100 would submerge the outer edges of the city.

## Temperature in New Orleans

Being in a humid-subtropical zone, New Orleans' climate is characterized by warm summers and mild winters. Recent decades have seen average temperatures increase by over 2°F in New Orleans, with 14 more hot days (>95°F) and 55 more warm nights (>75°F) each year. If current warming trends continue, temperatures well above 90°F could be a common occurrence by 2100.



**Temperatures in Southeast Louisiana have increased by 2°F since the 1990s.**

## Historic and Projected Temperature – New Orleans

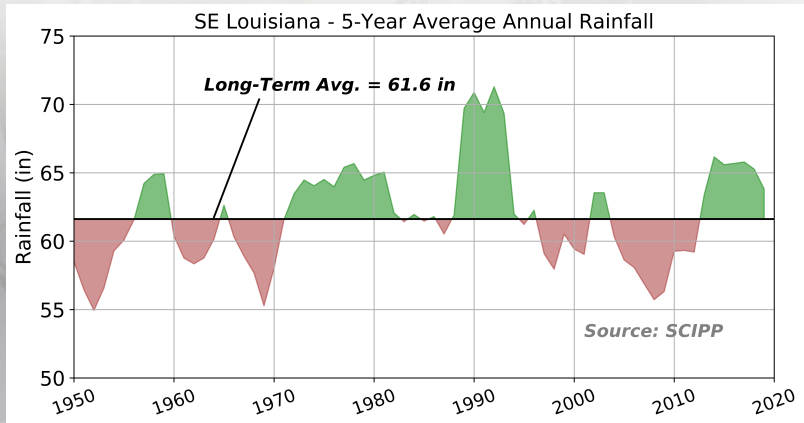
Variable	Historic Average: 1991-2020	Historic Change: 1991-2020	Mid-Century Projections: 2041-2070*	End Century Projections: 2071-2100*
Annual Avg Temp.	71.1 °F	2.4 °F	75.1 ± 1.5 °F	78.5 ± 1.6 °F
Winter Avg Temp.	56.8 °F	1.3 °F	60.2 ± 1 °F	62.9 ± 1.7 °F
Spring Avg Temp.	70.9 °F	2.9 °F	74.8 ± 1.2 °F	76.8 ± 1.6 °F
Summer Avg Temp.	84.2 °F	1.8 °F	88.6 ± 1.7 °F	91.4 ± 1.4 °F
Autumn Avg Temp.	72.1 °F	3 °F	76.4 ± 1.8 °F	81.3 ± 3.1 °F
Annual Avg High	79.8 °F	1.7 °F	83.8 ± 1.5 °F	87.4 ± 1.9 °F
Annual Avg Low	62.4 °F	3.2 °F	66.5 ± 1.2 °F	70.1 ± 1.9 °F
Hot Days (>95 °F) per year	33 days	14 days	78 ± 17 days	122 ± 25 days
Warm Nights (>75°F) per year	80 days	55 days	156 ± 13 days	193 ± 18 days

\* Projections represent the range of highest and lowest projections from the NA-CORDEX climate models, driven by the RCP 8.5 emissions scenario.

Source: SC-ACIS; NA-CORDEX

### Rainfall in New Orleans

New Orleans experiences wet conditions year-round, with summer being the wettest season. Being on the coast, convective thunderstorms and hurricanes are not uncommon, with >2-inch rains happening around 5 days every year. Future rainfall trends are hard to predict, though a mid-century increase in rainfall followed by an end-century decline is expected.



***New Orleans has experienced wetter and drier decades in the recent past, similar to the rest of Southeast Louisiana.***

### Historic and Projected Rainfall – New Orleans

Variable	Historic Average: 1991-2020	Historic Change: 1991-2020	Mid-Century Projections: 2041-2070*	End Century Projections: 2071-2100*
Annual Avg Rainfall	60.2 in	-6.3 in	64.1 ± 10.7 in	60.2 ± 10.3 in
Winter Avg Rainfall	13.0 in	-5.8 in	14.0 ± 2.7 in	14.0 ± 3.8 in
Spring Avg Rainfall	13.6 in	-2.3 in	14.5 ± 3.4 in	13.2 ± 3.4 in
Summer Avg Rainfall	21.6 in	3.2 in	23.8 ± 5.9 in	21.9 ± 5.4 in
Autumn Avg Rainfall	13.2 in	-2.1 in	14.3 ± 3.4 in	14.4 ± 2.5 in
Heavy Rains (>2-in) per year	5 days	-1 day	7 ± 2 days	6 ± 2 days

\* Projections represent the range of highest and lowest projections from the NA-CORDEX climate models, driven by the RCP 8.5 emissions scenario.

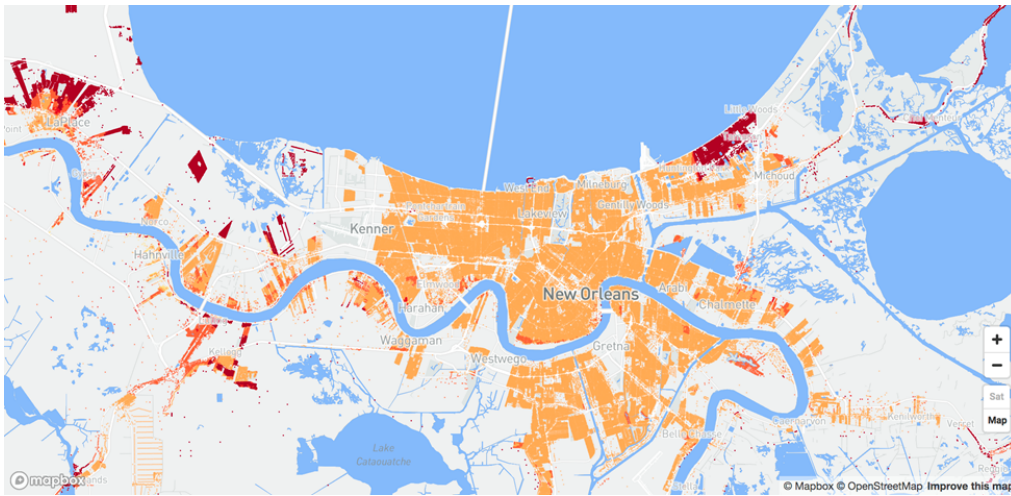
Source: SC-ACIS; NA-CORDEX

### Recent Severe Weather Events in New Orleans

Event	Date	Notes
New Orleans Flash Flood	August 2017	Around 6 inches of floodwaters; 4 inches of rain fell in 2 hours.
Hurricane Isaac	August 2012	Hundreds of thousands without power; almost \$90 million in damages.
Hurricane Gustav	September 2008	First big hurricane after Katrina; mass evacuation.
Hurricane Katrina	August 2005	638 deaths in New Orleans; >\$21 billion in damages; mass evacuations.
Hurricane Cindy	July 2005	Widespread power outages.

Source: SC-ACIS; NA-CORDEX

**Flood Risk** - around 150,000 properties in New Orleans are at risk of flooding.



Source: FloodFactor

As sea levels increase due to climate change, the number of at-risk properties is expected to increase over time. Most of the city falls within the moderate (orange) risk zone. Flood risk is greatest (dark red) on the southeast side of Lake Pontchartrain.

**Sea Level Rise** - a 3-foot rise would permanently flood New Orleans' outskirts.



Source: NOAA SLR Viewer

New Orleans has experienced over one foot of sea level rise in the last 40 years. Three more feet would leave New Orleans connected to the mainland US by a sliver of land around the Mississippi River. Sea level rise in the Gulf of Mexico could reach up to 10 feet by 2100.