



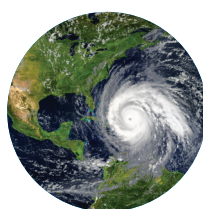
TEXAS A&M UNIVERSITY  
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ASSESSMENT of HISTORIC  
and FUTURE TRENDS of

# EXTREME WEATHER IN TEXAS, 1900-2036

## EXECUTIVE SUMMARY

### REPORT HIGHLIGHTS



*This report analyzes historic observations of temperature, precipitation, and extreme weather in Texas and identifies ongoing and likely future trends out to the year 2036. These trends represent climatological expectations; the actual weather from year to year and decade to decade will be heavily influenced by natural variability which at this point is largely unpredictable.*

#### HISTORIC TEMPERATURE TRENDS

- Rising temperatures since 1970s in Texas consistent with global trends

#### 2036 EXPECTED AVERAGE TEMPERATURE

- About 3.0°F warmer than the 1950-1999 average
- About 1.6°F warmer than the 2000-2018 average

#### 2036 EXPECTED NUMBER OF 100°F DAYS

- Nearly double the 2000-2018 average
- More 100°F days in urban areas

#### 2036 EXPECTED EXTREME SUMMER HOT DAYS

- About 1.1°F warmer than the 1950-1999 average

#### 2036 EXPECTED EXTREME WINTER COLD DAYS

- About 5.6°F warmer than the 1950-1999 average

#### HISTORIC PRECIPITATION TRENDS

- Precipitation amounts up 10% or more in eastern Texas over past century
- Little precipitation trend in western Texas

#### 2036 EXPECTED PRECIPITATION

- Additional trend small compared to natural variability

#### 2036 EXPECTED EXTREME PRECIPITATION

- Intensity 6%-10% larger than the 1950-1999 average
- Events 30%-50% more frequent than the 1950-1999 average

#### 2036 EXPECTED DROUGHT

- Increasing temperatures, rainfall variability, and other factors will on balance decrease water availability but impact changes will vary strongly across applications

#### RIVER FLOODING

- No identified long-term observed trend
- Increased river flooding most likely in areas with normally high rainfall or for the most extreme events

#### URBAN FLOODING

- Expected increase similar to extreme precipitation

#### WINTER WEATHER

- Decrease expected, but little research available

#### SEVERE THUNDERSTORMS AND TORNADOES

- Historical trend data is unreliable
- Direction of future changes is largely unknown

#### COASTAL SUBSIDENCE AND SEA LEVEL RISE

- Barrier islands and coastal wetlands are generally retreating
- Continued relative sea level rise expected

#### STORM SURGES

- Increase in severity expected due to relative sea level rise
- An increase in intensity of the strongest hurricanes is also likely overall, but local trends will be very erratic

#### WILDFIRE

- Wildfire is affected by many factors
- By themselves, changes in weather and climate would increase fire risk
- Changes in local risk involve climate change impacts on amount of dry vegetation

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**Full report at** <https://climatexas.tamu.edu/products/projections>