TEXAS
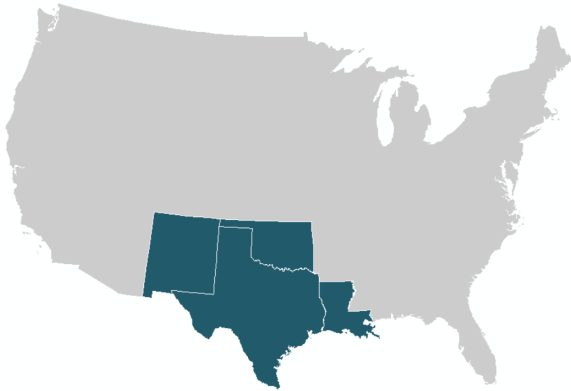
Texas falls within the domain of the South Central Climate Adaptation Science Center (SC CASC)

South Central CASC Consortium Institutions

Host: University of Oklahoma

Consortium:

Chickasaw Nation	Oklahoma State University
Choctaw Nation of Oklahoma	Texas Tech University
Louisiana State University	University of New Mexico

OUR WORK IN TEXAS

46+
Projects

since **2012**

Key Science Topics

- Wildlife & Plants
- Drought
- Fire
- Freshwater
- Wetlands

MANAGING FOR DROUGHT IN THE RED RIVER BASIN

The Red River is a vital source of water for northern Texas, supporting municipal drinking water supplies, crop irrigation, and recreational fishing for trophy catfish, bass, and gar.

WHAT:
The South Central CASC researchers modeled future temperature and precipitation changes in the Red River Basin to assess how streamflow might change in the future.

RESULTS:
Findings show that the western part of the Basin is at the greatest risk of experiencing reduced flow. Throughout the basin, peak flows will be higher and low flows will be lower—a finding that is consistent with the expectation that future floods will be more severe and droughts will be more extreme.

IMPACT:
The Chickasaw Nation is using these models in its drought contingency planning efforts to prepare for the impacts of water supply changes on people and wildlife.

ENHANCING WETLAND ADAPTATION

Tidal saline wetlands are an abundant feature of the Texas coast, where they buffer storm surge, filter water, reduce flooding, and provide fish and wildlife habitat. Sea-level rise is expected to force tidal saline wetlands to move inland, but uncertainty about how and where they will move impedes planning.

WHAT:
South Central CASC researchers mapped where future development and tidal saline wetland migration are expected to occur under potential sea-level rise scenarios. CASC scientists traveled to Texas to share these maps with managers.

RESULTS:
South Central researchers found that warmer winters will transform coastal wetlands in the Gulf of Mexico by 2100. Mangrove forests will expand northward and replace salt marshes.

IMPACT:
The City of Port Aransas and the Port Aransas National Estuarine Research Reserve requested customized maps to help guide land acquisition decisions and maximize the impact of present-day management decisions in Port Aransas.