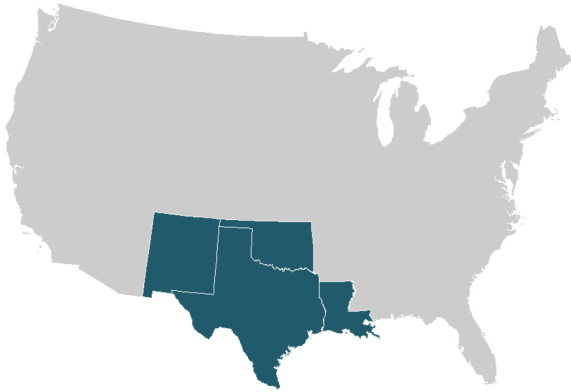




# LOUISIANA

Louisiana 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 LOUISIANA

**32+**  
Projects

since **2012**

## Key Science Topics



Wildlife & Plants



Forests



Freshwater



Wetlands



Sea-Level Rise & Coasts



## THE GULF COAST'S MIGRATING MANGROVES

*Coastal wetlands purify water, protect coastal communities from storms, store carbon, provide habitat for fish and wildlife, and offer opportunities for recreation and fishing. They are also vulnerable to changing climate conditions.*

### WHAT:

The South Central and Southeast CASCs examined how changes in temperature and rainfall could alter coastal wetlands in Florida, Alabama, Mississippi, Louisiana, and Texas.

### RESULTS:

Warmer winters will transform coastal wetlands in the Gulf of Mexico by 2100. Mangrove forests (comprised of trees) will expand northward and replace salt marshes (comprised of grasses). These shifts in vegetation could affect the ecological and economic services wetlands provide.

### IMPACT:

Helps wetland managers in Louisiana and other Gulf of Mexico states plan for future changes in wetlands and prepare for the related impacts to fish, wildlife, and ecosystem services.



## SEA-LEVEL RISE EFFECTS ON AQUATIC VEGETATION

*Submersed aquatic vegetation (SAV) communities are highly productive ecosystems that provide significant ecological benefits to coastal areas, including essential calories for wintering waterfowl. However, the potential effects of sea-level rise pose questions about the future availability of SAV for waterfowl. Increasing salinity in freshwater and brackish marshes on the Gulf Coast is a primary concern.*



### WHAT:

The South Central CASC mapped the distribution of SAV in coastal Louisiana, and determined the relationship between SAV occurrence and salinity - a necessary first step in understanding how sea-level rise might affect food availability for waterfowl.

### RESULTS:

Water depth and salinity were identified as the primary factors determining the amount of SAV available in marshes. SAV was found to occur less frequently in high salinity waters, however moderately saline waters (e.g. brackish zones) produced quantities of SAV similar to freshwater marshes.

### IMPACT:

This work directly benefits waterfowl managers with the Gulf Coast Joint Venture and USFWS in forecasting the effects of sea-level rise on the distribution and abundance of SAV resources, and the fish and wildlife populations that depend on them.