

Rebuilding the Buffer: Wetland Resilience at Work

Since the 1930s, Louisiana has lost more than 2,000 square miles of coastland, threatening local economies, ecosystems and hurricane protection. Driven by sea level rise, land subsidence, development, and reduced sediment flow, this land loss weakens coastal wetlands.

Restoring and protecting wetlands is essential to slowing land loss as these ecosystems reduce flooding, buffer hurricanes, and help regulate greenhouse gases. LSU's College of the Coast & Environment (CC&E) is home to recognized scientists whose work on wetland resilience strengthens efforts to build safer, more sustainable coastal communities.

Through this research, CC&E addresses Louisiana's coastal challenges and serves as a global model for coastal resilience.



CC&E's Recent Research

Forecasting Changes to Coastal Marshes

Uses computer models to forecast how coastal marshes may change in size, shape and salinity and how these changes could affect methane emissions.

Analyzing the Connect between Mangroves and Coastal Erosion

Determines how climate warming-induced mangrove movement into salt marshes affects erosion and carbon cycling.

Evaluating Marsh Plant Growth

Uses marsh organ mesocosms to understand the impact of sea-level rise on marsh plant growth.

Integrating Nature-Based Features in Coastal Design

Studies how coastal features, like wetlands, environmental levees, and flood control gates, could be integrated into engineering design and urban planning.

Improving the Health of Ecosystem Services

Studies the impact of estuarine sediment nutrients on coastal water quality, critical for ecosystem services, fisheries and safe recreation.

Building Resilient Wetlands

Determines if adding sediment to marshes improves nutrient absorption and water quality in marshes and mangroves.

Evaluating Marsh Creation

Compares structural and functional characteristics (e.g., vegetation, elevation, hydrology, accretion, and denitrification) between two created marshes and an adjacent natural reference marsh.