

Louisiana Coastal Wetlands

ASCE Policy Statement 498

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Policy

The American Society of Civil Engineers (ASCE) supports efforts to reduce land loss in the Louisiana coastal wetlands through protection and restoration of the physical processes necessary to sustain these unique ecosystems. ASCE supports the ongoing effort to fund and implement the comprehensive Louisiana Coastal Area (LCA) Program, as appropriately modified by lessons learned from the 2005 hurricanes. Key components of the LCA Program should include the beneficial use of dredged material, regional sediment management, and a programmatic authorization of Federal Civil Works that allow work to continue on a long-term basis.

ASCE endorses the principle that coastal and wetland restoration and hurricane protection must be part of an integrated regional watershed and coastal zone management effort, which considers the interrelationships of natural, social and economic systems and includes Federal, State, local and private initiatives in a collaborative way.

Issue

The Louisiana coastal wetlands have been disappearing through land subsidence and erosion at an alarming rate of 25 to 35 square miles annually. Since 1930, over 1,800 square miles have been lost. It is estimated that an additional net loss of more than 500 square miles may occur by the year 2050. The rate of this land loss is some of the highest in the world and exposes communities and critical infrastructure to damage from storm surge as Hurricanes Katrina and Rita vividly demonstrated. The levee system that was constructed for flood control on the Mississippi River, while acknowledged for its beneficial aspects, is one of several reasons for the coastal land loss. Other reasons include land subsidence from oil and gas extraction activity in the coastal area, naturally occurring land subsidence, erosion, and the rise in sea level. Regional sediment management offers a strategy that may be able to balance the different causes of land loss and their potential remedies.

The economic and ecological importance of Louisiana coastal wetlands to the U.S. and the world is enormous. It is in these wetlands that 95% of all marine species in the Gulf of Mexico spend a part of their life cycle. More than 30% of the nation's fisheries catch comes from America's Wetland, and it provides one of the largest habitats in the world for migratory waterfowl. More than 25% of all the oil and gas used in the United States either originates from or passes through this working wetland. Louisiana's port system, including New Orleans, Port Fourchon, Baton Rouge and related smaller ports connected by the Intracoastal Waterway, is the largest in the world, moving more tonnage than Rotterdam or Singapore.

One of the largest deltaic systems in the world, Louisiana coastal wetlands are a highly productive area and an important base of the United States' economy and energy security. It is the home of critical U.S. Strategic Petroleum Reserve. The loss of coastal area means that this population, which includes the City of New Orleans, will experience increasing vulnerability to hurricanes, including storm surges that top levees and cause severe flooding. Hurricanes Katrina and Rita highlighted this increased vulnerability.

In the past decade, the federal investment in preserving Louisiana coastal wetlands, through CWPPPA, is about \$50 million annually. The estimated cost of the comprehensive Louisiana Coastal Area Program for America's Wetland is \$14 billion. The cost of inaction in America's Wetland New: could be more than \$100 billion in infrastructure modifications and improvements alone over the course of those 30 years.

Rationale

The economic investments described above indicate there is a significant cost savings in acting now to protect and restore the Louisiana coastal wetlands. Restoring wetlands can provide a level of flood attenuation to storm surge and protection from erosive forces, as well as valuable ecological benefits.

The key to restoring a sustainable wetlands ecosystem successfully in Louisiana is to restore, to the extent

practical, the natural processes that historically created the coastal wetlands, to integrate them with appropriate structural measures, and to manage them effectively in the future. The LCA Program has three parts. First, it will create and sustain wetlands, including marshes, coastal swamps and barrier islands by accumulating sediment and organic matter. Second, the Program will maintain habitat diversity by varying salinities and protecting key landforms. Finally, it will maintain the exchange of energy and organisms. The LCA Program maintains essential habitat features and creates and sustains the physical landscape, which is critical to the nation's economy, and to coastal hurricane protection. The various components of storm damage protection and restoration must not only be fully coordinated, but must be complimentary. These include but are not limited to: protection engineering, restoration engineering and protection and restoration ecology; they are inseparable.

The main strategies of the plan are watershed management--including regional sediment management and actions such as river diversions, improved drainage, watershed structural repair, and restoration of barrier islands. The beneficial use of dredged material is considered an important tactic in implementing these strategies. Eventually, the successful restoration of coastal Louisiana must also rely on actions throughout the Mississippi drainage basin that affect the river's sediment and nutrient loads, which ultimately builds and maintains America's Wetland.