



Highlights of [GAO-08-130](#), a report to congressional addressees

Why GAO Did This Study

Louisiana, home to 40 percent of all coastal wetlands in the lower 48 states, is projected to lose almost 17 square miles of coastline each year for the next 50 years to storms, sea level rise, and land subsidence. Coastal wetlands are an important wildlife and commercial resource, and provide a natural buffer against the storm surge that accompanies storms and hurricanes. The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) established a program in 1990 that undertakes projects to stem coastal wetland losses. Recently, the Congress passed other measures that will make billions in new funding available for coastal Louisiana over the next 20 years. GAO has prepared this report under the Comptroller General's authority as part of a continued effort to assist the Congress. GAO reviewed the CWPPRA program to identify the (1) types of projects that have been designed and constructed to restore and protect coastal wetlands, as well as their estimated costs and benefits, and (2) lessons learned from past and ongoing restoration efforts that can help guide future efforts. GAO's review included interviews with each program agency.

Although GAO is not making any recommendations, this review emphasizes the need for agencies to carefully consider the lessons learned from the CWPPRA program as they propose significantly larger efforts to restore Louisiana's coast. GAO received technical comments from two agencies which have been incorporated as appropriate.

To view the full product, including the scope and methodology, click on [GAO-08-130](#). For more information, contact Anu K. Mittal at (202) 512-3841 or mittala@gao.gov.

COASTAL WETLANDS

Lessons Learned from Past Efforts in Louisiana Could Help Guide Future Restoration and Protection

What GAO Found

Over the last 17 years under CWPPRA, federal agencies and Louisiana have designed and/or constructed 147 projects to restore and protect over 120,000 acres of coastal wetlands—about 3 percent of the Louisiana coast. Projects have included large-scale efforts that reintroduce freshwater and sediment to declining wetlands, as well as smaller projects such as shoreline barriers and vegetation plantings to protect and restore the coastal landscape. As of June 2007, of these 147 projects, 74 were completely constructed, 16 were under construction, and 57 were being designed and engineered. While the majority of projects are full-scale restoration and protection efforts, 22 were demonstration projects, initiated to test new techniques and materials. The cost of projects can vary considerably from about \$9,000 per acre to plant marsh plants to almost \$54,000 per acre to restore barrier islands. As of June 2007, the estimated cost to complete all 147 projects was \$1.78 billion. Projects also require a continuous source of funding to maintain them over their expected life spans, which in most cases are about 20 years—yet like naturally occurring wetlands, most restored wetlands are also subject to continuous erosion and subsidence over time. Because the CWPPRA program has not implemented a comprehensive evaluation and monitoring approach, it is not possible to determine the collective success of constructed projects.

Previous and ongoing efforts to restore and protect Louisiana's coastal wetlands offer important lessons to guide future restoration plans and strategies. Of particular importance is maintaining the collaborative process used by the CWPPRA program agencies, under which scientists, engineers, and others with a range of experience and expertise work together to plan and design restoration projects that are feasible and achievable. In addition, a number of other issues will need to be addressed as larger and more complex restoration efforts are undertaken in the future. Specifically,

- Increasing project costs can delay individual projects, as well as the overall program—currently 10 CWPPRA projects are on hold waiting for funds because estimated construction costs exceed funds available.
- Without an integrated monitoring system, officials cannot determine whether goals and objectives are being met—even after 4 years such a system is not fully implemented for CWPPRA.
- Identifying and addressing private landowner issues is critical in the project design phase—in some instances, these issues have led to costly project modifications or construction delays for some CWPPRA projects.
- Some projects simply fail to perform as designed due to landscape, structural, or other causes beyond the designers' control—some CWPPRA projects were terminated because such problems were not anticipated or could not be resolved.
- Storms and hurricanes can result in significant setbacks to projects—large areas of both naturally occurring and restored wetlands can be destroyed in just a few days if hit by a powerful storm.

A well-developed implementation strategy that has mechanisms to address these types of uncertainties, when they arise, is more likely to be successful.