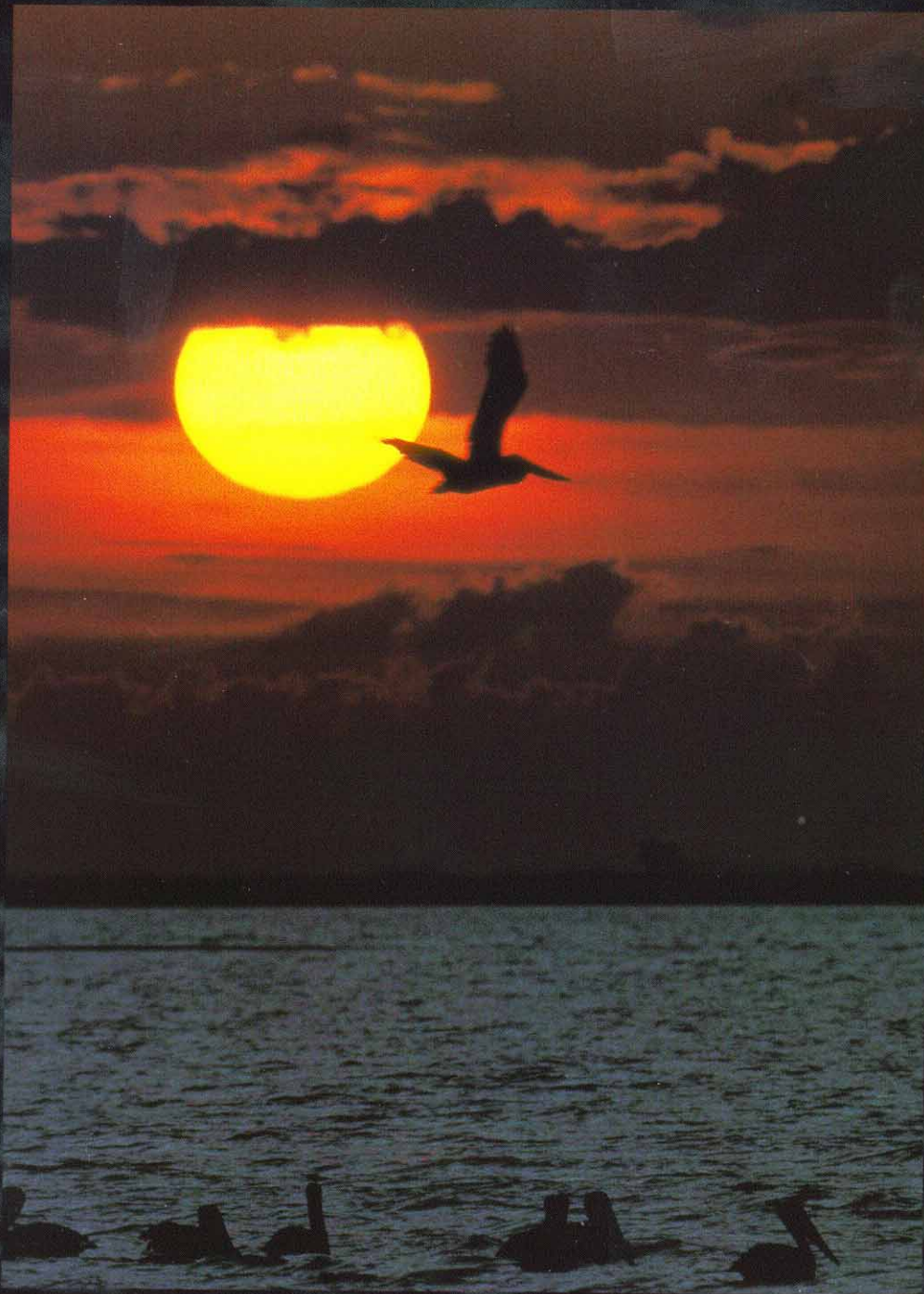


Coast 2050:

Toward a Sustainable Coastal Louisiana, an Executive Summary

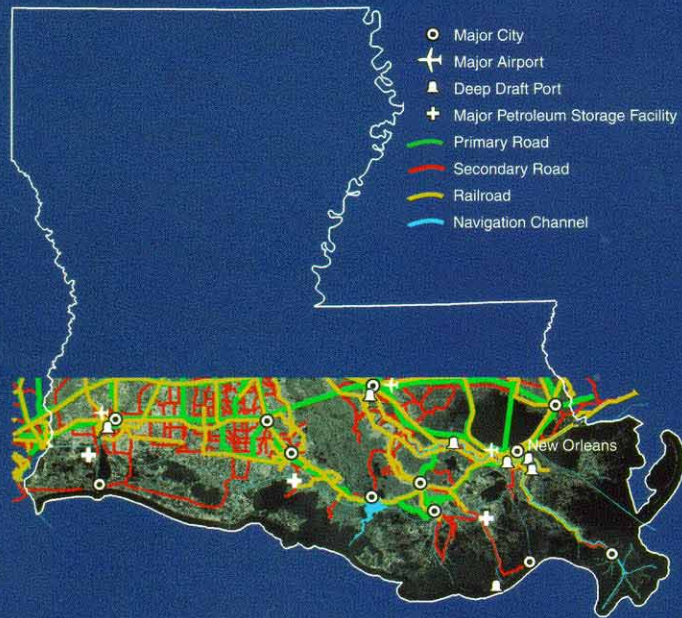


*Without bold action now,
a national treasure will be lost forever.*

Coast2050: *Toward a Sustainable Coastal Louisiana*

Coast 2050 is a strategic plan for the survival of Louisiana's coast. It is an unprecedented effort among diverse groups who have united behind a common vision:

"...to sustain a coastal ecosystem that supports and protects the environment, economy and culture of southern Louisiana, and that contributes greatly to the economy and well-being of the nation."



Louisiana's coast is home not only to vital natural resources but also to an infrastructure of nationwide importance.


Suggested citation:


Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority. 1998. *Coast 2050: Toward a Sustainable Coastal Louisiana, an Executive Summary*. Louisiana Department of Natural Resources, Baton Rouge, LA. 12 pp.



This executive summary is a companion to the full restoration plan, *Coast 2050: Toward a Sustainable Coastal Louisiana*. The web site www.lacoast.gov contains a complete copy of the Coast 2050 plan and much additional information on coastal restoration. Restoration issues also are detailed at www.savelawetlands.org.



A National Treasure

At the end of Old Man River, the mighty Mississippi, lies the largest expanse of coastal wetlands in North America. This dynamic and bountiful landscape was literally built and sustained by the sediment-laden waters that drain to the river from 31 states and three Canadian provinces.  The Louisiana coast is home to 2 million Americans. The wetlands, bays, and islands of the coast constitute an enormously productive ecosystem and resource base that support the livelihood and well-being of the Nation. The statistics are awesome: the ecosystem contributes nearly 30% by weight of the total commercial fisheries harvest in the lower 48 states and provides overwintering habitat for 70% of the migratory waterfowl using the Central and Mississippi Flyways; 18% of U.S. oil production and 24% of U.S. gas production come from coastal Louisiana and the

adjacent Gulf of Mexico, with an annual value of \$17 billion; Louisiana's ports rank first in the Nation in total shipping tonnage. 

The unique human culture and beautiful setting of southern Louisiana is world-renowned. Words like *Zydeco*, *Cajun*, *Mardi Gras*, *King Cake*, the *Blues*, and *Bayou* come to life in Louisiana. Just imagine if there were no such things as *Jazz*, *Gumbo*, or "*A Streetcar Named Desire*."  Louisiana's cultures, communities, and history are integral to our national identity and are tied to the future of a coast that is at risk. 



Will Be Lost . . .

Since 1930, Louisiana has lost over 1,500 square miles of marsh. The state is still losing 25 to 30 square miles each year, nearly a football field of prime wetland every 30 minutes. 🐦

There is no one reason for this land loss. Some of Louisiana's coastal wetlands have always been subsiding, but in the past, the river built and sustained the wetlands and built new ones which offset the natural losses. Since Europeans came to Louisiana, we have been building

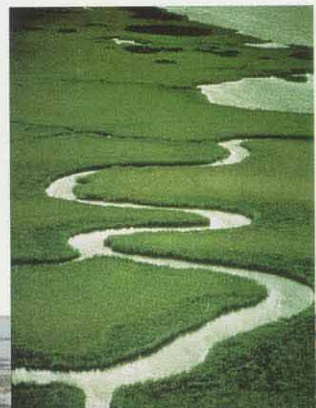
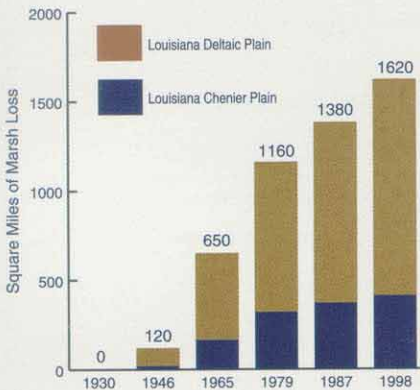
levees to protect against floods. Levees keep homes,

businesses, and farms safe, but they prevent sediments that nourish the marshes from reaching them. Without sediment, water, and nutrients, subsidence can overtake marsh growth and lead to marsh loss. 🐦

Canals were dug through the marshes to promote navigation and to recover the petroleum resources that help fuel the Nation.

North-south canals bring saltier water and stronger

tides into fresh marshes, while east-west canals and levees can hold excess water on the marshes and swamps. These hydrologic changes can lead to conditions that kill wetland vegetation. Hurricanes can rip up marsh and erode islands and the shorelines of bays and lakes. 🐦



Right photo:
a natural bayou and healthy marsh.
Bottom photo:
marsh severely impacted by numerous canals.



... Forever

Today, Louisiana has 3,800 square miles of marsh and over 800 square miles of swamp. Even at the current pace of restoration efforts, by 2050 we will lose more than 600 square miles of marsh and almost 400 square miles of swamp. Consequently, nearly 1,000 square miles of



Rhode Island

Louisiana's wetlands will become open water. **The Nation will lose an area of coastal wetlands that is nearly the size of Rhode Island.** 🦅

As marshes surrounding coastal communities and urban centers such as New Orleans turn to open water, the risk of catastrophic damage from hurricanes will rise dramatically. 🦅 As wetlands and barrier islands disappear, the wells, pipelines, ports, and roads that make the oil and natural gas industry possible will be exposed to open water conditions. These facilities will need to be replaced at a high cost, and the potential for damaging oil spills will increase. 🦅 If we do nothing, we face significant reductions in the \$20 billion per year shipping export industry that depends on Louisiana's ports and the fish catch that depends on Louisiana's coastal waters. 🦅

*"If a foreign country took 30 square miles per year of American soil, we would be doing **WHATEVER** it takes to stop them."*

Comment heard at
Coast 2050 public meetings -
Summer, 1997

Hurricane Andrew
1992.



The Consensus

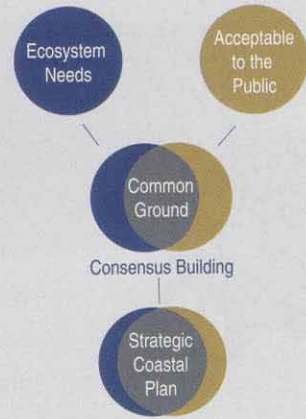
This devastating problem has already received much attention and some funding for solutions — up to \$50 million each year during the 1990s. We have

learned two things: first, we already know how to fix most of the problems, and second, coastal recovery will require much more effort than has been undertaken so far. 🦋 A road map to increased effort is presented in the full restoration plan, “Coast 2050: Toward a Sustainable Coastal Louisiana” (see www.lacoast.gov). This strategic plan for the survival of Louisiana’s coast was prepared at the urging of citizens from across the state and Nation. Coast 2050 involved federal, state, and local entities,

landowners, environmentalists, wetland scientists, and others. As

shown by the graphic to the right, the planning process was carefully crafted to maximize common ground. Through 65 public meetings and workshops, technically sound solutions were found to meet ecosystem needs and secure public acceptance and support. 🦋 In the past, Louisiana’s restoration efforts have suffered from fragmentation and lack of consensus. Coast 2050 represents

a dramatic change: its integrated, multiple use approach to ecosystem management has received the support of the federal and state agencies responsible for coastal restoration (see inside back cover). Additionally 20 of Louisiana’s coastal parishes passed resolutions of support. 🦋



“We know what it will take to fix the problem: we just need to get the job done.”

Comment heard at Coast 2050 public meetings - Summer, 1997

Ascension	Assumption	Calcasieu	Cameron	Jefferson
Vermilion				Iberia
Terrebonne				Lafourche
Tangipahoa				Livingston
St. Tammany				Orleans
St. Mary				Plaquemines
St. Martin				St. Bernard
St. John The Baptist				St. James

Solution

The key to successfully restoring a sustainable ecosystem is to manage and use the natural forces that created the Louisiana coast: the river, the climate, and the rise and fall of the Gulf of Mexico. The goals of Coast 2050 are to create and sustain marsh by accumulating sediment and organic matter; to maintain habitat diversity by varying salinities and protecting key land forms; and to maintain the exchange of energy and organisms. 🐦 The main strategies of the plan are watershed management, such as river diversions and improved drainage and watershed structural repair, such as restoration of barrier islands. 🐦 In the Pontchartrain Basin near New Orleans, we must close the Mississippi River Gulf Outlet navigation channel as soon as possible. Also, river diversions into swamps are needed to restore natural hydrology. 🐦 In the Barataria-Terrebonne area of the central coast, the lack of sediment in conjunction with subsidence has produced a coastal system that is collapsing. The Mississippi



Restoring marshes with dredged sediments using a jet spray.



Delta processes can be used to rebuild Louisiana's coast.

River provides the opportunity to rebuild marsh near the river. Funneling vast amounts of sediments into the deep waters of the gulf must be stopped. In the severely eroding marshes adjacent to Bayou Lafourche, the plan includes the bold concept of a 60-mile long conveyance channel from the Mississippi River to build two new deltas, one on either side of Bayou Lafourche. 🐦 The Atchafalaya

River must continue to carry sediments and nutrients to nearby healthy marshes. In addition, river water must be moved farther east and south to support marshes that are no longer self-maintaining. 🐦 In the Calcasieu-Sabine area of western Louisiana, salt water brought into marshes from navigation channels and canals caused extensive marsh loss. Seasonally operated locks at the mouths of the navigation channels would help these marshes recover from the salinity stress. 🐦

“For any delta to succeed, the river must conquer the gulf.”

Comment heard at Coast 2050 public meetings - Summer, 1997

Is Bold

The Coast 2050 ecosystem strategies are BOLD because they propose actions at a scale never before attempted.

Protect Shoreline

Keep shoreline in place in critical areas.



Maintain Shoreline Integrity

Let shore roll back, but prevent interior marsh erosion.

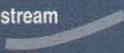


Maintain Sabine River Inflow



Maintain Atchafalaya Mudstream

Continue shoreline accretion along Chenier Plain.



Improve Hydrology/Drainage

Lower water levels in swamps. Allow more natural flow of water. Provide flood protection if necessary.



Reduce Sedimentation in Cote Blanche Bays and Vermilion Bay and Maintain as Brackish



Lower Water Levels

Modify flow patterns to tidal marshes to the south.



Move Fresh Water South into Tidal Marshes

Move Atchafalaya waters into tidal marshes. In Chenier Plain, use water from lakes to freshen southern brackish marshes.



Beneficial Use of Dredged Material or Dedicated Dredging

Create marsh in various sites along the coast.



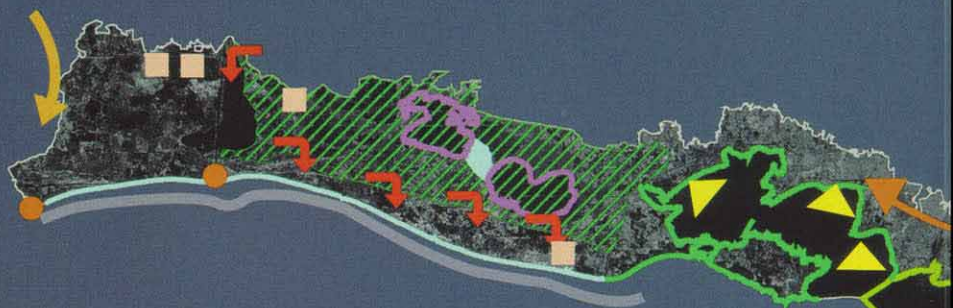
Maximize Land Building in Atchafalaya Delta

Separate navigation from delta. Train lobe toward Four League Bay.



Maintain Land Bridges

Preserve the three land bridges to prevent marine forces from moving inland and large lakes from joining.



Coast 2050 Ecosystem Strategies

AND Realistic

The strategies are REALISTIC because they rely on natural processes and reflect the economic and social needs of the region.

Small Diversions from Mississippi River (<5,000 cfs)

Allow river water and nutrients to nourish swamps and marshes. Flood protection where needed. Provide outfall management.

Optimize Atchafalaya Flow to West and East

Use Atchafalaya sediments and nutrients to preserve marshes.

Conveyance Channel from Mississippi River to Build Deltas

Build marsh and nourish adjacent wetlands in area of highest land loss.

Solve the Mississippi River Gulf Outlet Problem

Close MRGO when deep-draft container facilities are available on river. In interim, stabilize north bank, purchase oyster leases, create marsh in southern lobes of Lake Borgne.

Delta-building Diversions from Mississippi River (15,000-100,000 cfs)

Build marsh and nourish adjacent marsh. Address oyster issues.

Multi-purpose Control of Navigation Channels

Prevent saline waters from continuing to damage marshes to north. Retain fresh water.

Restore/maintain Barrier Islands, Headlands, Shorelands

Use most cost-effective means to protect these first lines of defense from storms.

Prevent Loss of Sediments into the Deep Gulf

Separate navigation from riverine processes. Build sediment trap and pump out to create marsh.



Challenging, but Attainable

Construction of the strategies recommended by Coast 2050 would cost about \$14 billion. This cost represents more than a ten-fold increase in

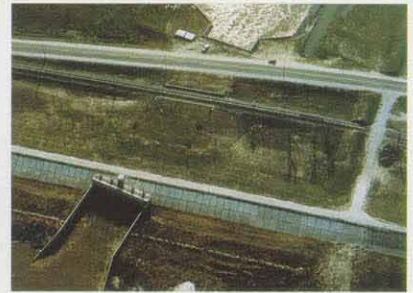


“If this coast is to be saved, we need a total commitment at the national, state, and local levels.”

Comment heard at
Coast 2050 public meetings -
Summer, 1997

the current investment of the Breaux Act Coastal Restoration Program. However, the cost of not implementing such strategies is even more – an estimated loss in public use value of over \$37 billion during the next 50 years. 🐦

Ongoing coastal restoration has identified many challenges: remote construction locations, the presence of existing infrastructure (communities, roads, levees, navigation channels, etc.), land rights acquisition, land ownership, regulatory requirements, navigation conflicts, compensation for lost income, and mitigation of adverse impacts including induced flooding. 🐦 The solution is attainable. Progress is being made on some difficult implementation issues. The State of Louisiana has



Caernarvon Freshwater Diversion structure diverting river water under roads, railroads, and levees to the marshes.

amended its Constitution to allow resolution of land ownership issues. The state has developed an “Oyster Lease Relocation Program” to address potential adverse impacts of restoration efforts to oyster leases. Monitoring of completed projects proves that the techniques exist to build and maintain wetlands. Results from the Caernarvon Freshwater Diversion show that river water and sediments can restore marsh over a large area. 🐦

Land building at
Caernarvon
Freshwater
Diversion
(red shows land; blue
shows water.)
Scale is 1:20,000



To Survive

Why should the Nation and the State of Louisiana invest billions of dollars to restore coastal Louisiana? Because it is a wintering area



for migratory waterfowl?

Because the barrier islands provide nesting



areas for seabirds and wading birds? Because the coastal wetlands are beautiful and mysterious? Because the culture is rich, the gumbo good, and the music exhilarating? These alone may be ample reasons, but there are others that are even more compelling. 🦅

The entire Nation depends on these wetlands for much of its fisheries catch, oil and gas production, navigation, and so much more. 🦅 Coastal communities large and small, from New Orleans to Golden Meadow, from Houma to Grand Chenier, depend on Louisiana's coastal wetlands for hurricane protection and ultimate survival. 🦅

It's about Survival... of one of the world's greatest natural, cultural, and economic resources.



It's about Sustainability... so the Nation's children can continue to reap the benefits of this thriving resource.



And Prosper

What will Louisiana and the Nation get for their investment? We will get a sustainable and highly productive landscape and prevent the loss of nearly 1,000 square miles of coastal America. 🦋

“Protecting the coast isn’t an environmental nicety. It is an economic necessity.”

Comment heard at Coast 2050 public meetings - Summer, 1997



Maintenance of a viable coastal wetland ecosystem will preserve tens of thousands of jobs in industries that are supported or protected by this vital landscape. The coastal oil and gas industry and supporting vendors alone directly provide nearly 90,000 jobs. 🦋 The estimated \$14 billion cost of Coast 2050 is small compared to the cost of abandoning the delta, relocating its citizens, and restructuring its economy.



Economic prosperity and cultural well-being are the simple and compelling reasons why Louisiana citizens have joined in support of the new plan to protect and restore the coast. 🦋 History teaches that nations and civilizations usually decline when they lose their resource base. The Louisiana coastal ecosystem

has been damaged to the point that much of the resource base is gone. Yet the Coast 2050 plan demonstrates that a self-sustaining ecosystem can be restored and maintained along the Louisiana coast to protect the facilities needed to support a growing economy. The investment is not only for the future of Louisiana but also the future of the Nation. 🦋



A New Era of Stewardship

If America is to win this battle for survival of one of its greatest natural resources it will take more than money and bold vision. Better stewardship and a holistic approach to managing the coast are needed to sustain this national treasure. 🦋 The need for stewardship has been recognized for more than a decade and is



Workers constructing a dune-building fence at Racoon Island, Louisiana.

evidenced by a vote of Louisiana's citizens for a constitutional amendment and by Congress with the passage of the Breaux Act in 1990. These efforts paved the way for a New Era of Stewardship, an era that begins with Coast 2050. 🦋 Stewardship requires us to care for and nurture what we have and what we are

given. For the coast of Louisiana to survive, we must change the way we do business. As a high priority, all decisions that affect the coastal environment need to address the sustainability and integrity of the coastal ecosystem. Restoration and management funds must be allocated in accordance with the Coast 2050 strategies. 🦋 The breadth of support for Coast 2050 demonstrates that the citizens of Louisiana are ready and eager for this new era. Coast 2050 gives Louisiana's coast a fighting chance to



Volunteers recycling Christmas trees to enhance marsh.

survive. 🦋



"We will spend billions of dollars on the Louisiana coast in the next 50 years; the question is whether it will be to relocate people, or to rebuild the wetlands which protect these people."

Comment heard at Coast 2050 public meetings - Summer, 1997



Must Begin Now

The Coast 2050 strategies will work best if the existing ecosystem is here to build upon. Today the coastal ecosystem, while damaged, is sufficiently intact



"If we sit on our hands, it means we have decided to fail."

Comment heard at
Coast 2050 public meetings -
Summer, 1997

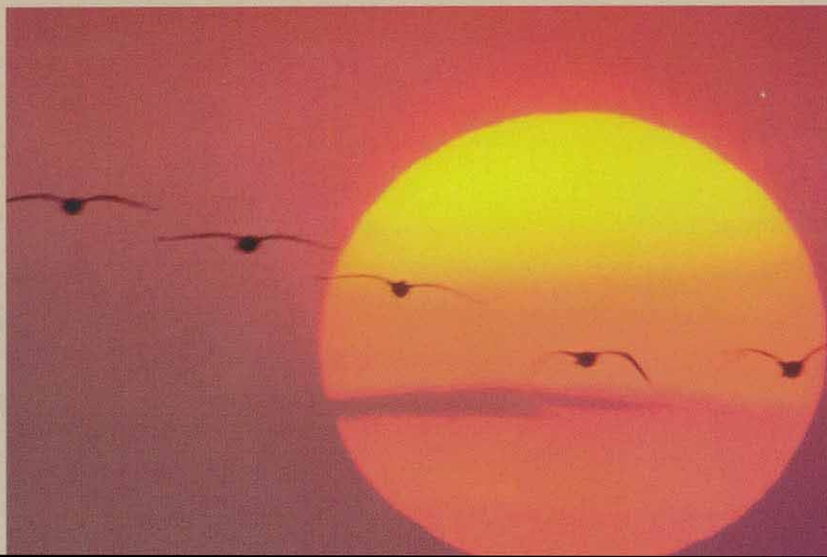
for restoration to succeed. Within a few decades, the ecosystem will have collapsed to the point that natural landforms will be gone, and our ability to use nature to achieve a high level of sustainable productivity will also be gone. 🐦

We have all heard the adage, "Pay now, or pay later." Left unchecked, future land loss would risk over \$100 billion in infrastructure and resources. We have two options: invest \$14 billion in Coast 2050, or suffer immense future costs. The right choice is clear: Coast 2050. 🐦

Coast 2050 is a strategic vision to wisely direct the use, management, and restoration of our coast for the broadest sustainable benefit. What Coast 2050 does guarantee is a fighting chance.

Without it, coastal Louisiana as we know it will cease to exist. 🐦 We have only a brief window of opportunity to get

the most value from natural landforms and processes and achieve ecosystem sustainability. The need for action is clear. The time for action is NOW. 🐦





Coast 2050 is a joint effort of the citizens of Louisiana and the following agencies:

Louisiana Coastal Wetlands Conservation and Restoration Task Force:

U.S. Army Corps of Engineers
U.S. Department of Commerce,
National Marine Fisheries Service
U.S. Department of the Interior,
U.S. Fish and Wildlife Service
U.S. Department of Agriculture,
Natural Resources Conservation Service
U.S. Environmental Protection Agency
Office of the Governor of Louisiana

Louisiana State Wetlands Conservation and Restoration Authority:

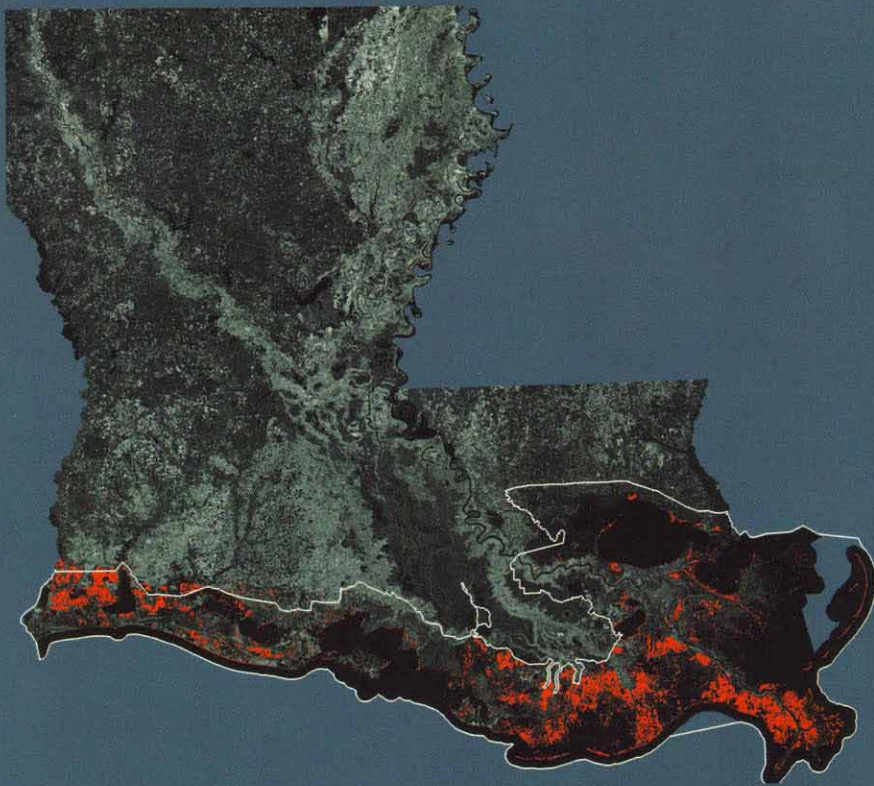
Office of the Governor of Louisiana
Department of Natural Resources
Department of Transportation and Development
Division of Administration
Department of Environmental Quality
Department of Wildlife and Fisheries
State Soil and Water Conservation Committee

"... it is time for us to recognize that if we are to be truly successful in our efforts to restore our coast to a state of sustainable, productive health, that we must dedicate ourselves to the cause of protecting and restoring our coastal wetlands and barrier islands in order that we can secure for ourselves and those who follow us the blessings and values that we and our forebears have enjoyed from these precious natural resources."

Proclamation by
Governor Murphy J. "Mike" Foster,
May 1, 1997

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Back cover: Louisiana coastal wetland loss in relation to major coastal communities. Red areas show land lost between 1956 and 1990 (U.S. Geological Survey).



Louisiana's Coastal Land Loss Between 1956 and 1990

(shown in red)

Ten thousand copies of this public document were published in this first printing at a total cost of \$38,290. This document was published by the Louisiana Department of Natural Resources, P.O. Box 94396, Baton Rouge, La. 70804-9396 in order to inform the public about the comprehensive coastal restoration plan under the authority of Public Law 101-646. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31. Printing of this material was purchased in accordance with the provisions of Title 43 of the Louisiana Revised Statutes.