

S. HRG. 106-14

OFFSHORE OIL AND GAS ACTIVITY IMPACT

HEARING BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

ON THE

IMPACTS OF COASTAL AREAS AND COMMUNITIES
CAUSED BY OFFSHORE OIL AND GAS EXPLORATION
AND DEVELOPMENT

JANUARY 27, 1999

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STATEMENT OF JACK C. CALDWELL, SECRETARY, LOUISIANA DEPARTMENT OF NATURAL RESOURCES

Mr. CALDWELL. Thank you, Senator Landrieu.

Mr. Chairman and honorable members of the committee, as Senator Landrieu has just emphasized to you, Louisiana's coastal ecosystem is a unique national treasure and it is in a virtual state of collapse. In the last 50 years, we have lost 1,000 square miles of coastline. And in the next 50 years, we are going to lose another 1,000 square miles of coastline if we do not do anything about it. This is an area the size of the State of Delaware that is disappearing into the Gulf of Mexico.

I have here my digitized satellite map, which shows the losses, in red in the past, and the yellow is in the future, in just one part of the Louisiana coast. And you can see the catastrophic devastation that this coast is undergoing.

The economic, social and environmental costs are staggering. The current estimate

is that in infrastructure alone, we are going to lose \$150 billion in value over the next 50 years. Whole towns and communities, oil fields, coastal industries, public facilities are going into the Gulf of Mexico if we do not do something about it.

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Now, the causes of this loss are very complex and numerous. But, without a doubt, as always, the hand of man is a significant influence. And in this, offshore oil and gas operations have had a significant impact.

Let us take one example, the Houma Navigation Canal. This canal was dug in 1964, and it runs from the town of Houma, Louisiana, population about 100,000, 25 miles down to the Gulf. And it is one of Louisiana's major offshore oil and gas operations bases. In the 35 years that this canal has been there, as you can see from my satellite map, we have lost 10 square miles along that one canal in a 25-mile area.

This is due to boat wash in these fragile marshes, saltwater intrusion that comes up the canal and destroys the freshwater marsh, and the tidal energy that washes the soil in and out. Ten square miles in 35 years.

In addition, the Louisiana coast is criss-crossed by 14,000 miles of oil and gas pipelines, many of them from offshore coming onshore. The Mineral Management Service is presently doing a study to determine the impacts just of those pipelines. And we will have that and we will file that in the record when the MMS completes it.

In addition, we have Port Fourchon, which is presently being studied by the MMS. It is the major offshore oil base, located down on the coast. Port Fourchon is serviced by one two-lane road, running up Bayou LaFourche, that carries 1,000 trucks a day. And that poor road is crumbling into the Gulf as we speak. If we do not get some help, Port Fourchon will have to shut down.

Now, Louisiana supports strongly offshore oil and gas operations. We have always believed in it, as Senator Landrieu has told you. But Louisiana should not bear a disproportionate burden of the adverse environmental impacts of these operations. We have furnished 90 percent of the revenues that come from offshore Louisiana. And we have been returned about 1 percent of the royalties under the 8(g) funds.

But there is hope on the Louisiana coast. Under the Breaux Act, sponsored by Senator Breaux in 1990, Louisiana has been receiving about \$40 million in Federal funds. And this, together with State match, has gone into coastal restoration projects that my department is charged with implementing. And I

want you to know that I am very pleased and very proud to report that we are currently meeting with modest success in coastal restoration.

But this is not enough. At the present rate, it is estimated we will only save about 22 percent of the losses that will otherwise occur. We believe that S. 25 can provide the resources to restore the coast.

A joint coalition of Federal and State agencies have just finished a comprehensive strategic plan for the Louisiana coast, known as Coast 2050. And we have furnished the committee with copies of this plan.

The Coast 2050 estimates that if we take the appropriate action, we can save 90 percent of the loss that will otherwise occur, and at a modest cost of \$14 billion over the 50-year period. And S. 25 we believe can provide those funds.

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So, we submit that the Louisiana coast is a perfect model for reaching the lofty and worthy goals of S. 25, which is to reinvest a portion of these nonrenewable oil and gas revenues into renewable and sustaining resources. We believe that title I, as well as title II and title III embody the great American tradition of conserving and preserving our dwindling natural resources.

Thank you, Mr. Chairman.[The prepared statement of Mr. Caldwell follows:]

PREPARED STATEMENT OF JACK C. CALDWELL, SECRETARY, LOUISIANA DEPARTMENT OF NATURAL RESOURCES

Louisiana's story is compelling. It's about an irreplaceable part of America's coast that is disappearing at a catastrophic rate. If the loss is not stopped and reversed, the very industry we discuss today will be at risk, along with the economy, infrastructure, wildlife habitat, fisheries, communities and unique culture of Louisiana.

Louisiana's coastal wetlands represent 40% of all the salt marshes in the contiguous United States. During the past 50 years more than one thousand square miles have disappeared. During this decade, our coastal wetlands are being lost at the rate of 25 to 35 square miles a year, or the equivalent of a football field every 15 minutes. Even with current restoration efforts, we expect to lose almost one thousand more square miles by the year 2050. This dramatic loss represents 80% of all coastal wetland loss in the entire continental U.S.

The effects of natural processes like subsidence and storms combined with human actions, including impacts from offshore oil and gas exploration and development, have led to an ecosystem on the verge of collapse.

America is losing much more than acreage. Louisiana's coastal wetlands contribute 28% to the total volume of U.S. fisheries, provide winter habitat for one-half to two-thirds of the Mississippi Flyway waterfowl population and for many threatened and endangered species, the nursery ground for fish and shellfish for much of the nation's seafood consumption, and 40% of the

nation's fur harvest. They provide for 400 million tons each year of waterborne commerce, and support and protect the multi-billion dollar a year oil and gas industry. Our coastal wetlands are home to more than two million people and serve as their buffer from hurricanes and storms.

LOUISIANA OFFSHORE OIL AND GAS ACTIVITY

Eighteen percent of U.S. oil production originates in, is transported through, or is processed in Louisiana coastal wetlands with a value of \$6.3 billion a year. At most 24% of U.S. natural gas production originates in or is processed in Louisiana's coastal wetlands with a value of \$10.3 billion a year.

Louisiana's OCS (outer continental shelf) territory is the most extensively developed and matured OCS territory in the United States. It has produced 88.8% of the crude oil and condensate and 83.2% of the natural gas extracted from all federal OCS territories from the beginning of oil and gas exploration and development in the U.S. through the end of 1996.

As of December 1998, Louisiana offshore leases totaled 5,363, with more than 27 million acres under lease, 130 active drilling rigs, 4,489 producing oil wells and 3,813 producing gas wells.

Our latest annual production data for 1997 shows that 353,846,995 barrels of oil and 3,881,352,353 MCF (thousand cubic feet) of natural gas was produced. Between January and July 1998, oil production was at 227,282,332 barrels, with gas at 2,281,832,468 MCF.

As of October 1998, there were 3,439 platforms in the Gulf off Louisiana's coast.

In 1997, oil and gas production was valued at a combined total of \$18.6 billion, with federal royalties totaling \$2.9 billion.

Louisiana projection estimates for offshore oil and gas production and federal royalties:

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1999	2000	2001	2002	2003
413.0	1,177.5	493.9	1,392.0	524.8
1,471.4	541.2	1,523.9	556.7	1,537.2
3,700.8	3,527.3	3,308.5	3,318.3	3,373.4
1,360.9	1,292.2	1,175.5	1,082.2	993.5

OIL: Production

(in millions of barrels) Oil Royalties

2004

572.2

(in millions of \$\$) 1,450.4

GAS: Production

(in million MCF) Gas Royalties

(in millions of \$\$)

3,428.4 911.6

Recently, the oil and gas industry has rebounded from a downturn in the 1980s. The main reasons are the discovery of oil and gas in deepwater fields of the central Gulf of Mexico, deepwater royalty tax relief, and new and improved technology used to extract oil from the deepwater Gulf.

Industry leaders are expressing a new optimism and the frantic pace of drilling is breaking old records. The deepwater Gulf of Mexico has emerged as the country's most significant oil and gas province and some estimates say within the next four to five years, as much as 30% of the country's total domestic output will originate from the Gulf of Mexico.

Market analysts predict this intense level of exploration could last 10 years. The success of Louisiana's oil and gas industry contributes billions to the State and national economies every year. Offshore companies paid about \$2.4 billion to vendors and contractors in 165 Louisiana communities in 1992 alone. Nearly 4,000 vendors serve offshore operations and employ 55,000 people and more than 30,000 are employed offshore.

Port Fourchon is the geographic and economic center of offshore drilling efforts along the Louisiana Gulf Coast. More than \$700 million in public and private investments have been made in the complex and the port will provide support to 75% of the deep water drilling prospects in the Gulf. It's tonnage has increased 275% in the last five years and it is anticipated to double again within two years. It handled more than 30 million tons of cargo in 1996.

More than 6,000 people currently depend on the port as an avenue to and from offshore facilities and more than 13,000 people depend on it for jobs, supplies, facilities and as a hurricane evacuation hub to safer locations north of the coast. Most of the major and independent oil and gas companies operating in the Gulf have a presence at Port Fourchon. On any given day, more than 1,000 trucks are unloaded and loaded there and pipe yards, shipyards, platform construction facilities, service bases and barge terminals within the immediate service area of the port are working at or near capacity.

Less than 20 miles southeast of Port Fourchon is the Louisiana Offshore Oil Port (LOOP), built by a group of major oil and pipeline companies. It serves as the central unloading and distribution port for all incoming supertankers to the Gulf region. The supertankers offload crude oil into LOOP's offshore pipeline continuously. The oil is then piped north to Lafourche Parish where it is stored and piped to markets all over the country.

THE OIL AND GAS INDUSTRY — IMPACTS COME FULL CIRCLE

The United States depends on the oil and gas shipped through and produced in Louisiana's coastal zone. Wetlands and barrier islands protect the billions of dollars worth of infrastructure that supports the industry from wave and storm damage and are an integral part of the nation's energy system. The industrial uses associated with offshore exploration and production, pipelines, and canal developments have directly and indirectly contributed to marsh destruction, putting the industry, itself, at risk.

Navigation channels and canals dredged for oil and gas extraction have dramatically altered the hydrology of the coastal area. North-south channels and canals have brought salt water into fresh marshes, killing vegetation and habitat. East-west canals have impeded sheetflow, ponding the

water on the marsh and leading to stress and eventual loss. Canals have also increased tidal processes that impact the marsh by increasing erosion. Channel deepening has caused saltwater intrusion, endangering the potable water supply of much of the coastal region.

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As of 1997, there were more than 20,000 miles of pipelines in federal offshore lands and thousands more inland. They all make landfall on Louisiana's barrier islands and wetland shorelines. The barriers are the first line of defense against combined wind and water forces of a hurricane and they serve as anchor points for pipelines originating offshore. These islands protect the wetland habitats from an offshore oil spill and are critical in protecting the state's wetland-oriented oil and gas facilities and thousands of jobs directly and indirectly tied to the industry.

If the barrier islands erode entirely, as expected in the next 50 years, platforms, pipelines and wells will be damaged in increasing numbers. More than 58% of the region's wells are located in coastal parishes. Most of them are more than 50 years old and were not designed to withstand the conditions of open water they could face in the next 50 years. More than 30,000 wells are at risk within the 20-parish coastal area. Wells that were on land only a few years ago are now surrounded by water, a situation hazardous to boat traffic and an environmental liability to habitat and fisheries.

Workers, equipment, supplies, and transportation facilities that accompany the rapid growth of the offshore oil and gas industry depend on land based facilities. Roads, housing, water, acreage for new business locations and expansions of existing businesses, waste disposal facilities and other infrastructure facilities will be needed in localized areas along the Louisiana coast. Existing land based infrastructure is already heavily overburdened and needs expansion and improvement, requiring extensive financial infusions from State and local governments. For example, Louisiana's only highway leading to Port Fourchon is on the verge of crumbling under the strain of the thousands of trucks that travel it each week. It will cost about \$266 million to make the highway safe and fully usable.

LOOP also depends on onshore infrastructure protected by wetlands. Without this protection, America will lose an essential trade and navigation center that would affect commerce throughout the world.

OTHER IMPACTS FROM COASTAL WETLAND LOSS

Louisiana ranks first in the nation in total shipping tonnage, handling more than 450 million tons of cargo a year through its deep-draft ports of New Orleans, Baton Rouge, Lake Charles, South Louisiana, Plaquemines Parish and St. Bernard. The ports between Baton Rouge and New Orleans are the largest by tonnage carried in the world and serve the entire eastern part of the country.

The state's wetlands and barrier islands protect this internationally important port system, as well as navigation channels, waterways and anchorages from winds and waves. At present land loss rates, more than 155 miles of waterways will be exposed to open water in 50 years, leaving this key port system at risk and businesses throughout the nation losing preferred links to European and Pacific Rim markets.

Because of our coastal marshes and barrier islands, Louisiana's commercial and recreational

fisheries are among the most abundant in America, providing 25% to 35% of the nation's total catch. Louisiana is first in the annual harvest of oysters and crabs and menhaden, and is a top producer of shrimp. Some of the best recreational salt water fishing in North America exists off Louisiana's coast. The reason for this abundance is that our coastal marshes provide the nursery for young fish and shellfish.

The long-term impacts of wetland loss relates to many species of fish and shellfish that depend on these habitats, translating into economic losses that affect the entire region and the nation. Nearly all Louisiana commercial species use the marsh at some stage of their life cycle, and fisheries loss will be proportional to marsh loss. By the year 2050, the annual loss of commercial fisheries will be nearly \$550 million. For recreational fisheries, the total loss will be close to \$200 million a year.

Louisiana's coastal wetlands provide a diverse habitat for many wildlife communities. The wetlands provide life cycle needs for resident species and wintering habitat for migratory waterfowl and other birds. Land loss and habitat change by the year 2050 will affect the nation's wildlife population. Sea birds, wading birds and shore birds are expected to decrease, along with raptors and woodland birds. Alligators and furbearers will decrease in certain areas of the coast, as will the abundance of ducks and geese.

Louisiana's cities and coastal communities are at great risk as the wetlands and barrier islands disappear, leaving people with no buffer from storm surges and the force of high winds. Miles of hurricane protection levees will be exposed to open water conditions, forcing widespread relocation and abandonment of coastal communities.

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Wetlands create friction and reduce high winds when hurricanes hit. They also absorb hurricane storm surges. Scientists estimate that every 2.7 miles of wetlands absorbs one foot of storm surge. The 3.5 million acres of wetlands that line Louisiana's coast today have storm protection values of \$728 million to \$3.1 billion.

The recent strike of Hurricane Georges, just a few miles east, brought home just how devastating a direct hit to New Orleans would be. The potential loss of life and property is incomprehensible and the threat of disaster was not lost on the city's residents. Bumper-to-bumper traffic snaked out of the city north and west for hours as more than one million people evacuated the crescent city. Hotel space was scarce as far north as Memphis.

With the loss of barrier islands and wetlands over the next 50 years, New Orleans will be a Gulf coast city and will lose its wetland buffer that now protects it from many effects of flooding. Hurricanes will pose the greatest threat, since New Orleans sits on a sloping continental shelf, which makes it extremely vulnerable to storm surges.

More than two million people in inland south Louisiana will be subject to more severe and frequent flooding than ever before. Coastal communities will become shorefront towns and the economic and cultural costs of relocation is estimated in the billions of dollars.

We expect an increase in homeowner and commercial insurance rates by 20% in some cases. Insurance coverage for wind damage may be discontinued, deductibles will increase by 20% by next year, and large insurance companies will stop issuing new policies in the coastal zone.

South Louisiana's unique culture is a national treasure and the very fabric of its distinct way of life is being eroded with the coast at great intangible cost to the nation and the world.

COAST 2050: A VISION OF THE FUTURE

Louisiana began work in earnest to restore its coast in 1989 with the passage of Act 6 and in 1990 with passage of the Breaux Act or CWPPRA (The Coastal Wetlands Planning Protection and Restoration Act). Since then, more than 80 restoration projects are presently underway or already completed. We have gained the technical know-how and, by working with our federal partners, we are cementing long-term partnerships as we build projects together.

During the past 18 months, the Coast 2050 Plan was developed in partnership with the public. It is a technically sound strategic plan to sustain Louisiana's coastal resources and to provide an integrated multiple-use approach to ecosystem management.

Coast 2050 has received unanimous approval from all 20 Louisiana coastal parishes, the federal Breaux Act Task Force, the State Wetlands Authority, and various environmental organizations, including the Coalition to Save Coastal Louisiana. This approval is unprecedented.

The main strategies of the plan are watershed structural repair, such as restoration of ridges and barrier islands, and watershed management, such as river diversions and improved drainage. In making recommendations, the process did not view the number of coastal wetlands acres saved as the only priority, but considered other resources as well, such as roads, levees, fish and wildlife resources, and public safety and navigation, in making recommendations.

The Breaux Act (CWPPRA) Task Force, the State Wetlands Authority and the Department of Natural Resources Coastal Zone Management Authority will establish it as a unifying strategic plan of action. It will become the CWPPRA restoration plan and Louisiana's overall strategic coastal plan. Proposed projects will be measured against the strategies in the Coast 2050 Plan before being approved.

In one way or another, everyone in the nation will feel the enormous loss of land along Louisiana's coast and current restoration efforts will only prevent 22% of the land loss projected to occur within the next 50 years. However, we know that a comprehensive restoration program using the Coast 2050 Plan as a guide, could restore and maintain more than 90% of the coastal land existing today.

The price tag is \$14 billion to construct more than 500 projects that would be needed, but the price of infrastructure alone that would be lost is more than \$150 billion.

For more than 50 years, Louisiana has shouldered the environmental and infrastructure impacts of supporting the OCS oil and gas industry. In 1997, royalties paid to the federal government from OCS revenues off the coast of Louisiana totaled \$2.9 billion. Louisiana realized only a fraction in direct financial benefit, while losing another 35 square miles of its coast. If Louisiana receives its fair share of OCS

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revenues, we will be well on the way to restoring our coastline, justifying the \$14 billion investment.

Senate Bill 25 makes good sense. Investing income from a non-renewable capital asset into renewable resources that will provide economic stability and health to an entire region and the nation for decades to come, is good business.

Louisiana and America cannot afford to wait.

NOTE: Some of the information in this testimony was taken from: the preliminary final draft of *Coast 2050: Toward A Sustainable Coastal Louisiana*, the final draft of *No Time to Lose*, a report by the Coalition to Restore Coastal Louisiana, and reports written by Dr. Donald W. Davis, administrator, Louisiana Applied Oil Spill Research and Development Program.

The CHAIRMAN. Thank you very much, Mr. Caldwell. I appreciate your statement. And your entire statement will be entered into the record.

Senator Craig has joined us. Good morning. Senator CRAIG. Good morning, Mr. Chairman. Go right ahead. The CHAIRMAN. The next witness will be the Hon. Jim Whitaker

of the House of Representatives, State of Alaska.