

**GULF RESTORATION: A PROGRESS REPORT
THREE YEARS AFTER THE
DEEPWATER HORIZON DISASTER**

HEARING

BEFORE THE

**COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE**

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

JUNE 6, 2013

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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GULF RESTORATION: A PROGRESS REPORT THREE YEARS AFTER THE DEEPWATER HORIZON DISASTER

THURSDAY, JUNE 6, 2013

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 11:02 a.m., in room SR-253, Russell Senate Office Building, Hon. Bill Nelson, presiding.

OPENING STATEMENT OF HON. BILL NELSON, U.S. SENATOR FROM FLORIDA

Senator NELSON. The meeting will come to order. And it looks like it is very much in order.

[Laughter.]

Senator NELSON. We apologize for the late start. We just completed three votes. And to accommodate Senator Landrieu, I want to forgo any opening statements so that we can accommodate her need to get back to the floor.

I just want to say that if there is one person that is responsible for the passage of the RESTORE Act, it is the senior Senator from Louisiana. She was relentless. And what you learn around this institution is that you don't want to cross Mary Landrieu.

[Laughter.]

Senator NELSON. And, in that relentlessness, she got across to so many others that do not represent states that are on the Gulf the necessity for this money to flow in an orderly fashion by law and the necessity of restoring the environment and our people.

And so, Senator Landrieu, we want to give you the opportunity for the first word.

STATEMENT OF HON. MARY LANDRIEU, U.S. SENATOR FROM LOUISIANA

Senator LANDRIEU. Well, thank you so much, Chairman Nelson and Ranking Member Wicker. It really is a pleasure and truly an honor to be asked to testify before this important subcommittee.

I want to thank both of you before I begin my remarks for your extraordinary leadership in the passage of the RESTORE Act. I thank you for your compliments, Mr. Chairman, but you know it would not have happened without strong support from all of the Senators from the Gulf Coast. And you, in particular, were in a very challenging political environment and yet would find the time

to step up and join a great coalition of Republican and Democratic Senators that made the RESTORE Act happen.

And because of our really unprecedented, in my mind, coordinated efforts on the Senate floor to put a bill together that five states could agree to, with all of our different stakeholders, was absolutely amazing, particularly in the context of a Congress that was having difficulty agreeing on the time of day.

And so I am so proud of our work on the RESTORE Act. And thank you both for your leadership.

I wanted to put a couple of things into the record because I know the focus is on how this money is being allocated, how it is being spent. And I want to start by referring to an excellent letter that was posted by our good friends, Bob Graham and Bill Reilly, who I want to also give a tremendous amount of credit. They served on the Commission at the request of the President and produced a foundation report after the Gulf Coast oil spill, which laid a foundation for our actions.

And both of them, one a Democrat, one a Republican, one a former EPA administrator, and one a dear colleague and friend and supporter of Florida's restoration efforts, as you are, Senator Nelson, a real leader for the restoration of the Everglades, submit their letter for the record.

[The information referred to follows:]

The Washington Post, Opinion—May 31, 2013

RESTORATION OF THE GULF OF MEXICO CAN'T WAIT

By Bob Graham and William K. Reilly

Bob Graham is a former Governor and U.S. Senator from Florida. William K. Reilly was administrator of the Environmental Protection Agency during the George H.W. Bush administration and is a past president of the World Wildlife Fund. They co-chaired the National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling.

Almost daily, some mention is made of the billions of dollars in fines and penalties that might come from BP and its contractors in resolving the litigation that resulted from the April 2010 explosion of the *Deepwater Horizon* oil rig in the Gulf of Mexico.

What the American people don't hear about is the unacceptably slow progress in repairing the damage to one of the world's most productive natural resources. Although oil and gas production is important, the United States also depends on the gulf for much of its seafood (half the production in the lower 48 states), and many residents along the coast depend on a healthy gulf for their livelihoods in fishing, recreational industries and tourism.

The National Commission on the *Deepwater Horizon* Oil Spill and Offshore Drilling, which we co-chaired, recommended that 80 percent of the Clean Water Act penalties resulting from the spill be earmarked for restoring the gulf's ecosystems. Last year, with bipartisan support, Congress passed the RESTORE Act adopting this recommendation. The revenue from the spill penalties offers an opportunity to reverse decades of destruction.

The country needs to get started and needs to do it right. So far, though, we are not encouraged about either prospect.

Progress has been slow. Almost two years ago, BP agreed to provide \$1 billion for early restoration of damaged natural resources—projects to be started before final settlement was reached regarding damages. At the end of April, only 7 percent of the available funds had been committed. A couple of dozen projects have recently been announced for consideration, but half of those are focused on recreation rather than restoring damaged resources and ecosystems.

The goal of restoring the gulf's environment has become lost amid bureaucratic squabbling. A recent report by the Treasury Department's inspector general indicates that Federal agencies can't agree on how the RESTORE Act money will be managed. The states are arguing not only about how much money each will get but

also about how it will be spent. Some state and local officials want to use RESTORE Act funds for things unrelated to ecosystem restoration—such as building resorts, balancing budgets or replacing revenue sources for ongoing expenditures.

Last month, the Gulf Coast Ecosystem Restoration Council established by the RESTORE Act produced a “Draft Initial Comprehensive Plan” describing the council’s goals and the processes it intends to follow. This is encouraging, but the report lacks the spending allocation plan and the priority list of specific projects that the RESTORE Act requires. One thing impeding headway is the fact that, of the five states bordering the Gulf of Mexico, only Louisiana and Florida have specific proposals for restoration projects.

To the Commission, the compelling rationale for allocating revenue from Clean Water Act fines to restoration of the gulf coast was the need to reverse the long-term degradation of the Gulf of Mexico’s ecosystems. Well before the BP spill, the Federal Government was an active partner in depletion of this productive resource, helping in the destruction of coastal wetlands to promote shipping, oil and gas development, and other economic activities.

Now the restoration initiative is at risk of falling victim to the same absence of thoughtful, coherent planning that allowed the degradation of the ecosystems. No clear goals are evident on what the restoration efforts should be trying to achieve. There is no process for assessing improvements in the health of the gulf, no means for ensuring that the projects undertaken are scientifically and technically sound, no mechanism for coordinating the many players and the several buckets of funding. These are essential elements before billions of dollars are expended.

The Gulf of Mexico has suffered long enough. The revenue from the spill penalties offers a once-in-a-lifetime chance to begin reversing decades’ worth of destruction. The country cannot allow this opportunity to be wasted by inadequate planning, bureaucratic infighting or shortsighted handouts to special interests.

Stakeholders also need to look at creative approaches, such as those offered by some in the private sector who are willing to invest their own money to help speed restoration. One investment partnership experienced in wetlands mitigation, for example, has raised funds to restore wetlands protecting New Orleans and says it can do this faster and at lower cost than government can. It is also willing to accept payback after the restored wetlands demonstrate their viability. This type of private initiative should be encouraged.

Every dollar spent conserving habitat, restoring water quality, protecting coastal and marine resources, and strengthening community resilience will create jobs and return the investment many times over for generations to come. Let’s put gulf restoration on a solid foundation—now.

Senator LANDRIEU. I want to particularly underline their short paragraph that says, “The Gulf of Mexico has suffered long enough. The revenues from the spill penalties offer a once-in-a-lifetime chance to begin reversing decades’ worth of destruction. The country cannot allow this opportunity to be wasted by inadequate planning, bureaucratic infighting, or shortsighted handouts to special interests.” I could not agree more.

Every dollar spent conserving habitat, restoring water quality, protecting coastal and marine resources, and strengthening the community resilience” that live along this spectacular working coast—I added that—

[Laughter.]

Senator LANDRIEU.—“will create jobs and return the investment many times over for generations to come. Let’s put Gulf restoration on a solid foundation now.”

I am proud to say that three financing mechanisms that are now in place—put in place by this Congress and this administration. The National Fish and Wildlife Foundation will administer \$2.54 billion as a result of criminal settlements between BP, Transocean, and the Department of Justice. That is under way as we speak.

The Gulf Coast Ecosystem Restoration Trust Fund, established by the RESTORE Act, has \$800 million initially as a result of

Transocean's \$1 billion civil settlement and will receive significant additional funding once the civil trial is complete.

That trial is still under way in New Orleans. It itself has been a tourism boom for our state.

[Laughter.]

Senator LANDRIEU. There are hundreds of lawyers. Some of them are here. They have been spending literally years now in court. I wish they could have settled out of court, but, unfortunately, Mr. Chairman, they weren't able to, so now this huge lawsuit is going on. We will not really know the results for quite some time. But when the results are in, we will have a little bit better idea of the monies that will be allocated to our efforts.

But, prior to that, BP has committed \$1 billion to a national resource damage assessment through NRDA—as you understand the difference between the NRDA penalties and the pollution fund—projects along the Gulf Coast, including \$370 million in Louisiana.

While this is certainly encouraging, it is imperative that we establish viable, effective, and accountable distribution mechanisms now to ensure that this unprecedented investment is targeted at critical projects that contribute to the overall recovery of the Gulf Coast.

With the RESTORE Act—I will go through this quickly—all of the penalty money—and it could be significant. It could be anywhere from \$5.4 billion—an initial \$1 billion has already been received. But it could be anywhere from \$5.4 billion to \$21 billion, depending on the outcome of the case in New Orleans right now under the good, wise direction of Judge Carl Barbier.

When that money is identified, or the penalty, fine, Senators, if we had not passed the RESTORE Act, all of that money would have come, under previous law, to the Federal Treasury. Now, while the Federal Treasury could most certainly use some of that money, I think it is important that that money be directed, 80 percent of it, back to the Gulf Coast for the restoration efforts that we know are so important, not just for our states but for the Nation. And that is what we accomplished, and that is what will happen once this is over.

I am going to try to go quickly. I don't want to take too much time.

While Louisiana bore the brunt of the environmental impacts from the oil spill, we were also seriously affected by adverse economic impacts on tourism, commerce, and other coastal industries. To balance these competing needs, we divided, I think wisely, the funding into three separate pots in the RESTORE Act, decentralized the decisionmaking process to ensure that local, state, and Federal stakeholders had a voice in the process.

It was a delicate balance between the Federal Government dictating their vision of the coast and our own people dictating their vision of the coast. And I think in RESTORE we found a balance, and I hope that those administering this will seek that same balance.

Each state gets an equal share, as you know, in pot 1 and can use it for environmental restoration, work force development, or essential coastal infrastructure projects. In Louisiana, 30 percent of the money in this pot will go directly to coastal parishes. I insisted

on that, Senator Vitter supported that effort, so that our local parishes can have some of this money to do some things—we have 19 coastal parishes—to do some things that are very important.

Pot 2, 30 percent, the Gulf Coast Ecosystem Restoration Council recently released their draft comprehensive plan for public comment. I am very concerned about the Council's consideration of developing supplemental evaluation criteria to evaluate proposals and selected projects. The RESTORE Act established four explicit criteria that will ensure this funding is dedicated to addressing environmental impacts of the spill. And I hope and expect the chair of the council, which is at Department of Commerce, to ensure this congressionally crafted balance is not altered or amended too much through the implementation process.

Pots 1 and 3 can go toward economic or environmental recovery. Pot 2 must remain dedicated to environmental recovery to preserve the delicate balance Congress struck between these competing interests.

Let me say, if you will bear with me for one more minute, Mr. Chairman, if I could, Congress is aware of the competing interests, we all represent the competing interests, between the oil and gas industry, the fisheries industry, the environmental industry, the river coalition of how to manage that runoff that comes all the way from Minnesota down the Mississippi to create that dead zone in our Gulf, the fertilizer plants, refineries. We are not oblivious.

So we crafted the RESTORE Act, I think it was, if I can say, it was masterful, the way we tried to balance, you know, the interests and the political interests of our Governors, which are from, you know, different political parties than some of us are.

Now, it might not be perfect, but I think we got the balance correct. And I really hope that the implementers, which is the purpose of this hearing, will follow that good direction.

In addition, let me say—and, Senator, this is where you particularly showed tremendous foresight and leadership. We establish within this fund the Gulf Coast research, science, and technology program.

You know, in the face of the beauty and strength of Mother Nature, it is not wise to not be humble. Let me just say that. And science can make us much better leaders, if we would just listen to our scientists and to the actual research. We know things by faith; we also need to learn to listen to science, as well. And we don't spend, in my view, enough money understanding this ecosystem. So how can you fix it if you don't understand it?

So you, Senator, led the effort to create this science and technology trust fund. We will have more money for science and investments in all of our great universities that, if just given a little bit of help, can do the research.

And, finally, I encourage all of you to work with the planning committee and groups like the Center for Planning Excellence. There are many other nonprofits. This is a little Center for Planning Excellence that we created after Katrina when we were desperate to learn how to plan our communities better, to be more self-sustaining, to be smarter, to have better growing plans.

And from Mississippi, which I am very familiar with the Gulf Coast, spent a lot of my childhood on the Gulf Coast of Florida,

Alabama, and Mississippi, as well as Louisiana—our communities could really use some help planning and trying to think ahead, as you know, how to sustain our way of life and our culture.

So there are some implementation concerns. I am going to submit those for the record.

Let me just end with, I could not be prouder—I could not be prouder of the effort that is under way in this committee now to implement an extraordinary, I think, and special piece of legislation.

And while the accident was horrific—we lost 11 men on the rigs; their families and communities are still suffering—it is a once-in-a-lifetime opportunity to use these penalty monies to jumpstart some of these very needed restoration projects, not only for the benefit of our five states but the entire nation that depends on this extraordinary working coast.

Thank you very much.

[The prepared statement of Senator Landrieu follows:]

PREPARED STATEMENT OF HON. MARY L. LANDRIEU, U.S. SENATOR FROM LOUISIANA

I am proud to be able to say today that all three financing mechanisms established in the wake of the 2010 oil spill to help restore the coast now have funding in place. The National Fish and Wildlife Foundation will administer \$2.54 billion as a result of the criminal settlements between BP, Transocean and the Department of Justice. The Gulf Coast Ecosystem Restoration Trust Fund, established by the RESTORE Act, will receive \$800 million as a result of Transocean's \$1 billion civil settlement and significant, additional funding once the civil trial is complete. BP has committed \$1 billion to Natural Resource Damage Assessment (NRDA) Early Restoration projects along the Gulf Coast including \$370 million in Louisiana.

While this is certainly encouraging, it is imperative that we establish viable, effective, and accountable distribution mechanisms now to ensure that this unprecedented investment is quickly targeted at critical projects that contribute to the overall recovery of the Gulf Coast.

We must dedicate Clean Water Act penalties to the Gulf of Mexico. Without this bill, every dime collected from Clean Water Act fines would have gone to the Federal Government's Oil Spill Liability Trust Fund instead of repairing the environmental and economic damage inflicted on the Gulf Coast. Thanks to the RESTORE Act, 80 percent of the Clean Water Act fines will go to cleaning up this mess, making this the largest single investment in environmental restoration in our Nation's history.

The Clean Water Act provides for the collection of between \$1,100 and \$4,300 per barrel of oil spilled by the responsible party with a finding of 'gross negligence' resulting in the maximum penalty. Based on the estimated 4.1 million barrels of oil spilled in the Gulf of Mexico, BP could face fines between \$4.5 billion and \$17.6 billion. This funding will allow federally authorized projects like the Louisiana Coastal Area (LCA) Program, originally authorized in WRDA 2007, to get off the drawing board.

It is important that we recognize the balance between environmental and economic impacts. While Louisiana bore the brunt of the environmental impacts from the oil spill, we were also seriously affected by the related economic impacts on tourism, commerce, and other coastal industries. To balance these competing needs, we divided the funding into separate pots and decentralized the decision-making process to ensure local, state, and Federal stakeholders all had a voice in the process.

Each state gets an equal share under Pot 1 and can use it for environmental restoration, workforce development, or essential infrastructure projects. In Louisiana, 30 percent of the money in this pot will go directly to coastal parishes to ensure locally significant projects have a viable funding source.

The Gulf Coast Ecosystem Restoration Council will administer Pot 2. They recently released their Draft Comprehensive Plan for public comment, and I am very concerned about the Council's consideration of developing supplemental evaluation criteria to evaluate proposals and select projects. The RESTORE Act established four explicit criteria that will ensure this funding is dedicated to addressing the environmental impacts of the spill, and I expect Commerce as Chair of the Council

to ensure this Congressionally-crafted balance is not altered or amended through the implementation process.

Pending the approval of an expenditure plan, each Gulf Coast state will receive additional funds through Pot 3 based on an impact allocation formula that they can dedicate to projects that contribute to the overall economic and ecological recovery of the Gulf Coast. The remaining 5 percent is dedicated to Gulf Coast Research, Science and Technology.

Comprehensive ecosystem restoration planning is another important component of the RESTORE Act. The Draft Comprehensive Plan is an important first step to rethinking the way we live with water all along the Gulf Coast. Since Hurricanes Katrina and Rita devastated coastal Louisiana, communities across the coast have embraced land use planning as a tool for protecting and preserving our unique way of life. I encourage all of you to work with the planning community and groups like the Center for Planning Excellence throughout these processes (NRDA, NFWF, RESTORE) to ensure that these investments support sustainable development and economic activity.

I do have some serious concerns about the project implementation timeline. The Draft Comprehensive Plan does not include either a description of the manner in which the funds from the Trust Fund will be made available to the Council for project implementation nor a project and program priority list as required by the RESTORE Act.

I am also apprehensive about the procedural delays associated with the NRDA processes. While BP has agreed to provide \$1 billion for early restoration of damaged natural resources through the NRDA process, only 7 percent of the available funds have been committed, and an undue percentage of the projects under consideration for NRDA funding are focused on human use and recreation rather than restoring damaged resources and ecosystems.

I look forward to continued work with the Council to ensure that the carefully constructed Congressional compromise is protected and that the law is implemented in the manner that Congress intended.

Senator NELSON. Thank you, Senator Landrieu. And, again, it is obvious, your leadership, by virtue of what you have just said.

And, indeed, this hearing is focusing on 3 years after the disaster and seeing that the law is now implemented according to the legislative intent.

Recently, one of the participants that is not here, but I had occasion privately to speak with the Secretary of the Treasury. There is a part of the law that is being implemented through Treasury. And to ask Jack Lew to get off of dead-center and get those requirements that are the responsibility of Treasury under way. Likewise, we will be asking the rest of the participants today.

One final item before I turn to our colleague. I spoke with some LSU professors who, shortly after the disaster, had pointed out by studying a little fish called a killifish that roots around in the sediment in the bays and the estuaries, and they compared what was happening to that little fish in the food chain.

And in the bays, like Barataria, that were so affected by the oil spill, compared with that same little fish in other bays that did not have much oil, there was all the difference in the world in the reproduction, in the growth, indeed in the appearance of that little critter in the food chain.

And if that were true, then we are going to have to be very concerned about the future effects not only of the oil that was spilled there but the oil that is still out there.

So let me turn to my colleague.

And you certainly can be excused, Senator Landrieu, if you need to get back to the floor.

Senator Wicker, for your opening comments.

**STATEMENT OF HON. ROGER F. WICKER,
U.S. SENATOR FROM MISSISSIPPI**

Senator WICKER. Well, thank you, Mr. Chairman.

And thank you, Senator Landrieu, for your leadership. And we do wish you well in the statement that you have to make on the floor soon. So you are certainly——

Senator LANDRIEU. Thank you. I am going to slip out. If I could just thank you both.

Let me just respond, yes, I am very concerned about the effects of the oil, and, you know, we don't have enough science about the dispersement and the effects. And this funding, Senator, will really help us find our way forward, because we have to figure out a way to mine the natural resources that are so important for the economic development and strength of this Nation.

And oil and gas is an important natural resource for us and is really fueling a great manufacturing renaissance in our country, particularly with natural gas. A lot of that is discovered, as you know, in the Gulf.

But I think, with these resources appropriately applied, we can even make the drilling operations that are essential safer, minimize the environmental impact, and set a model for the whole world. Because all over the world, in places off the coast of Africa, South America, you know, Argentina, et cetera, et cetera, there are drilling operations.

If we can do it right and learn how to do it right in the Gulf, in the greatest democracy in the world with the strongest environmental laws and the greatest innovation of our industry, what a blessing this will be to the world. I mean, that is what this is really about. It is not just about the people in Louisiana, Mississippi, Texas, and Alabama. It is really giving a path forward for a planet that is in desperate need of these notions and ideas.

So thank you all very much. It has been a pleasure. And I do have to go back to the floor. Thank you.

Senator WICKER. Thank you very much, Senator Landrieu.

And it happens that the three of us represent Gulf Coast states. I think the importance that Senator Landrieu pointed out of this issue across the country and around the world is one of the reasons, Mr. Chair, why we had such great support from California, from the East Coast, and from all over the great heartland of America for the RESTORE Act, because it is not only fair but it is very forward-thinking and important.

So thank you for holding this important hearing.

And we are going to get to our panel very, very soon.

Today, we discuss the progress of restoration of the Gulf following the *Deepwater* disaster. Our focus is on reviewing the restoration efforts that have been made to date, as well as reviewing and identifying remaining challenges.

The Gulf Coast region is vital to our Nation and our economy, providing valuable resources, including abundant seafood, and recreational activities. More than 22 million Americans lives in Gulf Coastal counties, working in crucial U.S. industries such as shipping, commercial seafood, tourism, and oil and gas production. The Gulf is one of the most diverse environments in the world and harbors more than 15,000 species of sea life.

Unfortunately, the ecological health of the region has already been suffering due to the loss of critical wetland habitats, the erosion of barrier islands, fishery disasters, water-quality degradation, and significant coastal land loss. The *Deepwater Horizon* oil spill amplified these issues and drastically added to the challenges facing this delicate ecosystem and the economy of the region.

Some of the more visible impacts of the spill include the damage to the fishing industry and the more than 8,000 injured or dead waterfowl, sea turtles, and marine mammals found over the course of 6 months following the spill. The 2010 spill was the largest in U.S. history, and the full extent of the environmental damage will not be established for years to come, as the Chairman just pointed out.

Federal, state, local, and private entities have worked together to spearhead recovery efforts. The result has been an unprecedented allocation of funds that will be available to assist in the revitalization of the region's environment and economy. These restoration funds include the National Fish and Wildlife Foundation's Gulf Environmental Benefit Fund, natural resource damage assessment funds, and the RESTORE Act's Gulf Coast Restoration Trust Fund.

I am pleased that my home state of Mississippi is committed to making full recovery happen and taking aggressive steps to protect the future livelihood of Gulf Coast residents. Mississippi has organized state efforts by creating GoCoast 2020 to serve as the official advisory body for the allocation of funds under the RESTORE Act.

GoCoast 2020 has identified projects in eight key areas related to recovery. The proposed projects would protect the environment, help spur needed job creation, and increase vital economic opportunities. In implementing the RESTORE Act, Mississippi has identified as the center of excellence the Center for Gulf Studies.

The Committee needs to monitor recovery efforts and ensure funds are being used in an efficient and responsible manner. A successful recovery depends on coordination and communication, and we hope this hearing will facilitate these needs.

I want to thank our witnesses for testifying today. We have two distinguished panels. We look forward to hearing their views on the progress of the Gulf Coast recovery and the challenges we are facing.

In particular, on a matter of personal privilege, I want to welcome Mississippi's Director of the Department of Environmental Quality, Trudy Fisher, who will be testifying in the second panel.

She has served as the agency's director since 2007 and has been a tremendous asset to Mississippi and the Gulf region. As a matter of fact, after the *Deepwater Horizon* oil spill, she could probably have been chosen citizen of the year, her efforts have been so invaluable to our state. She is Mississippi's trustee for natural resources under the Oil Pollution Act and is tasked with leading Mississippi's recovery from the *Deepwater Horizon* spill.

So thank you, Trudy, for being here and being on the second panel.

Thank you, Mr. Chairman, for your leadership and this hearing. Senator NELSON. If I could ask the panel to come on up.

I will insert my remarks in the record.

[The prepared statement of Senator Nelson follows:]

PREPARED STATEMENT OF HON. BILL NELSON, U.S. SENATOR FROM FLORIDA

Three years ago, we were in the middle of the worst man-made environmental disaster in our Nation's history—the explosion of the *Deepwater Horizon* oil platform.

Then, a little under a year ago, Congress passed the RESTORE Act, which redirects the Clean Water Act civil penalties back to the Gulf Coast States. I was proud to help author and vote for that legislation.

While the planning framework was underway for RESTORE over the last year, both BP and Transocean settled their criminal cases under the Clean Water Act with the U.S. Government, which will lead to over two and half billion dollars in restoration projects for the Gulf through the National Fish and Wildlife Foundation.

And even before that, BP released one billion dollars in early restoration money for natural resources damages in April 2011.

However, three years later, the Gulf has seen only 7 percent of the early restoration monies, and we still don't have a concrete timeframe for money to be disbursed through RESTORE, the National Fish and Wildlife Federation, or through the final Natural Resource Damages Assessment.

My top priorities for restoring the gulf are to ensure that we have sufficient science dedicated to restoring the ecosystem and that restoration projects are funded on a much timelier basis than in the last 3 years. Simply put, the Gulf can't wait.

In today's hearing I'm interested in learning how the various Federal and local stakeholders view a restored gulf and how you are working together to ensure this process runs more efficiently.

To me, a restored gulf is one in which clean water is free from harmful algae blooms and free from tar mats, is home to oyster reefs and fish habitat and sea grass beds, where charters ferry tourists from hotels to pristine beaches and then on out to the productive fishing spots.

With regard to RESTORE, I am also interested in learning more about the how the Council plans to narrow the proposed project list into a concrete plan. Without a specific list of projects, how can we be certain the money is going to be spent on ecosystem driven projects?

One of the lessons we learned—and we learned it too late—is that we do not have sufficient understanding of the gulf ecosystem. We know that one-third of our domestic seafood comes from the gulf waters but we did not have a clear picture on the biological status of two-thirds of the federally managed fish stocks that call the gulf home, so it is important that some of these fines go toward dedicated, long-term science about the gulf ecosystem.

I'd like to thank today's witnesses and others who have been working to design plans and projects that will lead to a healthy and restored Gulf of Mexico. I greatly appreciate the amount of time and energy you have spent trying to get it right. Thank you again to our witnesses and especially to Senator Landrieu, who deserves the highest praises for her work to get this legislation passed. I look forward to hearing your testimony.

Senator NELSON. And we will insert each of your remarks, your written testimony, into the record, and if you could give us a summary.

We will hear first from Mrs. Lois Schiffer, who is General Counsel of the National Oceanographic and Atmospheric Administration. And she will discuss Commerce's role as the Federal Chair of the Council.

Rachel Jacobsen, Principal Deputy Assistant Secretary for Fish, Wildlife, and Parks in the Department of the Interior, will discuss the priorities for the Interior Department for Gulf Coast restoration.

And Jeff Trandahl, Executive Director of National Fish and Wildlife Foundation, will discuss the foundation's plans for allocating the criminal fines from the *Deepwater Horizon* disaster on the ecosystem restoration and land acquisition projects.

So we will start with you, Ms. Schiffer.

**STATEMENT OF LOIS SCHIFFER, GENERAL COUNSEL,
NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC
ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE**

Ms. SCHIFFER. Good morning, Chairman Nelson, Ranking Member Wicker, and members of the Committee. My name is Lois Schiffer, and I am the General Counsel of NOAA.

I would like to take a moment to acknowledge with sadness the passing of your colleague, Senator Lautenberg. I had the honor to meet and work with him. He was a pioneer of efforts to protect our environment, and he is a great tribute to the U.S. Senate.

Thank you for the opportunity to testify today about NOAA's role in the important subject of Gulf Coast environmental and economic restoration following the *Deepwater Horizon*/BP oil spill.

The Gulf Coast region is vital to our nation's environment and economy. Even before the 2010 spill, its ecosystems and economy were impaired by years of environmental problems, natural disasters, and resulting economic difficulties. Jobs and the environment go hand-in-glove here. The task of restoration is vast, and the approach is complex.

Today, I will focus on three components of the restoration process: the three approaches that must now be coordinated to advance restoration; the natural resource damage assessment and restoration under the Oil Pollution Act, which I will call NRDA, including early restoration; and the terrific progress of the science program that NOAA is charged with developing under Section 1604 of the RESTORE Act.

First, in the wake of the *Deepwater* spill, three overarching approaches to restoration exist. NOAA is working with our co-trustee states and Federal agencies on NRDA, which requires those who cause oil spills to restore injured natural resources to the condition they were in at the time of the spill and compensate for lost use.

Second, the 2012 RESTORE Act, which you have heard about from Senator Landrieu so eloquently, provides that 80 percent of civil penalties under the Clean Water Act be returned to the Gulf to be spent under five different components, with a focus on ecosystem restoration, economic recovery, tourism promotion, and science.

And, third, the National Fish and Wildlife Foundation is administering \$2.55 billion for restoration, as provided in criminal plea agreements with Transocean and BP. For NRDA and RESTORE, the amount of funding is the subject of ongoing litigation and may not be known for some time. Our opportunity and our challenge are to use all of these funds wisely to restore the Gulf. Coordination across these funds and approaches is essential.

Second, NOAA has a significant role in NRDA. The process includes a science-based assessment of the injury to resources caused by the spill. And I think, Senator Nelson, your discussion about the killifish is an indication of how difficult that assessment is.

NOAA works closely with the Department of the Interior, with the five states, and now with two additional Federal trustees. And it began the assessment as soon as the spill began, and that assessment is ongoing. Because of the complex ecosystem services these ecosystems provide and the injuries caused by the release of oil and its response, it takes time.

NOAA regulations specifically provide for participation by the responsible parties at the Federal agencies' discretion. Based on the assessment, the trustees have begun to develop a comprehensive restoration plan to restore, rehabilitate, replace, or acquire the equivalent of injured resources and services and to compensate for lost use. Public involvement is important, and we began seeking it for this plan in 2011.

For the *Deepwater* spill, we have also tried the bold innovation of entering a framework agreement with BP, under which it provides \$1 billion toward implementation of early restoration projects.

The first two phases of the projects—10 projects for \$71 million—have been through a complete process and are under way. Thirty-one proposed projects, valued at approximately \$585 million for phase 3, were announced in the *Federal Register* on May 6. And a *Federal Register* notice this week seeks public comment on a component of that program.

The trustee council, with BP, has worked long and hard to implement the novel idea of early restoration at this scale, and we are making steady progress.

Third, NOAA is charged with establishing a Gulf Coast science program with 2.5 percent of the RESTORE funds plus certain interest. NOAA has made great progress here. We have and continue to engage broadly with partners and stakeholders in the Gulf, including the Gulf States Marine Fisheries Commission, the Gulf of Mexico Fisheries Council, academia, NGO's, and industry.

I am going to highlight three features of the science program as my conclusion. Its purpose is to achieve an integrative, holistic understanding of the Gulf of Mexico ecosystem, and that understanding will be a catalyst to bringing together the full range of science as it develops across all of these different pots of money and components.

The program has several guiding principles, examples of which are in my written testimony, that emphasize approaches to provide useful information that improves understanding and management of the ecosystem.

And, finally, the NOAA science program is working with the state centers of excellence as they are identified so that Congress's vision in the two science programs is synergistic.

Thank you for the opportunity to discuss NOAA's role in the Gulf of Mexico restoration. I welcome any questions and look forward to working with you further on this important effort.

[The prepared statement of Ms. Schiffer follows:]

PREPARED STATEMENT OF LOIS SCHIFFER, GENERAL COUNSEL, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Introduction

Good morning Chairman Nelson, Ranking Member Wicker, and Members of the Committee. My name is Lois Schiffer, and I am the General Counsel at the National Oceanic and Atmospheric Administration (NOAA), within the Department of Commerce (DOC). Thank you for inviting NOAA to testify before you today on the NOAA's role in restoring the Gulf of Mexico's environment and economy following the *Deepwater Horizon* oil spill.

Background of Restoration Opportunities, Including Importance of Science to Inform Those Opportunities

The Gulf Coast region is vital to our Nation and our economy, providing valuable energy resources, abundant seafood, extraordinary beaches and recreational activities and a rich cultural heritage. A strong and vibrant ecosystem is key to the Gulf's future. Even before the *Deepwater Horizon* oil spill of 2010, the ecosystems and economy of the Gulf Coast region (Gulf) were impaired by years of environmental problems, natural events, and resulting economic difficulties. In response to the oil spill and building on prior efforts to help ensure the long-term restoration and recovery of the Gulf Coast region, several large scale restoration efforts have begun including work under the Natural Resources Damage Assessment process; the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (the RESTORE Act), and projects through the National Fish and Wildlife Foundation. The Oil Pollution Act of 1990 (33 U.S.C. 2701 et seq.) requires companies spilling oil to restore the affected natural resources to the condition they were in at the time of the spill and compensate for lost use of those resources. Almost immediately after the oil spill, the natural resource trustees began the natural resource damage assessment process as an important step. In addition, Congress enacted and President Obama signed the RESTORE Act, which dedicates 80 percent of any civil and administrative penalties paid under the Clean Water Act, after the date of enactment, by responsible parties in connection with the *Deepwater Horizon* oil spill to the Gulf Coast Restoration Trust Fund for ecosystem restoration, economic recovery, and tourism promotion in the Gulf Coast region. A third source of restoration funding has been provided to the National Fish and Wildlife Foundation (NFWF), under the criminal pleas by BP and by Transocean, for expenditure on Gulf restoration projects.

Each of these categories of funding stems from a set of conditions and requirements, and each is under the management of a specified and unique set of governance arrangements. The total amount of funds that may ultimately be available for restoration under the Natural Resource Damage Assessment and process, and under the RESTORE Act, remains uncertain at this time. Both the NRDA restoration and the RESTORE Act civil penalties are the subject of ongoing litigation. We recognize the importance of coordination across these Gulf restoration initiatives and will work closely with our partners to advance common goals, reduce duplication, and maximize the benefits to the Gulf Coast region. Federal, State, and local agencies, academic institutions, environmental organizations, and many other partners are actively working to plan and execute significant science and restoration pursuant to the specific authorities that guide each process. It is NOAA's view that all of this restoration and the entire region will benefit from collaborative work towards a science-based approach that focuses on the overall long-term health, prosperity, and resilience of the Gulf Coast region.

At NOAA, we have worked to stand up the NOAA Gulf Coast Ecosystem Restoration Science Program provided for in the RESTORE Act, and to use that as a basis to create collaboration and consultation among the scientists working on the other restoration components as well. This cooperation is non-binding and collaborative and is only one piece of the larger science coordination puzzle which will need to take place across all of the various scientific entities to share information and ideas and, to the extent possible and practical, harmonize activities and investments to achieve the best results. This coordinated science approach provides a sound foundation to support all the restoration efforts. Using this science approach as a model, we are also working to develop voluntary collaboration among the management entities, understanding that must be done in a way that respects the authority, responsibilities, and standards of each entity (Natural Resources Trustee Council, Gulf Coast Ecosystem Restoration Council, NFWF, science programs) and is done in a manner that expedites rather than slows each process.

Effective restoration will be achieved most effectively if science is the foundation on which all of the approaches build. The importance of science is recognized by the requirements for assessment in the Oil Pollution Act and regulations that establish the NRDA process. Further, the NOAA Gulf Coast Ecosystem Restoration Science Program, described later in my testimony, and the State Centers of Excellence program, are both provided for under the RESTORE Act. The criminal pleas noted above also fund the National Academy of Sciences Gulf Program. Indeed, a strong investment in science is important as support for all of the restoration planning, implementation, and monitoring.

NOAA's Natural Resource Damage Assessment Role

NOAA has several critical roles mandated by the Oil Pollution Act (OPA). For example, from the moment of the *Deepwater Horizon* spill, NOAA had responsibility

under the Act for cooperating on the response. One of NOAA's most important roles under the OPA and implementing regulations is that of a natural resource trustee. As a trustee, NOAA, along with our co-trustees, is charged with conducting a Natural Resource Damage Assessment (NRDA) to assess the natural resources and the damage to them caused by the oil spill and the response, as well as the value of the lost use of those resources until they are restored. This is an injury to the public, and the public availability of those resources, and is in addition to any individual injury caused by the spill. In conjunction with assessment of the injury, the OPA requires development of a Restoration Plan, developed with public review and input. The NRDA process involves resolution of a claim for funding the restoration plan that is either paid by those causing the spill or submitted as a claim to a Federal court for adjudication. The essence of the process is to identify the injury to trust resources caused by the spill, to determine the type and amount of restoration and rehabilitation needed to restore the resources to their pre-spill state or provide equivalent alternative resources, and to compensate for lost use by seeking that funding from those who caused the spill. Inherent in this process is the need to assess the injuries to natural resources that are caused by the oil spill itself, as well as those caused by actions carried out as part of the oil spill response. According to NOAA's regulations implementing the OPA, injury is determined relative to baseline, which is "the condition of the natural resources and services that would have existed had the incident not occurred" (15 C.F.R. § 990.30). For restoration, OPA requires the trustees to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources and services (33 U.S.C. 2706, see also 15 C.F.R. § 990.30) and in doing so there must be a nexus between the types and magnitude of the injury and the restoration.

NRDA permits the trustees to recover not only for the injury to natural resources and services provided by the natural resources, but also for the public's lost uses of those resources, such as recreational fishing, recreational boating, hunting, and swimming, and the protections that effectively functioning marshes provide to the ecosystem. The goal is to assess the injury, and develop and implement a restoration plan that compensates the public for all of the ecological and human use loss injuries.

In general, stewardship of the Nation's natural resources is shared among several Federal agencies, states, and federally recognized Indian tribes. NOAA, acting on behalf of the Secretary of Commerce, is the lead Federal trustee for many of the Nation's coastal and marine resources.

The *Deepwater Horizon* NRDA Trustees (Trustees) are the trustee agencies from the states of Florida, Alabama, Mississippi, Louisiana and Texas; and the Department of the Interior (DOI), U.S. Environmental Protection Agency (EPA), NOAA, and U.S. Department of Agriculture (USDA). These nine entities (5 states and 4 Federal agencies) have formed a Trustee Council that has worked cooperatively since shortly after the *Deepwater Horizon* spill to assess compensable injuries caused by the spill, and to develop a restoration plan to restore affected Gulf resources, compensate for lost uses including lost human uses, and to implement those plans. We note that two of the Federal agencies—EPA and USDA—were added by Executive Order 13626 of September 10, 2012, and have joined the cooperative efforts since that time.

NRDA regulations explicitly seek participation in the assessment and restoration planning by responsible parties and the Trustees to facilitate the restoration of natural resources and their services injured or lost by oil spills (15 C.F.R. § 990.14(c)(1); 15 C.F.R. § 990.440(d)). The nature and extent of participation in restoration planning is left to the discretion of the Trustees (15 C.F.R. § 990.14(d)). OPA also encourages compensation of injured natural resources in the form of restoration, with public involvement in determining the types and magnitude of the restoration (33 U.S.C. 2706(c)(5)). Indeed, public involvement is an important component of the Oil Pollution Act and of the National Environment Policy Act (NEPA) Environmental Assessment and Environmental Impact Statement processes that work together to inform decisions about restoration plan developing and implementation.

Assessing injury to natural resources in this context is difficult. Understanding complex ecosystems, the services these ecosystems provide, and the injuries caused by the release of oil and the response takes time—often years. The time of year the resource was injured, the type/source of oil, the amount and duration of the release, and the nature and extent of clean-up are among the many diverse factors that affect how quickly injury to resources can be assessed and restoration and recovery planning and implementation can occur. The OPA requires that the trustees be able to demonstrate connections between the release of the oil, exposure of the resources to the oil, and, finally, a causal connection between exposure and resource injury. Exposure and its effects on the resource can be direct and/or indirect. For example,

the health of a dolphin might be adversely affected by being directly exposed to the oil in the water. It can also be exposed and affected by eating prey that becomes contaminated by the oil. But if the oil also adversely affects dolphin prey and causes a decrease in prey, then the dolphins can be affected by this indirect route as well.

In addition, because the Natural Resource Damage Assessment forms the basis for a Restoration Plan that may be litigated, an especially careful level of scientific rigor is required for the studies that are to demonstrate these connections in order to ensure that our studies will be accepted by a court as evidence in the case. For all of these reasons, the assessment and the restoration plan based on it may take a number of years to complete and even more time to implement. We note, for example, that the implementation of the restoration plan for the Exxon Valdez oil spill that occurred in 1989 is still ongoing. The NRDA process requires an objective, scientifically rigorous, and cost-effective assessment of injuries—and development of a restoration plan with public input that assures that harm to the public's resources is fully addressed.

Early Restoration

In April 2011, the Natural Resource Trustees announced an agreement under which BP would provide \$1 billion toward implementation of early restoration projects. This agreement is called the Framework Agreement for Early Restoration Addressing Injuries Resulting from the *Deepwater Horizon* Oil Spill (Framework Agreement). A separate agreement among the Trustees allocated that \$1 billion as such: the five state trustees, DOI, and NOAA each receive \$100 million for funding early restoration projects pertaining to their primary trust resources. The remaining \$300 million is to be used to fund additional state-proposed restoration projects as selected by NOAA and DOI. All projects must be approved by the Trustee Council. The Framework Agreement represents an initial step toward fulfilling BP's obligation to fund the complete restoration of injured natural resources and compensate for lost use of those resources.

The Trustees' key objective in pursuing early restoration is to achieve tangible recovery of natural resources and natural resource services for the public's benefit while the longer-term injury and damage assessment is under way. As with the more complete assessment and restoration planning process, a restoration plan with opportunity for public input must accompany project selection.

Phase I and Phase II Early Restoration

The first early restoration plan, the Phase I Early Restoration Plan & Environmental Assessment (Phase I ERP/EA), was presented for public review and comment in December 2011 and finalized by the Trustees in April 2012. The eight projects included in the Phase I ERP/EA are now being implemented, and collectively will provide marsh creation, coastal dune habitat improvements, near-shore artificial reef creation, and oyster cultch restoration, as well as the construction and enhancement of boat ramps to compensate for lost recreational use of resources. The total estimated cost for the Phase I ERP/EA is \$62 million.

The trustees presented the Phase II Early Restoration Plan & Environmental Review (Phase II ERP/ER) for public review and comment in November 2012 and finalized it in December 2012. The Phase II ERP/ER projects, of which there are two, will help restore nesting habitats for beach-nesting birds and sea turtles harmed as a result of spill response activities. The total estimated cost for these two projects is \$9 million.

Next Steps for Early Restoration

The Trustees have spent substantial time working on Phase III of the Early Restoration Plan, and are proposing additional restoration projects in an upcoming Phase III Draft Early Restoration Plan (Phase III DERP). Further, the Trustees are developing a Programmatic Environmental Impact Statement (PEIS) under the auspices of the National Environmental Policy Act (NEPA) to evaluate the environmental effects of early restoration project types, as well as the early restoration projects that the Trustees intend to propose in the upcoming Phase III Restoration Plan. Examples of early restoration project types include: create and improve wetlands; protect shorelines and reduce erosion; restore barrier islands and beaches; restore submerged aquatic vegetation; restore and protect fish, oysters, birds and sea turtles; restore and protect the water column; enhance public access to natural resources for recreational use; and promote environmental and cultural stewardship.

At this time, the early restoration projects that the Trustees are evaluating for Phase III of early restoration include the proposed list of projects announced by the Trustees in the *Federal Register* on May 6, 2013 (78 FR 26319–26323). Additional proposed early restoration projects may be added. The Trustees also are currently engaged in a restoration scoping process to ensure that important issues are consid-

ered early in the decision making process. This scoping includes several important steps, such as (1) identifying the concerns of the affected public and Federal agencies, states, and Indian tribes; (2) involving the public in the decision making process; (3) facilitating efficient early restoration planning and environmental review; and (4) defining the issues and alternatives that will be examined in detail. The Trustees invite public comments regarding the scope, content, and any significant issues the Trustees should consider in the PEIS.¹

The RESTORE Act

As we noted above, the *Deepwater Horizon* NRDA and Restoration Planning process is occurring concurrently with other restoration efforts, including those initiated by the RESTORE Act. The RESTORE Act provides for planning and resources for a regional approach to the long-term health of the valuable natural ecosystems and economy of the Gulf Coast region. The RESTORE Act establishes five categories of funding.

RESTORE Act Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology Program

As required by the RESTORE Act, NOAA established a Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology Program, abbreviated as the NOAA Gulf Coast Ecosystem Restoration Science Program, in January 2013. The Program will receive 2.5 percent of the funds, plus 25 percent of the interest, from the Gulf Coast Restoration Trust Fund.

The Program NOAA has developed seeks to achieve an integrative, holistic understanding of the Gulf of Mexico ecosystem and support, to the maximum extent practicable, restoration efforts and the long-term sustainability of the ecosystem, including its fish stocks, habitats, and fishing industries. The Program has been established within NOAA and includes engagement with its partners and stakeholders in the Gulf, including the Gulf States Marine Fisheries Commission (Commission) and the Gulf of Mexico Fisheries Management Council (FMC). During program implementation, we will continue regular consultation with the Commission and FMC, as required by the Act, and pursue engagement activities with academia, non-governmental organizations (NGOs), industry, and other partners and stakeholders. As one of several science programs supporting Gulf of Mexico science, NOAA is actively engaging and coordinating with other initiatives, such as the Gulf of Mexico Research Initiative, the Centers for Excellence developed under the RESTORE Act, the Gulf of Mexico Program at the National Academy of Sciences,, and the Gulf Environmental Benefit Fund at the National Fish and Wildlife Foundation, as well as with existing regional collaborative groups and research programs, such as the Gulf of Mexico Alliance (GOMA) and the Gulf of Mexico Research Initiative (GOMRI).

NOAA Science Program Background

Shortly after the RESTORE Act was passed, a development team led by senior executives from the National Marine Fisheries Service, National Ocean Service, Office of Oceanic and Atmospheric Research, and USFWS was convened to develop a framework for this new program. The development team worked diligently across NOAA, with the USFWS, and with key stakeholders including the Gulf of Mexico Fishery Management Council, the Gulf States Marine Fisheries Commission, the five Gulf States, Federal partners, academic institutions, non-profit organizations and other entities across the Gulf region to solicit guidance in designing the program. The result is a program that will consider the entirety and connectivity of the ecosystem in the Gulf of Mexico; integrate and build on existing research, monitoring, and modeling efforts and plans; leverage existing partnerships already established among federal, state, and academic entities and with NGOs, and develop new partnerships as appropriate; and avoid duplication with ongoing activities in the Gulf of Mexico.

Program Engagement and Coordination

To be successful, the Gulf Coast Ecosystem Restoration Science Program must harness the expertise of the scientific community in the Gulf of Mexico and beyond, and link it to the region's pressing science needs. An engagement process that connects researchers, resource managers, and resource users and allows their collective knowledge to inform the direction of the Program is required. NOAA, working with our USFWS partners, initiated this engagement process early in the program development phase and has continued it as we move to early stages of implementation. NOAA and FWS have already had over 100 meetings with stakeholders including

¹ 78 FR 33431 (June 4, 2013)

representatives from the Commission, the FMC, universities, Federal agencies, and non-governmental organizations. These meetings shaped the Program's current framework and continued engagement over the coming months will inform the Program's goals and priorities.

It is important to keep in mind that this Program is one of several recently created research programs focused on increasing our understanding of the Gulf of Mexico. Others include the Gulf of Mexico Program at the National Academies, the Gulf of Mexico Research Initiative, and the State Centers of Excellence also authorized in the RESTORE Act. These programs will add their activities to the existing Federal and non-federal research programs already active in the Gulf of Mexico. NOAA is actively engaging and coordinating with these other new initiatives as well as existing research programs. This includes engaging with the Gulf of Mexico University Research Collaborative, which has assembled a group of organizations funded as a result of *Deepwater Horizon* to discuss science planning efforts and coordination, as well as discussing coordination mechanisms across Federal agencies with on-going scientific activities in the Gulf.

While the categories of restoration and science RESTORE addresses will encompass those undertaken by NRDA, both will be undertaken in a fully-coordinated manner. Those projects that have been already funded through NRDA will be excluded from potential funding in the Gulf Coast Ecosystem Restoration Science Program, and vice versa.

Program Framework

The purpose of the NOAA Gulf Coast Ecosystem Restoration Science Program is to achieve an integrative, holistic understanding of the Gulf of Mexico ecosystem, as well as to support (to the maximum extent practicable) restoration efforts and the long-term sustainability of the ecosystem, including its fish stocks, habitats, and fishing industries.

The Program is being developed with several guiding principles in mind, including:

- Requiring an ecosystem approach, considering the entirety and connectivity of the system;
- Integrating and building on existing research, monitoring, and modeling efforts and plans (*e.g.*, NRDA science, Gulf of Mexico States' Centers of Excellence, Gulf of Mexico Research Initiative, Gulf Coast Ecosystem Restoration Strategy and associated Science Needs Assessment);
- Leveraging partnerships established among federal, state, academics, and NGOs, and develop new partnerships as appropriate;
- Working within a management and policy framework developed with other entities in the Gulf, including USFWS, the Commission, and FMC; and
- Designing a scalable and modular approach that adapts to funding availability, defines the unique roles and responsibilities of NOAA and avoids duplication with federal, state, academic, and NGO activities or NRDA science efforts.

The Program's emphasis is on conducting and synthesizing science, observations, and monitoring to provide useful information that improves understanding and management of the Gulf of Mexico ecosystem, enhances restoration projects, and supports sustainable fisheries.

Program Focus Areas

To address the broad science categories articulated in the RESTORE Act (marine and estuarine research; marine and estuarine ecosystem monitoring and ocean observation; data collection and stock assessments; pilot programs for fishery independent data and reduction of exploitation of spawning aggregations; cooperative research), NOAA first consulted the numerous documents developed in recent years that identify a wide range of science needs for the Gulf of Mexico, including the Gulf Coast Ecosystem Restoration Task Force's Gulf of Mexico Ecosystem Science Assessment and Needs (April 2012). Many of these reports were produced with extensive stakeholder input and in consultation with resource managers throughout the Gulf States. Based on review of these documents, and in response to Section 1604 of the Act, NOAA has initially identified the following goals, which are still considered draft pending input from the science community in the Gulf of Mexico:

- Support Healthy, Diverse and Resilient Coastal Habitats
- Support Healthy, Diverse and Sustainable Living Coastal and Marine Resources
- Support Sustainably Managed Fisheries
- Support Healthy and Well-managed Offshore Environments

- Support Healthy, Sustainable, and Resilient Coastal Communities able to adapt to a changing environment

Additionally, four focus areas have been identified by NOAA to ensure that the research, observations, science, and technology are coordinated, complement existing and future efforts (*e.g.*, NRDA science, RESTORE Council), and address the critical knowledge needs facing the Gulf of Mexico ecosystem restoration and management in an integrated and holistic manner. These focus areas are:

- Periodic “State of health” assessments for the Gulf, incorporating environmental, socio-economic, and human well-being information
- Integrated analysis and synthesis of data—Synthesis and analysis of existing and new data to understand interconnections, inform ecosystem perspective, and produce policy-relevant information
- Ecosystem processes, functioning and connectivity through integrative field/laboratory efforts to provide foundational information to support restoration planning and implementation and fisheries science
- Holistic approaches to observing and monitoring that encompass the next generation of observing and monitoring technologies, including those for fisheries and other natural resources, and data integration tools focused on the observing needs in the Gulf of Mexico

Program Organization and Next Steps

NOAA has decided to house the Program within the National Ocean Service’s National Center for Coastal Ocean Science (NCCOS). NCCOS’s experience running grant programs focused on pressing coastal and ocean issues, its experience working in the Gulf of Mexico, and its demonstrated ability to transfer the results of researchers to resource managers make it a logical home for the Program. An Executive Oversight Board and Advisory Working Group established under NOAA’s Science Advisory Board will keep the program connected to other research programs within NOAA and the larger science community. A Gulf-based director for the Program will keep the Program grounded in the region.

Development of the Program will be guided by application of the language of the Act to the science needs of the region as described by resource managers, researchers, residents, and other stakeholders. Given that the amount of funds to be made available and the science priorities of other programs established under the Act have yet to be defined, NOAA envisions that its science investments will evolve over time, adapting to changing information and knowledge. As noted previously, considerable work to identify science needs has been conducted in the region and provides an opportune starting point to frame an investment strategy. With additional engagement of partners in the region, NOAA will develop a science plan that seeks to achieve a holistic understanding of the Gulf of Mexico ecosystem that will contribute significantly to the science needed for the long-term sustainability of the Gulf of Mexico ecosystem, including its fisheries, and help inform restoration and management efforts.

NOAA is following a series of steps to implement the Program including:

- Conducting a review and assessment of science needs to support sustainability of the Gulf of Mexico ecosystem that have been determined previously;
- Developing a Science Plan framework that describes the program and lists a set of draft Goals for consideration to assist engagement with partners and stakeholders;
- Engaging partners to identify and prioritize ecosystem and management science requirements and gaps, including but not limited to coordination with other Trust Fund recipients;
- Identifying strategic early investments to assist the integration and synthesis of science priorities and to address known priority gaps;
- Conducting competitive processes for issuing awards for addressing the science needs;
- Continuing refinement of Science plan in coordination with partners through the life of the Program.

The Gulf Coast Ecosystem Restoration Science Program represents an opportunity and capacity to help integrate the disparate science efforts across the Gulf into something that will advance overall understanding of the Gulf of Mexico as an integrated ecosystem—not business as usual. The program will contribute to the science needed for the long-term sustainability of the Gulf of Mexico ecosystem, including its fisheries, and help inform restoration and management efforts. NOAA, with

USFWS, has established a program with appropriate oversight, coordination and engagement mechanisms to help ensure maximum leveraging of resources to meet overall science needs and reduce duplication of effort. This includes explicit efforts to connect with the State Centers of Excellence and other science components of RESTORE, the National Academies of Science Gulf Program, NRDA, and existing Federal and state science and technology programs. NOAA is working with stakeholders and our partners to ensure that this program meets the objectives identified by Congress and to carefully coordinate our efforts with other science programs to obtain the best, most valuable science for the funding that has been dedicated to the Gulf Coast Ecosystem Restoration Science Program.

The Gulf Coast Ecosystem Restoration Council

The following section describing the Gulf Coast Ecosystem Restoration Council is being submitted on behalf of the Department of Commerce.

The Department of Commerce recognizes that a strong and vibrant ecosystem is the key to the Gulf's future. We also recognize this unique and unprecedented opportunity to implement a coordinated Gulf region-wide restoration effort in a way that restores and protects the Gulf Coast environment, reinvigorates local economies, and creates jobs in the Gulf region; these actions will ultimately help to ensure the long-term environmental health and economic prosperity of the Gulf Coast region.

The Commerce Department recognizes that the RESTORE Act builds upon the foundation and the goals set by the Administration of restoring the Gulf Coast ecosystem and economy to a stronger place than before the *Deepwater Horizon* oil spill. Our goal and commitment is to ensure the long-term improvement and restoration of the Gulf Coast and its unique ecosystems. Under the RESTORE Act, we will focus on restoration that complements the ongoing NRDA process and other efforts. The RESTORE Act establishes the Gulf Coast Ecosystem Restoration Council (the Council) as an independent entity in the Federal Government to help restore the ecosystem and economy of the Gulf Coast region by developing and overseeing implementation of a Comprehensive Plan and carrying out other responsibilities.

The Commerce Department is honored to have been recommended by the Gulf Coast States and selected by the President to serve as Chair. We believe the Department is uniquely positioned to lead this effort because we bring together a diverse range of expertise and experience from across our bureaus, including NOAA's expertise in science-based natural resource restoration, The Economic Development Administration (EDA)'s expertise in sustainable economic development, and International Trade Administration (ITA)'s expertise in travel and tourism promotion, to help implement the integrated approach to Gulf restoration envisioned by the RESTORE Act.

Under the Department's leadership, the Council has been working to ensure that it is ready to move efficiently and effectively to implement a restoration plan once funds become available. Since its establishment, the Council has convened and established basic processes; assembled a transition staff; released *The Path Forward to Restoring the Gulf Coast: A Proposed Comprehensive Plan*² describing the Council's path to developing its restoration plan; hosted public listening sessions in all five Gulf Coast States with over 1,500 individuals in attendance to gather early input on the plan; and recently selected an Executive Director. As soon as funding becomes available, the Council intends to establish an office in the Gulf Coast region. Additionally, the Council has been addressing important issues upfront to help ensure that we do not cause unnecessary delays down the road. This includes addressing environmental compliance considerations and working to ensure regulatory processes associated with restoration projects are effective and efficient.

While the Council faces several challenges, including uncertainty surrounding the ultimate amount and timing of funding that may be available and no current dedicated funding to operate, the Council has been able to make significant progress in a short time. The Council recently released its Draft Initial Comprehensive Plan (Draft Plan) and Draft Programmatic Environmental Assessment for public comment. The Draft Plan establishes overarching restoration goals for the Gulf Coast region; provides details about how the Council will solicit, evaluate, and fund projects and programs for ecosystem restoration in the Gulf Coast region; outlines the process for the development, review, and approval of State Expenditure Plans; and highlights the Council's next steps. The Council expects to release a Final Plan this summer. The Council will continue to build more detail into the Plan and its associated processes as existing uncertainties are resolved, ultimately leading to a comprehensive, region-wide, multi-objective restoration plan over time.

² 78 FR 32237 (May 29, 2013)

Conclusion

Thank you again, Chairman Nelson and Members of the Committee, for the opportunity to discuss NOAA's role in Gulf of Mexico restoration. I appreciate the Committee's time and attention, welcome any questions, and look forward to working with you further on this important effort.

Senator NELSON. OK.

And one of the things we want to emphasize here is that we want you to pay attention to the law. Remember what Senator Landrieu said; this thing was a balancing of competing interests. And what we want to guard against is an administrative agency going off on their own and adopting rules that do not follow the legislative intent and specifics of the law.

Ms. Jacobsen?

STATEMENT OF HON. RACHEL JACOBSEN, ACTING ASSISTANT SECRETARY FOR FISH, WILDLIFE, AND PARKS, U.S. DEPARTMENT OF THE INTERIOR

Ms. JACOBSEN. Thank you, Chairman Nelson, Senator Wicker, Senator Blumenthal. I am Rachel Jacobsen, Principal Deputy Assistant Secretary for Fish, Wildlife and Parks at the Department of the Interior.

I appreciate the opportunity to appear before the Committee today to testify on Interior's involvement in implementing comprehensive, meaningful, and long-lasting restoration of the Gulf of Mexico ecosystem using the funding obtained as a result of the *Deepwater Horizon* oil spill. I will summarize my testimony here and submit my entire statement for the record.

The natural resources in the Gulf region support a multibillion-dollar economic engine that employs more than 8 million people, produces more than half of America's domestic crude oil and natural gas, and accounts for the majority of the Nation's annual shrimp and oyster harvest. Hunting, fishing, bird watching, and other wildlife-dependent recreational activities contribute more than \$25 billion annually to the region's economy.

As the steward of an extensive network of natural resources within the Gulf of Mexico, the Department of the Interior understands fully the national significance of the Gulf ecosystem. We manage roughly 3.5 million acres in the Gulf region and 45 national wildlife refuges, 8 national parks, spanning from Brownsville, Texas, to the Florida Keys.

These lands support an array of biologically diverse habitats, including barrier islands, coastal marshes and estuaries, wetlands and beaches, all of which provide important habitat for millions of migratory birds as well as fish and marine species such as the Gulf sturgeon and Kemp's Ridley sea turtles. They also supply tremendous recreational opportunities, including boating, fishing, swimming, camping, hiking, and hunting. Many of our barrier islands serve as the first line of defense against storm surges and rising sea levels.

The explosion of the *Deepwater Horizon* drilling rig and the resulting oil spill dealt a devastating blow to this region. Given the spill's enormity, duration, depth, and complexity, the long-term injuries to natural resources caused by the spill are not yet fully

evaluated, but we do know that the impacts were widespread and extensive.

Full restoration of these critically important resources will be a massive and lengthy undertaking. However, Interior fully recognizes, without hesitation, that the time to begin restoration is now.

The Federal and state governments are working collaboratively to address injuries to natural resources resulting from the spill. And I want to particularly address our colleagues from Florida and Mississippi as part of that collaboration, including Trudy Fisher, who is here today. We have a terrific working relationship with all of our colleagues.

In our capacity as trustees under the Oil Pollution Act's natural resource damage provisions, we are undertaking the largest and most complex damage assessment ever initiated. But we are not waiting until that damage assessment is completed to begin restoration. On the one year anniversary of the spill, we secured from BP \$1 billion to fund restoration work now, prior to the completion of our assessment and prior to obtaining the full measure of damages through litigation.

As a direct result of this early funding, the trustees, with stakeholder input, have already begun to deliver restoration projects which would otherwise be years in the offing. To date, the trustees have completed the planning required by law on 10 projects, totally \$71 million, and have scheduled public hearings this summer, just in a couple weeks' time, on the planning efforts for additional suites of projects, totaling close to \$600 million.

Every single one of these projects required full agreement among all five states, the Federal agencies, and BP and were subjected to extensive negotiations. Importantly, by law, no project can be included in the final restoration plan or implemented without public input.

These early restoration projects will be spread across the Gulf region and will restore marshes, barrier islands, dunes, oyster reefs, and bird and turtle habitat. They will also enhance access to recreational and other human-use opportunities that were lost or diminished as a result of the spill. And we will not stop until the entire billion is obligated.

It is important to note that our early restoration efforts in no way affect our ongoing assessment work or our ability to recover from BP the full measure of damages needed for complete restoration.

Turning to the RESTORE Act, passage of the RESTORE Act provided a much-needed additional source of funding to help make the Gulf whole. The RESTORE Act established the Gulf Coast Ecosystem Restoration Council to help ensure that actions to benefit both the environment and the economy of this important region will be fully coordinated.

Interior is working with our fellow council members to implement the provisions of the RESTORE Act as Congress intended. With the recent publication of the draft initial comprehensive plan, the council stated clearly our intention to use our 30 percent portion of RESTORE dollars to fund ecological projects.

The Council explicitly recognizes that ecosystem restoration also revitalizes the region's economy by giving people desirable places

to live, work, and play and by providing resiliency through natural buffers that can help protect against storm and sea level rises.

In sum, we are faced with an unprecedented opportunity to bring about comprehensive, meaningful, long-lasting restoration to this vital ecosystem. We have a responsibility to the public to ensure that we make wise investments that are well-coordinated across the spectrum through all funding streams.

Interior will be a full and committed partner in these efforts. All along, we must ensure that the residents of the region and all stakeholders, including tribes, are fully engaged in these efforts.

Thank you again for this opportunity to testify before the Committee. I would be happy to answer any questions you may have. [The prepared statement of Ms. Jacobsen follows:]

PREPARED STATEMENT OF RACHEL JACOBSON, PRINCIPAL DEPUTY ASSISTANT
SECRETARY FOR FISH AND WILDLIFE AND PARKS, DEPARTMENT OF THE INTERIOR

Senator Nelson, Senator Wicker and Members of the Committee, I am Rachel Jacobson, Principal Deputy Assistant Secretary for Fish and Wildlife and Parks, at the Department of the Interior. I appreciate the opportunity to appear before the Committee today to testify on the Department of the Interior's (Interior) involvement in Gulf of Mexico restoration following the *Deepwater Horizon* oil spill (spill).

My testimony provides an overview of the actions we are taking to restore the Gulf Coast region with our Federal and state partners by participating in the work of the Gulf Coast Ecosystem Restoration Council (Council) established under the RESTORE Act. I am also going to summarize our efforts to develop and implement a Natural Resource Damages Assessment (NRDA) case, required under the Oil Pollution Act (OPA), through the NRDA Trustee Council; this Council includes representatives of the five Gulf Coast States and four Federal agencies including Interior, the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), the Environmental Protection Agency (EPA) and U.S. Department of Agriculture (USDA). Lastly, I will summarize our efforts to implement early restoration projects using the \$1 billion upfront commitment the Natural Resource Trustees secured with BP. This landmark agreement allows for restoration work to begin prior to the completion of damage assessment activities and prior to obtaining damages through a comprehensive settlement or through litigation. This early restoration agreement in no way affects our ongoing assessment work or our ability to recover from BP the full measure of natural resource damages needed to restore the Gulf resources injured by the spill. As a direct result, the Trustees, with sustained stakeholder engagement, have been able to begin delivering much needed and meaningful restoration projects in the Gulf Coast region which would otherwise be years in the offing.

Generally, with respect to the implementation of the RESTORE Act, we are in the very early stages of setting up the process and infrastructure for what will be a long-term program to restore the resources of the Gulf of Mexico and Gulf Coast region. The RESTORE Act carries forward the strategic planning and recommendations of the President's Gulf Coast Ecosystem Restoration Task Force and additional establishes the Gulf Coast Ecosystem Restoration Council, which is chaired by the Department of Commerce, as a mechanism to ensure that actions will be taken to benefit both the environment and economy of this important region. The Federal members of the Council are implementing the RESTORE Act with existing resources, notwithstanding the budgeting challenges associated with the FY 2013 sequester.

The RESTORE Act complements Interior's long-standing collaborative efforts with the Gulf Coast States to address some of their most difficult resource management issues, including the loss of coastal wetlands. We have been collaborating with Gulf Coast States through the Coastal Wetlands Planning Protection and Restoration Act Task Force, the Coastal Impact Assistance Program, and the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force (known as the Hypoxia Task Force), to name a few. We are continuing to work on these projects while ensuring that they are well coordinated with our new Gulf restoration efforts through the RESTORE Act and the NRDA case.

The Department of the Interior has extensive natural and cultural resource responsibilities and numerous land management units within the Gulf of Mexico re-

gion that are critical to the long-term health, economy and resiliency of Gulf Coast communities, and the Nation. We manage roughly 3.5 million acres in the Gulf region, on 45 national wildlife refuges and eight national parks from Brownsville, Texas to the Florida Keys. These lands support an array of culturally and biologically diverse habitats, including barrier islands, coastal marshes and estuaries, wetlands and beaches which collectively provide important habitat for millions of migratory birds as well as fish and marine species such as the Gulf sturgeon and Kemp's ridley sea turtles. The Gulf Coast region is home to 135 federally protected species, 98 of which are endangered and most of which are under Interior's jurisdiction.

The natural resources in the five Gulf States support a multi-billion dollar economic engine that employs more than 8 million people, produces more than half of America's domestic crude oil and natural gas, and accounts for the majority of the Nation's annual shrimp and oyster harvest. Hunting, fishing, bird watching and other wildlife-dependent recreation contribute more than \$25 billion annually to the region's economy.

But over the last century, climate change, sea level rise, coastal land subsidence habitat conversion and fragmentation, decreasing water quality and quantity, and invasive species have altered this historically productive system and diminished the natural resources of the Gulf of Mexico coastal ecosystem. These impacts are evidenced by the ongoing losses of Louisiana's coastal wetlands. Every half-hour, another wetlands area the size of a football field disappears into the sea, taking with it nature's best storm protection buffer and water filter. Every year, we see expanding "dead zones" as sediments, nutrients and other pollutants migrate down the Mississippi River as wetlands at the top of the watershed are being drained and converted to agriculture at unprecedented rates and agriculture soil erosion takes its toll. In Florida, excessive nutrients entering the Gulf from the Caloosahatchee River create massive algal blooms to the detriment of coastal fisheries. Recent hurricanes and the *Deepwater Horizon* oil spill exacerbated these impacts. In order to achieve a healthy Gulf of Mexico and Gulf Coast ecosystem, Interior supports the funding of effective conservation measures throughout the Gulf Coast region as critical to both the health of the environment and that of the regional economy.

Implementation of the RESTORE Act and Interior's Role as a Member of the Gulf Coast Ecosystem Restoration Council

The unprecedented magnitude of the *Deepwater Horizon* disaster created a unique opportunity for approaching the restoration of the Gulf of Mexico through a more effective comprehensive, and coordinated intergovernmental restoration effort. As one of the Federal members of the Gulf Coast Ecosystem Restoration Council (Council), Interior encourages the Council and its members to make a well-coordinated, ecosystem-level restoration our top priority. The Council just released for public comment its first draft Initial Comprehensive Plan and we look forward to finalizing that document this summer. The Initial Comprehensive Plan contains goals and objectives to address ecosystem restoration in the Gulf Coast region and outlines a process by which the Council will consider projects for funding. The Plan incorporates the strategy, projects, and programs recommended by the President's Gulf Coast Ecosystem Restoration Task Force. The Initial Comprehensive Plan will also serve as a guide for the Gulf Coast States as they develop individual spending plans required for the expenditure of the 30 percent portion of RESTORE Act funds that are allocated to States based upon a formula that considers the impacts of the *Deepwater Horizon* oil spill.

Because of the limited funds now available in the Gulf Coast Restoration Trust Fund, and due to the uncertainty of when additional amounts will be deposited into the Trust Fund, the Council elected to defer the statutory requirement for development of both a 10-year funding strategy and a three-year project list. In the meantime, the Council will seek public comment on our goals and objectives, as well as criteria by which the Council will evaluate projects.

The draft Initial Comprehensive Plan is based upon the findings and recommendations of the President's Gulf Coast Ecosystem Restoration Task Force. The draft Plan sets forth five overarching restoration goals, as well as a series of objectives that address the long-term environmental restoration needs of the Gulf.

The restoration goals identified by the Council include:

- Restore and conserve habitat;
- Restore water quality;
- Replenish and protect living coastal and marine resources;
- Enhance community resilience; and
- Restore and revitalize the Gulf Economy.

The Council's restoration goals are further amplified by a series of objectives that will guide the selection of projects. Interior fully supports the goals and objectives identified in the Initial Comprehensive Plan. We believe that by focusing the Council's investments in projects that restore and conserve habitat, restore water quality and replenish and protect living coastal and marine resources we will be enhancing community resilience and revitalizing the Gulf economy and promoting job creation.

For our part, Interior is promoting projects that reflect input from, and collaboration and planning with the Gulf Coast States and local communities, other Federal agencies, Landscape Conservation Cooperatives, tribes, and non-governmental organizations. We will also seek to prioritize projects that promote leveraging of funds and expanded opportunities for youth conservation corps and veterans.

Interior's contributions to the Council's priority project list for restoring the Gulf of Mexico are being organized around the following six principles: linking our existing network of conservation lands with other Federal and state conservation lands; restoring wetlands and aquatic ecosystems; restoring fresh water flow to support healthy coastal estuaries; protecting coastal and estuarine habitat; conserving forests and prairies; and managing lands and waters for sustainable populations of fish and wildlife.

We have been working closely with many organizations and individuals who have been working on these issues for decades and have an abiding interest in restoring the Gulf Coast. These organizations and individuals are bringing innovative ideas to the table for projects that may be funded through the various funding streams. We are also working within Interior with bureaus that have resources or other responsibilities in the Gulf, including the U.S. Fish and Wildlife Service (FWS), National Park Service, U.S. Geological Survey (USGS), and Bureau of Ocean Energy Management, to help identify projects that will assist us in achieving our goals.

As the Initial Comprehensive Plan is further developed, the Council will evaluate the restoration projects that further the plan's goals and objectives. Project selection will take into account the availability of funds. The Council will also need to consider other restoration actions that will be underway through NRDA recoveries under OPA and projects funded by the National Fish and Wildlife Foundation pursuant to two criminal plea agreements resulting from the *Deepwater Horizon* oil spill.

Interior, along with the Department of Commerce, is also working closely with the Department of Treasury on the development of the regulations to establish the Gulf Coast Restoration Trust Fund. We anticipate that those regulations will be published soon for public comment.

As prescribed by the RESTORE Act, Interior, through the FWS and USGS is also assisting NOAA in the development and implementation of the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Program. In partnership with NOAA, Interior has identified science and monitoring priorities to support, protect and restore trust resources. To support these priorities, we plan to build upon existing research, monitoring and modeling efforts and support database development in order to achieve a better level of organization and standardization across the Gulf watershed.

Natural Resource Damage Assessment

In the three years since the *Deepwater Horizon* oil spill, Interior, together with our co-trustee agencies in the Federal and state governments, has made significant progress to address injuries to natural resources resulting from the spill. The progress made by the Trustees is a direct result of an extraordinary level of collaboration and cooperation among the Federal Trustee agencies and the five Gulf States.

Through the NRDA process, natural resource trustees focus on identifying injured natural resources, determining the extent of the injuries, recovering damages from those responsible, and restoring the resources injured by the spill. Ultimately, the goal of the natural resource damage assessment is full compensation on behalf of the public from those responsible in order to restore the natural resources and services that were lost as a result of the spill.

The ongoing natural resource damage assessment for the *Deepwater Horizon* oil spill is the largest and most complex ever initiated. For our part, Interior employs many Gulf resource managers and scientists outstanding in their field and we remain steadfast in our commitment to complete the injury assessment in both a timely and cost effective manner. An accurate assessment of the injury will be essential to fully understanding the level of restoration required to restore the Gulf ecosystem back to pre-spill conditions.

On behalf of the NRDA Trustee Council, Interior and NOAA are currently leading roughly 95 percent of the assessment studies that are under various stages of completion. For our part, Interior is overseeing over 60 studies to evaluate injuries to

our trust resources such as endangered sea turtles, Gulf sturgeon, migratory birds, manatees, habitat for endangered species, and oiled beaches and wetlands on our National Park System Units and National Wildlife Refuges.

Early Restoration

At the same time the NRDA Trustee Council has been fully immersed in the injury assessment, we also have begun restoring the Gulf Coast with the \$1 billion provided by BP pursuant to the agreement known as *Framework for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill*, commonly called the Framework Agreement.

The Framework Agreement was adopted in April 2011, one year after the spill, when the Natural Resource Trustees and BP agreed that it was important to begin restoring the Gulf prior to either completion of the natural resource damage assessment or receipt of the full amount of NRDA recovery funds expected from BP. Under the terms of the Framework Agreement, the Trustees and BP have worked together to identify projects for the purpose of providing “meaningful benefits to accelerate restoration in the Gulf as quickly as practicable.” Early restoration of the Gulf is imperative.

It is important to note, however, that early restoration is not intended to provide the full restoration resulting from the spill, nor is it intended to fully satisfy the Natural Resource Trustees’ claims against BP. This is why the damage assessment continues unabated.

Although we are implementing these projects early before any of the other NRDA activities are complete, the projects are nonetheless subject to the requirements of OPA and its implementing regulations, and as such, must be published in OPA restoration plans. Interior is leading the planning effort required under OPA to implement these early restoration projects. Thus far, the so-called Phase I and Phase II Early Restoration Plans, announced on April 18, 2012 and November 8, 2012 respectively, together include 10 projects with estimated costs of approximately \$71 million. On May 6, 2013, the NRDA Trustee Council announced our intent to propose a Phase III plan for another suite of potential restoration projects totaling approximately \$600 million. We are working continuously to identify more early restoration projects until the entire \$1 billion is fully obligated. As part of that effort, just this week we published a notice in the *Federal Register* seeking public input (78 FR 33431 on June 4, 2013), and announced a schedule of public hearings in each Gulf state that will take place in the coming weeks to seek public input on all early restoration projects.

The Phase I projects that are underway will restore primary dune habitat in Alabama and Florida, coastal marshes in Alabama and Louisiana, oyster habitat in Mississippi and Louisiana, nearshore reefs in Mississippi and will provide enhanced recreational access in Florida. The Phase II projects will enhance sea turtle nesting habitat and protect beach nesting bird habitat.

An additional \$600 million will be used for Phase III projects in Texas, Louisiana, Mississippi, Alabama, and Florida. These projects are intended to focus on restoration of marshes, barrier islands, dunes, and near shore marine environments. This suite of projects will also include several projects to enhance access to recreational and other human-use opportunities across the Gulf Coast region.

This most recent group of projects—includes approximately \$15 million in funding to address natural resource injuries at Gulf Islands National Seashore, a National Park Unit, and \$72 million to address natural resource injuries at Breton National Wildlife Refuge which supplies critical breeding habitat for the brown pelican.

Throughout this process we have remained committed to engaging the public in the early restoration effort. The Trustees have sought the public’s input during early restoration planning through a variety of means, including requests for project proposals via public meetings and the web. In developing the first two early restoration plans, the NRDA Trustee Council held a total of 13 public meetings before finally selecting projects for inclusion in plans for Phases I and II. Our commitment to seeking robust public input as we plan for future early restoration projects is unqualified.

We have a unique responsibility to ensure we make wise investments that bring meaningful, long-lasting restoration to this vital ecosystem. Through continued cooperation with our fellow Federal and state agencies, Interior supports restoration of the natural resources that were injured by the *Deepwater Horizon* oil spill, as well as comprehensive restoration of the Gulf Coast region while ensuring the residents of the region, tribes and other stakeholders and interest groups are fully engaged in these efforts. As strong and supportive members of the Gulf Coast Ecosystem Restoration Council, we are working with our fellow Council members to implement the provisions of the RESTORE Act as Congress intended.

Senator Nelson and Members of the Committee, thank you for the opportunity to testify today. I will be happy to answer any questions you may have.

Senator NELSON. Mr. Trandahl, tell us about the criminal fines that your foundation has received. What are you going to use it for?

**STATEMENT OF JEFF TRANDAH, EXECUTIVE DIRECTOR,
NATIONAL FISH AND WILDLIFE FOUNDATION**

Mr. TRANDAH. Yes. Thank you, Mr. Chairman and Senator Wicker and Senator Blumenthal. I appreciate the opportunity to appear today.

As you may recall or may know, the foundation was actually created in 1984 by Congress. Congress established us in order for us to create public-private partnerships and do conservation around the country. We have been investing in the Gulf for about 20 years through the foundation and have done everything from working with fishermen to create economic vitality to protecting bird species throughout.

When the spill occurred, the foundation quickly reacted and got involved in all five states in order to protect wildlife resources but also to deal with those ecosystems that actually weren't directly impacted in order to make them as robust as possible so that once we got to this place of recovery that we would actually have the ability to hopefully recover much more rapidly within the Gulf.

As you may be aware, as well, we deal with a lot of mitigation funds at the foundation. Currently, I operate criminal funds of roughly 160 different accounts today. I have been at the foundation since leaving the Hill for seven and a half years, and we have run through literally several hundred.

Now, this one is a little different, in the fact that it is so large in scope, because we are dealing with the largest criminal settlement in history. At the same time, it is very much within the capacity of the foundation, in terms of being able to move that money.

The goals of the monies coming to the foundation is not for the foundation to dictate the objectives or the projects, necessarily, that would be funded. Our goal at the foundation is to be as effective, as efficient, and also as impactful on the ground as possible, and to turn to our state partners in order to identify what the priorities are, and then, as the plea sets out, to consult with my two Federal partners, NOAA and Fish and Wildlife Service, to make certain that those are overarching objectives within the Gulf, and then to move to my board for approval.

The thing to know is the BP settlement did put—and Transocean—put \$2.54 billion into the foundation. Now, those dollars come to the foundation from Transocean over a 2-year period, but the monies from BP come in over a 5-year period. We are only 3 months in from the money coming into the foundation, and that payment schedule is a hockey stick payment, where we will see the vast majority of the money in the fifth year.

The last 6 months, we have been working with the individual states and our Federal partners to talk through where they see the priorities and to develop unique systems in order for our foundation to be able to move forward the priorities, the grant-making, and the contracting as rapidly as possible.

I must say, we have been incredibly impressed with all five states. Trudy Fisher has done an outstanding job with Mississippi and working with our team in order to prepare Mississippi to come forward with a project list. Florida, Nick Wiley and Mimi Drew, continue to meet with us, as well. And, again, we are meeting in the next few weeks in order to make certain that they are ready to go.

We anticipate within a month that all five states will be giving us their first list of priorities, and then the process of consultation with NOAA and Fish and Wildlife Service will begin.

I always use the analogy that we are testing the plumbing in a new house. I would say probably none of us wish we were here, because of the oil spill, the loss of life, and the economic damage. At the same time, we sit here trying to make the best of a situation, and we are trying to get money on the ground as quickly as possible. We will rely very much on the states to help guide this prioritization and the individual project lists themselves.

And, at this time, I have to say that I think we are in a very good place to see action happen by the end of the year and monies literally be on the ground and work commencing on these project lists. But I am a little premature in saying that, for the simple fact that we are a few weeks out yet from receiving the project list requests from the states.

Thank you, sir.

[The prepared statement of Mr. Trandahl follows:]

PREPARED STATEMENT OF JEFF TRANDAH, EXECUTIVE DIRECTOR, NATIONAL FISH AND WILDLIFE FOUNDATION

Thank you for the opportunity to testify on behalf of the National Fish and Wildlife Foundation (NFWF) and our work to restore and protect the natural resources of the Gulf of Mexico region. NFWF was established by Congress in 1984 to foster public-private partnerships to conserve fish, wildlife, and their habitats. For almost 30 years, NFWF has developed a successful model of coordinating and leveraging public and private funds to address the most significant threats to fish and wildlife populations.

As one of the Nation's largest conservation funders, NFWF currently works with 14 Federal agencies, numerous state agencies, private partners, and our local grantees to implement on-the-ground and in-the-water conservation projects in all 50 states and internationally. NFWF's work helps to create and sustain abundant wildlife species and natural habitats that serve as both a source of enjoyment for all Americans and also an important driver of our Nation's economic health. Key elements of our approach include: (1) leverage, (2) efficiency, (3) partnerships, (4) transparency, and (5) measurable outcomes.

Since its inception, NFWF has leveraged nearly \$576 million in Federal funds into more than \$2 billion for conservation. In FY 2012, NFWF supported a total of 505 projects. We used \$42.6 million in Federal funds to generate an additional \$149.5 million in private funds and grantee matching funds for a total investment of more than \$192 million.

NFWF is governed by a 30-member Board of Directors that includes the Director of the U.S. Fish and Wildlife Service, the Administrator of the National Oceanic and Atmospheric Administration, and 28 private citizens, including several from states bordering the Gulf of Mexico.

NFWF's Response in the Gulf

Over two decades prior to the *Deepwater Horizon* oil spill, NFWF had invested more than \$128 million to support over 500 fish and wildlife habitat projects in the Gulf region. These projects were supported with Federal funds and private contributions from NFWF's corporate partners. In response to the oil spill, NFWF's experience in the Gulf region allowed us to take a leadership role in coordinating immediate efforts to minimize the impact of the oil spill on threatened fish, wildlife, and habitats and to bolster local wildlife populations to ensure their long-term survival.

NFWF immediately took action and has been working with government agencies, non-governmental organizations, private foundations, individuals, and corporations to protect and restore Gulf Coast fish, wildlife, and habitats impacted by the oil spill. NFWF launched the Recovered Oil Fund for Wildlife in 2010, funded with proceeds from BP's share of net revenue from the sale of oil recovered from the *Deepwater Horizon* site, and leveraged by working closely with some of our other corporate partners. For example, NFWF engaged Walmart to secure a commitment of \$2.25 million for NFWF-funded conservation projects on the Gulf coast and also worked with FedEx during the summer of 2010 to facilitate the transfer of 25,000 endangered sea turtle eggs from the Gulf coast to the Atlantic coast—one of the largest wildlife relocations in history.

To date, NFWF has invested \$22.9 million from the Recovered Oil Fund for Wildlife and other funding sources to bolster species and habitats affected by the spill, notably shorebirds, waterfowl, marsh birds, oysters, sea turtles, marine mammals and various fish species.

In other ongoing collaborations that directly benefit the Gulf, NFWF works with Southern Company on the Power of Flight Bird Conservation Fund, which protects birds through habitat and species restoration and environmental education; Shell Oil Company through the Shell Marine Habitat Program, which supports conservation of species and habitats; and the ConocoPhillips SPIRIT of Conservation Migratory Bird Program, which conserves threatened birds and their habitats around the world.

To implement wildlife and habitat projects in the Gulf region, NFWF has worked with diverse partners including Ducks Unlimited, The National Audubon Society, The Nature Conservancy, Sea Turtle Conservancy, Florida Wildlife Federation, Louisiana Wildlife and Fisheries Foundation, Alabama Wildlife Federation, Wildlife Mississippi, Texas Rice Industry Coalition for the Environment, U.S. Fish & Wildlife Service, Natural Resources Conservation Service, other Federal and state agencies, and other conservation organizations.

Overall, NFWF's collaborative projects in the Gulf have resulted in:

- creation of 500,000 acres of wetland habitat on agricultural lands to benefit migratory waterfowl and shorebirds;
- relocation of 25,000 sea turtle eggs in a collaborative partnership with FedEx and Federal and state resource agency partners;
- protection of critical migratory bird nesting sites on 30 islands and beaches;
- enhancement of 14 wildlife rescue facilities to treat injured marine mammals and sea turtles;
- restoration of 3.5 miles of oyster reef; and
- reduction in by-catch of sea turtles as well as valuable recreational and commercial fish (bluefin tuna and red snapper) by providing over 500 Gulf fishermen with special equipment.

BP and Transocean Criminal Settlements

In early 2013, the United States District Court for the Eastern District of Louisiana approved two plea agreements resolving certain criminal charges against BP and Transocean arising from the 2010 *Deepwater Horizon* oil spill. The plea agreements designate NFWF as the recipient of \$2.394 billion from BP and \$150 million from Transocean to be used for projects to “remedy harm and eliminate or reduce the risk of future harm to Gulf Coast natural resources.”

The requirements for BP and Transocean to pay these funds, as well as the usage restrictions applicable to the funds, were entered in Court orders that are enforceable as special conditions of probation. NFWF must look strictly to the plea agreements and these Court-ordered probationary conditions in determining how to properly administer the funds.

According to the plea agreements, the BP funds will be paid to NFWF over a 5-year period and the Transocean funds will be paid to NFWF over a 2-year period beginning in 2013.

The plea agreements require:

- 50 percent of the funding to be allocated for barrier island restoration and river diversion projects in Louisiana;
- remaining funds to be allocated by formula for natural resource remediation projects in the states of AL, FL, MS (28 percent each) and Texas (16 percent); and

- consultation with the Gulf state resource agencies, as well as the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Fish and Wildlife Service (FWS), to identify projects.

NFWF Gulf Environmental Benefit Fund

NFWF has a long track record of successfully managing funds arising from legal and regulatory proceedings that are designated to benefit natural resources. In the case of the BP and Transocean criminal funds, NFWF will carry out this function through its newly established Gulf Environmental Benefit Fund (Gulf Fund). As directed by the two plea agreements, NFWF will administer a total of \$2.544 billion to fund projects benefitting the natural resources of the Gulf Coast that were impacted by the spill.

Purposes

The underlying plea agreements specify a narrow purpose for the Louisiana-designated funds as compared to the purpose designated for funds in the other four states. In Louisiana, the funds may be used only “to create or restore barrier islands off the coast of Louisiana and/or to implement river diversion projects on the Mississippi and/or Atchafalaya Rivers for the purpose of creating, preserving, and restoring coastal habitat.” Selection of projects must take into consideration Louisiana’s Coastal Master Plan, as well as the Louisiana Coastal Area Mississippi River Hydrodynamic and Delta Management Study.

In the other four states, the funds must be used “to conduct or fund projects to remedy harm to resources where there has been injury to, or destruction of, loss of, or loss of use of those resources resulting from the Macondo oil spill.”

Consultation and Project Selection

As required by the plea agreements, NFWF has begun consulting with natural resource management agencies in each of the five Gulf States and with NOAA and FWS on the identification and prioritization of appropriate projects. All of the agencies with whom NFWF is consulting serve on both the *Deepwater Horizon* Natural Resource Damage Assessment Trustee Council and the RESTORE Council, and their input will be the primary means through which project selection under NFWF’s Gulf Fund will be coordinated with similar activities under the NRDA and RESTORE programs.

The specific state resource agencies with whom NFWF is consulting are: the Alabama Department of Conservation and Natural Resources, Florida Fish & Wildlife Conservation Commission, Florida Department of Environmental Protection, Louisiana Coastal Protection and Restoration Authority (CPRA), Mississippi Department of Environmental Quality, Texas Parks and Wildlife Department, Texas Commission on Environmental Quality, and Texas General Land Office.

NFWF will work to develop consensus among the state and Federal agencies in identifying projects that meet the conditions of the plea agreements and that maximize benefits for Gulf coast natural resources. When our state and Federal agency partners suggest projects that provide regional benefits, such as those crossing state boundaries or even potentially Gulf-wide, NFWF will work to facilitate inter-agency agreement on project design and funding strategies. However, even in the absence of consensus, NFWF retains sole responsibility and authority under the plea agreements to make final project funding decisions.

In addition to the primary criteria for project selection set forth in the plea agreements, NFWF will seek to identify and prioritize projects that also meet the following criteria:

- advance priorities in natural resource management plans, such as those called for under RESTORE;
- are cost-effective and maximize environmental benefits;
- are science-based; and
- produce measureable and meaningful outcomes for natural resources.

As it does in its other conservation grant making, NFWF’s decision-making will rely on strong, science-based evidence and the technical input from state and Federal resource agencies. In the aftermath of the oil spill, public agencies, universities, and other organizations have conducted, and continue to conduct, extensive research to improve the understanding of the Gulf of Mexico ecosystem and efforts needed to restore critical natural resources, enhance its resiliency and improve management. As this information becomes available, it will be used to further inform our decision-making.

The Gulf states are establishing websites where the public can suggest a project for consideration or learn more about the process each state has established, or will

establish, for identifying priority Gulf coast restoration projects, including those that may be candidates for funding through the Gulf Fund. As appropriate, deadlines may be set for project solicitations in individual states and this information will be provided on the state websites.

Payment Schedule

Over the next five years, the Gulf Fund will receive a total of \$1.272 billion for projects in Louisiana, \$356 million each for projects in Alabama, Florida, and Mississippi, and \$203 million for projects in Texas.

In accordance with the terms of the two plea agreements, payments into the Gulf Fund will occur over a five-year period in the case of BP and over a two-year period in the case of Transocean. More than half of the funding will arrive in years four and five. As payments are received, NFWF will segregate funds into accounts by state and plea agreement in accordance with the formula established by the plea agreements and will begin obligating the funds after the required consultations with state and Federal resource agencies.

As of May 2013, NFWF has received initial payments totaling \$158 million. NFWF currently is conducting intensive consultation with state and Federal resource agencies in order to identify the first slate of projects to receive funding. NFWF anticipates announcing the obligation of at least a portion of these funds to initial projects in the Fall of 2013.

	Payment (in millions of dollars)	Louisiana	Alabama	Florida	Mississippi	Texas
Apr. 2013	\$158.00	\$79.00	\$22.12	\$22.12	\$22.12	\$12.64
Feb. 2014	353.00	176.50	49.42	49.42	49.42	28.24
Feb. 2015	339.00	169.50	47.46	47.46	47.46	27.12
Feb. 2016	300.00	150.00	42.00	42.00	42.00	24.00
Feb. 2017	500.00	250.00	70.00	70.00	70.00	40.00
Feb. 2018	894.00	474.00	125.16	125.16	125.16	71.52
Totals	\$2,544.00	\$1,272.00	\$356.16	\$356.16	\$356.16	\$203.52

BP = \$2,394M

Transocean = \$150M

Conclusion

As we move forward with the implementation of the Gulf Fund, we will continue to work with our state and Federal partners to identify high priority projects that meet the requirements of the pleas and provide long-term restoration benefits to the Gulf of Mexico region. As stated, we are utilizing existing planning and prioritization efforts such as those required by RESTORE to deliver the funds without creating new and duplicative processes. Accountability and transparency are essential to the process and we are committed to obligating the funds entrusted to us in a timely and responsible manner.

As required by the pleas, NFWF will report annually to Congress, as well as to the Court and Department of Justice, on its activities with regard to the Gulf Fund. This will include a list and descriptions of projects and the funding required for them.

We look forward to continued input from key stakeholders, both public and private, to ensure the success of the Gulf Fund and its associated restoration projects.

Senator NELSON. As I turn to Senator Wicker for his questions, be thinking about and address how you are not going to double up and how you are going to coordinate with the Department of Commerce as they coordinate the council in making the decision on their projects, since your projects are going to come out of a different pot of money—

Mr. TRANDAH. Yes.

Senator NELSON.—and that is the pot of money that comes from the criminal fund.

Senator Wicker?

Senator WICKER. Thank you very much. And I must say, after this testimony by the first panel, I have a great deal of confidence that this is going to be administered by some very talented and thoughtful public servants.

Professor Schiffer, let me ask, you said it is going to take time. And you mentioned, I think, ten early restoration projects that are already under way. How is that going so far, and what is the nature of these 10 early projects?

Ms. SCHIFFER. That is an excellent question, Senator Wicker.

The ten projects which were identified by states and Federal agencies and then went through a process of restoration planning and opportunity for public comment include projects that are for marsh restoration, for some dune restoration projects. And there is a boardwalk, I believe, in Florida which is to compensate for the lost use of some of the beaches in Florida.

I would be pleased to provide you with a complete list, Senator Wicker, but that gives you some sense of the flavor of the projects.

Senator WICKER. All right.

And, Secretary Jacobsen, when do you think the natural resource damage assessment will be fully completed?

Ms. JACOBSEN. That is an excellent question, Senator Wicker.

The studies that are ongoing right now, and there are many, many, many of them, are very complex. As we get the data, and we are still collecting a lot of the data, we must analyze it, we must assess it, we must evaluate it. And we are moving as quickly as possible.

Of course, part of the issue with the damage assessment activities is funding. And, thus far, we have obtained our funding from two sources, either cooperatively through BP, which of course involves a layer of negotiations there, or by presenting our needs to the Coast Guard's Oil Spill Liability Trust Fund. They can also front the money for some of those studies.

So I would be careful to give you any exact timeframe for when that damage assessment would be completed. But, given that it is the largest and most complex undertaking, it is probably at least a couple of years away, I would say.

Senator WICKER. Do you have adequate funding for the assessment?

Ms. JACOBSEN. As of now, we do have adequate funding, in large part because, as I said, BP has provided the money and the Coast Guard fund has also helped us with the residual funding we need for other studies.

Senator WICKER. Thank you.

Mr. Trandahl, not every project will be selected.

Mr. TRANDAHL. Right.

Senator WICKER. Let me just ask that you work with the states, and if they are non-selected for certain projects, get back to them—

Mr. TRANDAHL. Oh, absolutely.

Senator WICKER.—with a “no” answer, too. And maybe work with us on other approaches. Is that fair?

Mr. TRANDAHL. Oh, that is more than fair. And I will jump in here with a coordination response, as well—

Senator WICKER. Please.

Mr. TRANDAHL.—or give you a little information.

As we develop project lists, it is not as if we would expect the state to just give us a final list. This is a bit of sausage-making. We will have our Federal partners and the states literally at a table with us as we are developing sort of the final list before it would ever travel up to our foundation board.

And in doing that, we are all going to be very honest and very direct, as these folks have all been with each other over the last two and a half years. Literally, everyone sitting at the table is attempting to get to the best and the fastest possible outcomes, in terms of getting this money on the ground and getting projects funded.

Because we are dealing with three different funding pools that have three different governing documents—these two, NRDA, and RESTORE has statutory guidance; and in the case of the foundation, we are guided by the plea—what we are doing, we are sort of the last to the table, which has advantages and disadvantages. The advantage is that—

Senator WICKER. Much like testifying last.

Mr. TRANDAHL. Yes, well—

[Laughter.]

Mr. TRANDAHL. And it is interesting, because, you know, NOAA and Department of Commerce and Department of the Interior and Fish and Wildlife Service have literally been engaged in these conversations with the states for two and a half years. And, in many ways, the individual states and I are able to take advantage of that, because they are also balancing which pools of money can effectively fund which projects and when.

So it is identifying the right funding area and then sequencing correctly and then making certain that we are not duplicating or contradicting in any way what we are all attempting to do here.

Now, literally, those conversations are going to become very intense with all this over the next month here, because we just have been able to finalize sort of the operating structure that our board will be working under and our staff will be working under, along with the individual states.

Senator WICKER. Well, thank you very much.

And thank you, Mr. Chairman.

Senator NELSON. Thank you, Senator Wicker.

Senator Blumenthal?

**STATEMENT OF HON. RICHARD BLUMENTHAL,
U.S. SENATOR FROM CONNECTICUT**

Senator BLUMENTHAL. Thank you, Senator Nelson.

And thank you for convening this very important hearing, which is of great interest to me, although Connecticut is located fairly far from the Gulf, because all of our states that are involved in importing or exporting oil or gasoline products potentially are at risk of this kind of disaster.

In fact, a little-known fact is that Connecticut's sixth-largest export is, in fact, oil. \$185 million in oil leaves the Port of New London every year. And we are the fifth-largest importer and exporter in dealing with gasoline and oil products in Connecticut.

So I think all of our states that are on the coast have a stake in the great work that you have done. And I want to join in Senator Wicker's observation, that I have increased confidence, in light of the testimony that I have heard and read, that these projects are being handled in a very thoughtful and deliberate way.

I have a question that I think goes to the heart of what lessons we can learn from the responses that came in the wake of the Gulf oil disaster. And it goes to the point that has been made here about the use of criminal restitution money as part of the settlement.

And I wonder whether there are increased possibilities for the use of money from other such environmental prosecutions in environmental protection projects. I know that the National Fish and Wildlife Foundation has a very longstanding record, even though it is an organization that has been in existence only since 1984, but in leveraging public dollars to gain more private dollars. I think the numbers are \$576 million that has been received from the Federal Government to leverage about \$2 billion in private monies.

Mr. TRANDAHL. Right.

Senator BLUMENTHAL. And criminal restitution funds could help in leveraging those amounts.

And I know that, Professor Schiffer, you have been involved in enforcing the environmental laws in the Department of Justice, and so you have an experience in this area.

Let me begin with you, Mr. Trandahl, whether you think that perhaps the Federal courts ought to be encouraged to devote more monies to the National Fish and Wildlife Foundation because you have a proven track record, you are a public-private partnership, and you have accomplished great work in more than 500 projects, I think, just this year alone—

Mr. TRANDAHL. Right.

Senator BLUMENTHAL.—involving exactly the same kinds of objectives and goals that are involved in the Gulf.

Mr. TRANDAHL. And, Senator, it is quite ironic, actually, because Rachel and I actually worked together at the foundation earlier, and Rachel was actually the attorney at the foundation that was responsible for helping us to create a strategy to do exactly what you are talking about, which was to work with the Department of Justice and the U.S. Attorneys in order to create a simple mechanism for them to be able to deposit funds at the foundation that we could leverage with other resources in order to do good conservation.

And the reason we embarked on that effort is a lot of these monies were falling into the Treasury or into special accounts, and the Federal Government really did not have the FTEs in order to be able to turn around and put the money back on the ground.

So you had a broken environmental situation, you had a very frustrated community, you had a company that had gone through a prosecution and a settlement potentially. And suddenly there wasn't action and activity happening on the ground to sort of move everybody beyond the incident and get the environment to a much better place.

So, literally, I asked Rachel to leave the Department of Justice and come over to the foundation so we could sweep together a strategy that would work. And what we have seen is a very dra-

matic shift at the Department of Justice and with the U.S. Attorneys' offices in order to use the foundation and really be able to build and create, honestly, the situation that we could use this mechanism with these Gulf moneys.

Senator BLUMENTHAL. Is that happening quickly and fully enough?

Mr. TRANDAHL. It is happening very rapidly. And I would say the confidence at the Department of Justice for them to allow us to use such a large fund here shows that it is highly endorsed within the U.S. Attorneys and the DOJ and the preferred method.

Senator BLUMENTHAL. Let me ask Professor Schiffer, how do you feel about how that—I know you haven't been in the Department of Justice for a while, but what is your impression?

Ms. SCHIFFER. Well, speaking with my NOAA hat, because we do have enforcement responsibilities at NOAA, as well, for a range of natural resource laws, we have been in discussions with the Department of Justice about how for criminal cases that we refer to the department we may be able to use some of the money for restitution under the standards of the Department of Justice, and we certainly would actively support that.

Senator BLUMENTHAL. Well, I would be interested in any more facts or suggestions that any of the folks here this morning may have in that regard. Because I know that enforcers, whether U.S. Attorneys or Department of Justice attorneys, across the country are often looking for places or organizations that can use this support in a constructive way to serve the goals that restitution is supposed to serve. And I think the more that we can make the Department of Justice aware and responsive to these concerns, using the Gulf experience as a model, the better a lot of the conservation and environmental protection goals will be served.

So thank you for your testimony this morning.

Thank you, Mr. Chairman.

Senator NELSON. Thank you, Senator.

Ms. Schiffer, I wouldn't be concerned if you or Kathy Sullivan were going to be the Chair of this Gulf Coast council, but that is still to be determined by the new Secretary of Commerce. And I want to make sure that you convey and this record reflects that we are going to insist in the implementation of the law that the legislative intent is followed.

For example, there is a part of the law that says that money will go into a separate pot to try to help the fish. Now, that is a simplified way of saying that part of our problem of knowing what to do under the Magnuson-Stevens Act on whether or not a fish population has been overfished is the fact that we are making decisions on out-of-date, old data, 6 and 7 years old.

And so this senator specifically put a pot coming out of the RESTORE Act there for money to do up-to-date assessments of the fish populations so that we can make correct decisions, which ultimately affects the long-term health of not only the Gulf but the waters off of Senator Blumenthal's state.

Now, there is another pot of money for centers of excellence. And with regard to the four states of the Gulf, they left it up to their state government to set up their centers of excellence. But with regard to the Florida pot of money under the centers of excellence—

and I will read and want the record to reflect what the statute says. Quote, "A consortium of public and private research institutions within the state, which shall include the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission, for that Gulf Coast state."

I couldn't put an earmark in it, but I could define it so that it specifically was going to go to the one unique research institution in the state of Florida, called the Florida Institute of Oceanography, which is a 20 private and public university consortium in Florida dedicated to research on the health of the Gulf and on the health of all waters around the state.

And so, as we are looking to the long-term health of the Gulf, which is one of the most important things, not only that we prevent disasters like this, but what do we know about what is happening to the Gulf and all that oil that is out there still sloshing around, maybe down at 5,000 feet, and the indicators by the two LSU professors on the killifish. What are the long-term effects on the Gulf?

Now, the big part of the money, of course, is going in those three pots, basically for the environmental, ecological, as well as the people's interest. And often what we find is that the environmental interest is also the people's interest because of what brings, for example, in a state like mine and Senator Wicker's, people to the Gulf to enjoy it, as people to enjoy their vacations and the wonderful natural environment.

Now, having said this little speech, I said it for a purpose: that I want you to convey, and I will do so likewise in the confirmation process of the new Secretary of Commerce, that we expect the intent of the law to be carried out and not somebody to suddenly get off on their own and decide, well, it is going to go to what they want. Because I bring you back to Senator Landrieu's opening statement. This was a balancing of the interests in trying to restore the Gulf and its people. And I want you to convey that, please, to the Department of Commerce.

As I said, Professor, if you were running it, having just heard my speech, or if Kathy Sullivan were running it, whom I have a great deal of personal confidence in, I wouldn't worry. But I don't know who is going to be the designated hitter. And so I want you to convey this.

Ms. SCHIFFER. Senator, I am pleased to convey back the thoughtful comments that you have made to the Department of Commerce, which has been designated as the Chair of the RESTORE Council.

I might also note as to, you have been talking about both of the science programs that were so thoughtfully made part of the RESTORE Act, as well. And for the NOAA science program that we have paid particular attention to, we have taken very seriously the intentions of the—and the legislative intent of the statute and have made great strides in implementing that program to act as a catalyst for taking science that is developed across all of these different pots of money to try to bring it together to better understand the ecosystems of the Gulf.

Senator NELSON. OK.

What we want to do, mindful of the time, we want to go on to the second panel. I want to thank you all for your contributions.

We are going to stay in close touch with you over the course of the years. Thank you for your public service.

And I invite the second panel to please come up.

And so, as they are being seated, we welcome Mrs. Trudy Fisher, the Executive Director of the Mississippi Department of Environmental Quality. And she will discuss Mississippi's priorities for RESTORE and NRDA.

We welcome George Neugent, who is the Mayor of Monroe County. Monroe, by the way, is the Florida Keys. And he will discuss the ongoing planning process in the Gulf consortium of counties.

We welcome Eric Draper, the State Director of the Florida Audubon. And he will discuss Audubon's role in early restoration.

And we welcome Dr. Stephen Polasky, who is Professor of Environmental Economics at the University of Minnesota, who will discuss the economic benefits from the ecosystem restoration. And he has done research on this very subject.

Now, I am going to limit you all to 5 minutes apiece, being mindful of the time. Your written testimony will be entered in the record.

And so we will start with you, Ms. Fisher.

**STATEMENT OF TRUDY D. FISHER, EXECUTIVE DIRECTOR,
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**

Ms. FISHER. Thank you. Good morning, Senator Nelson, Senator Wicker. Thank you for your kind comments and your opening remarks, Senator Wicker.

I appreciate the opportunity to be here this morning on behalf of the state of Mississippi. My name is Trudy Fisher, and I serve as the Executive Director of the Mississippi Department of Environmental Quality.

We are responsible for administering the state environmental programs and the Federal environmental programs administered by the Environmental Protection Agency and delegated to the states. In addition, our agency is a first responder to manmade and natural disasters. As Executive Director, I serve as Mississippi's trustee under the Oil Pollution Act.

Our emergency response to the *Deepwater Horizon* oil spill and our responsibilities as a trustee and trustee agency began very shortly after April 20, 2010. Since that time, we have been very actively engaged in the NRDA assessment process on behalf of our state through the Trustee Council. I currently have the privilege of serving as Chair of the Trustee Council.

I also have the privilege of serving as Governor Phil Bryant's designee on the RESTORE Council, and we are the lead agency for coordination of monies flowing through court decrees, including the sums administered by the National Fish and Wildlife Foundation's Gulf Beneficial Use Fund.

The prior panel and my colleagues set the stage very well for my comments, and I want to focus, Senator Nelson, on how the process is working in our state on how we are coordinating these three restoration funds and a little insight on the workings of the two councils and how we are making progress.

Though profoundly basic, the most important factor in our effort going forward with these multiple funding sources is that we get

it right. Getting it right means taking the necessary time, with an appropriate sense of urgency, to consider and resolve important issues and questions, most of which have never been addressed before or have never been addressed before on this scale. The word “unprecedented” has become a common modifier since April 2010, first in describing the spill and then in describing the challenges and opportunities that lie before us.

The energy we all share for tangible results must be tempered with the overriding goal of getting it right—getting it right through a science-based, transparent, collaborative approach. “Right” in this context means based on science, made in the full context of the concerns and reasonable expectations of our public, our local elected officials, NGO’s, tribes, state and our Federal elected officials.

Coordination and collaboration among the Gulf states and our Federal agencies have been essential to the degree of success we have had to date and is essential to the success we will continue to have. For well over 30 months, state and Federal trustees and staff have sat together monthly working through the NRDA process to assess injuries and to implement the early restoration framework agreement. As a result, strong bonds of shared understanding and effort have been formed and strengthened. Many of these relationships are replicated in the membership on the RESTORE Council.

Our newest funding partner in the restoration effort, the National Fish and Wildlife Foundation, offers the third leg to a critical integration of resources to leverage results in all five Gulf states.

I cannot overestimate the importance of this shared approach. It has fostered greater understanding across geopolitical boundaries, promoted a more holistic view of our Gulf, and created an interlocked path to restoration.

Though not seamless or without challenge, both of the councils have produced tangible work results to date. Now, like all joint efforts, they work best when everyone has common goals and objectives. Whether it is NRDA or RESTORE Council, the biggest challenges arise when a member state or Federal agency acts out of a singular interest rather than a common interest or strays from or stretches a basic reading of Federal law.

A second compelling component in getting this effort right is our willingness to make decisions. We have got to be prepared to make decisions to make progress. As one of our Federal partners has observed, we cannot afford to let great be the enemy of good. Many of the questions which face us in this effort are unique and of first impression. We have to be ready to wrestle with them, make decisions, and move forward.

In closing, I would like to focus on two discrete issues, one related to our understanding of the spill and the other related to the RESTORE Act.

The *Deepwater Horizon* oil spill had unprecedented impact on the environment and on the laws upon which address these events. It has revolutionized our science, innovated our approach to restoration, and stretched our thinking around the best ways to leverage the three funding sources we have before us.

The nature of this spill also brings into focus the lost human-use elements of the Oil Pollution Act on a scale never before seen in

environmental law. Simply put, as you heard from the prior panel, people could not walk out to the end of a pier and go fishing, get in their personal boat, take a sunset cruise, and listen to the sounds of nature, jump in a kayak, pull out their pair of binoculars, and go bird watching, enjoy the beaches of Florida, go swimming, or engage in similar activities of enjoying our environment because of the oil spill.

Restoration projects which address these human-use losses do not diminish restoration of our ecosystem or our natural resource injuries, which are very significant. Restoration projects which address human-use losses make restoration complete, promoting both the use and appreciation of the whole range of natural resources across the Gulf environment.

My final comment concerns the Draft Initial Comprehensive Plan produced by the RESTORE Council the last few weeks, out for public comment. Public meetings began in the Gulf states earlier last week and will continue through the middle of this month. Public interest in the work of the RESTORE Council has been robust, just as we had all hoped, and we anticipate substantial comment. It is essential that we thoroughly review and consider the comments as we finalize the plan in keeping with the RESTORE Act.

As a state representative, I view the Act as an innovative and bold congressional statement on the importance of the five Gulf states in the thinking, planning, and action in restoring our Gulf. Much of what I have said about collaboration and decisionmaking will be important as we move forward from a draft plan to a final plan and, likewise, as the RESTORE Council considers the many other issues that we are facing.

We remain anxious to see the Treasury regulations. And, Senator Nelson, thank you for your comments at the beginning of this hearing.

We remain committed to Congress's vision of the RESTORE Act to create a meaningful state and Federal partnership in our efforts. While much remains to be done, this model marks a clear path to legacy-level results on behalf of the Gulf of Mexico, our Gulf Coast, and its people.

Thank you, Senator Nelson.

Thank you, Senator Wicker.

[The prepared statement of Ms. Fisher follows:]

PREPARED STATEMENT OF TRUDY D. FISHER, EXECUTIVE DIRECTOR,
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Good morning Senator Nelson and Senator Wicker, and Members of the Committee. Thank you for the opportunity to testify on behalf of the State of Mississippi on environmental restoration following the 2010 *Deepwater Horizon* oil spill and the successes and challenges in implementing the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast Act of 2012 (RESTORE Act).

My name is Trudy D. Fisher and I have served as the Executive Director of the Mississippi Department of Environmental Quality for over six years. Our agency is responsible for state environmental programs as well as most of the Federal environmental programs delegated to the states by the Environmental Protection Agency. In addition, MDEQ serves as a "first responder" for man-made and natural disasters. As Executive Director, I serve as Mississippi's Trustee under the Oil Pollution Act. Our emergency response to the *Deepwater Horizon* oil spill and responsibilities as a Trustee and Trustee agency began very shortly after April 20, 2010. Since that time, I have been actively engaged in the Natural Resources Damages Assess-

ment (NRDA) process on behalf of the State, through the NRDA *Deepwater Horizon* Trustee Council comprised of the five Gulf States and the four Federal trustees. I currently serve as Chair of the Council. I also serve as Governor Phil Bryant's designee on the RESTORE Council and MDEQ is the lead agency for coordination of monies flowing through court decrees, including the sums administered by the National Fish and Wildlife Foundation's (NFWF) Gulf Beneficial Use Fund.

The prior panel set the stage well for my comments. I will not spend time focusing on the different restoration efforts; rather, I will focus on our state's perspective on putting these restoration pieces together.

Though profoundly basic, the most important factor in our effort going forward with multiple funding sources is that we "get it right". Getting it right means taking the necessary time to consider and resolve important issues and questions, most of which have never been addressed before or have never been addressed in an effort of this scale. The word "unprecedented" has become a common modifier since April of 2010, first in describing the spill and now in describing the challenges and opportunities which lie before us. The energy we all share for tangible results must be tempered with the overriding goal of "getting things right" through a science based, transparent, collaborative approach. "Right" in this context means decisions based on the law, based on science, and made in the full context of the concerns and expectations of our public, NGOs, Tribes, state and Federal elected and appointed officials. At the same time, the five Gulf States and the Federal agencies are interpreting laws for the first time or applying existing laws for the first time in a situation of previously unexperienced magnitude and complexity.

Coordination and collaboration among the Gulf States and Federal agencies are essential to any degree of success we have. For well over thirty (30) months, state and Federal trustees and staff have sat together monthly working through the NRDA process to assess damages to the natural resources of the Gulf Region. As a result, strong bonds of shared understanding and effort have been formed and strengthened. Many of these relationships are replicated in the membership of the RESTORE Council. Our newest funding partner in the restoration effort, the National Fish and Wildlife Foundation, offers the third leg to a critical integration of resources to leverage results in all five Gulf States. I cannot overestimate the importance of this shared approach. It has fostered greater understanding across geopolitical boundaries, promoted a more holistic view of the Gulf, and created an interlocked path to restoration. Though not seamless or without challenge, both of the Councils have produced tangible work results to date. Like all joint endeavors, they work best when everyone has common goals and objectives. Whether it is NRDA or RESTORE Council, the biggest challenges arise when a member state or Federal agency acts out of a singular interest rather than the common interest, or strays from or stretches basic reading of Federal law.

A second compelling component in getting this effort right is our willingness to make decisions. We must be prepared to make decisions to make progress. As one of our Federal partners has observed in many of our meetings, "we cannot afford to let great be the enemy of good." While many of the questions which face us in this effort are unique and of first impression, we must wrestle with them, apply our best thinking, and move forward. While all of our decisions must be based upon law and best available science, we must find practical answers to the questions of restoration, make decisions, and move forward.

I would like to focus on two discrete issues, one related to our understanding of the spill and our response and the other related to the RESTORE Act.

The *Deepwater Horizon* Oil Spill had unprecedented impact on the environment and on the laws which address such events. It has revolutionized our science, innovated our approach to restoration and stretched our thinking around the best ways to leverage multiple federal/state efforts. The nature of this spill also brings into focus the "lost human use" elements of the Oil Pollution Act on a scale heretofore unseen in environmental law. Simply put, people could not walk out to the end of a pier and go fishing, use personal boats to go take a sunset ride and listen to the sounds of nature, jump in a kayak, pull out a pair of binoculars and go bird watching, enjoy the beach, go swimming, or engage in similar activities of enjoyable use because of the BP oil spill. Restoration projects which address these losses do not diminish restoration of our natural resource injuries, which are very significant. They make the restoration complete, promoting both the use and appreciation of the whole range of natural resources across the Gulf environment.

My final comment concerns The Draft Initial Comprehensive Plan prepared by the Restore Council released last week for public comment. Public meetings began in the Gulf States earlier this week and will continue through the middle of this month. Public interest in the work of the RESTORE Council has been robust and we anticipate substantial comment. It is essential that we thoroughly review and

consider the comments as we finalize the Plan in keeping with the RESTORE Act. As a state representative, I view this Act as an innovative and bold Congressional statement on the importance of the five Gulf States in the thinking, planning, and actions which will restore the Gulf. Much of what I have said about collaboration and decision making will be important as we move forward from a draft plan to a final plan. We are going to have to coordinate our efforts as a Council, collaborate and make decisions. We remain anxious to see the Treasury regulations and we remain committed to Congress' vision of the RESTORE Act to create a meaningful state and Federal partnership in our efforts. While much remains to be done and many challenges still exist, this model marks a clear path to legacy level results on behalf of the Gulf of Mexico, our Gulf Coast and its people.

Thank you again, Mr. Chairman and Members of the Committee, for the opportunity to discuss MDEQ's role in the Gulf of Mexico and our Gulf Coast restoration. I appreciate the Committee's time and attention, welcome any questions, and look forward to working with you further on this important effort.

Senator NELSON. Thank you.
Mayor Neugent?

**STATEMENT OF HON. GEORGE NEUGENT, MAYOR,
MONROE COUNTY, FLORIDA**

Mr. NEUGENT. Thank you very much, Senator Wicker and Senator Nelson, for hosting this meeting. Thank you for the opportunity to provide testimony to the Senate Committee on Commerce, Science, and Transportation.

And thank you, Senator Nelson, for your participation in designing the unique and effective model of the RESTORE Act for the state of Florida and for the long-term environmental and economic recovery of the Gulf Coast following the tragic and avoidable *Deepwater Horizon* catastrophe.

I am the proud son of a father who, like so many that greatest generation produced, worked his whole life for the Texas Company, which became Texaco. I, too, like my father, worked in drilling and exploration for oil and gas off the coast of Louisiana. As a former oil hand, I truly understand the national significance of our energy resources. However, as one who now calls the southernmost out islands of the continental United States home, I am keenly aware of the potential damage that the uncontrolled release of oil can do to the environment.

Senators, a very strong message must be sent to those who would attempt to cut corners to save a buck while recklessly risking tragedy for others. And when events like *Deepwater Horizon* occur, the parties must be held responsible, both civilly and criminally, with prejudice for all damages they create.

Having lived my life on the Gulf of Mexico in both Louisiana and now Florida, I reflected on what I should say today. I was reminded how much the Gulf has been a part of my life. As a young boy going out to Terrebonne Bay to fish speckled trout and redfish with my dad and then sailing with my son from then-home, called Houma, Louisiana, to my now-home, the Florida Keys, 28 years ago.

Whether you live on Galveston Bay and Terrebonne Parish, Biloxi, Mobile Bay, or the Florida Keys, every community depends on good water quality and a healthy marine ecosystem for their future existence. Let me be very clear: Our economy is a wholly owned subsidiary of the environment.

National tragedies create unity. The 3-year-old *Deepwater Horizon* tragedy gives us an opportunity to reevaluate our efforts for marine conservation in the Gulf. While the full impact of the spill on the Gulf's diverse ecosystem will not be known for years to come, scientists tell us that spills of this magnitude will have profound, unknown effects for years to come. Such effects in Gulf coastal habitats are greatly exacerbated by decades of industrial-produced degradation of water quality.

Reckless activity exhibited by *Deepwater Horizon* had immediate and devastating effects on Florida panhandle economies. It is important to note Florida's degree of coastal vulnerability. With almost 770 miles of coastline on the Gulf of Mexico, we compose almost half of the combined coastlines of the five Gulf states. And although we are the only Gulf state that does not allow drilling and the only one that does not receive revenues, Florida is nevertheless exposed to the devastating effects of oil spills in the Gulf.

And it is because of this admitted negligence by BP and others that the RESTORE Act is so critically important to Florida. Implementation of the RESTORE Act in my state is unique in two key areas. Number one, resources from what we call the local allocation will flow directly to 23 individual Gulf Coast counties. This allows Florida's communities at the local level to determine the investments needed for environmental and economic recovery.

Number two, RESTORE also creates and forms the Gulf Consortium as a local consortia of political subdivisions directed under the act to develop the state expenditure plan. Florida's 23 Gulf Coast counties came together to legally form the Gulf Consortium and facilitate the development of the coordinated state plan that would enhance Florida's recovery through the prudent investment of 30 percent of the funds distributed.

This part of the RESTORE Act gave Florida a distinct opportunity to create a partnership between local governments and the state to oversee the money coming to Florida and ensure a coordinated approach to identifying and funding projects that are the most beneficial to our environment and economy.

To achieve this, the consortium is working with Florida's Governor and state agencies through a memorandum of understanding to advance common goals, reduce duplication, and maximize benefits to the Gulf Coast region. This multi-jurisdictional collaboration in the development of the state expenditure plan meets the spirit and intent of the RESTORE Act and underscores the commitment by the state, its local government, and its citizens to work together, not as silos but as a partner, for the full benefit of the entire coastline.

While we have accomplished much, there is still much to be done. The consortium is ready to implement formal guidance from the U.S. Department of Treasury, which is critical in our ability to move forward with development of a comprehensive restoration plan.

The consortium has made requests to Treasury that include: acknowledging the Gulf consortium as the consortia of local political subdivision, as specified in the RESTORE Act, and allowing for funds to be expended in the establishment of the consortium and planning costs allowed to be reimbursed.

Establishing the Gulf Consortium has required sacrifice and trust. We now stand ready to use the resources made available through the RESTORE Act to rebuild the Gulf Coast for the future of our families, who were tragically impacted and who depend on a healthy environment and economy.

On behalf of the 23 Gulf counties bordering the Gulf of Mexico and the Gulf Consortium and the fabulous Florida Keys, I would like to thank Senator Wicker and especially my senator, Senator Nelson, for convening this hearing and for stimulating thoughtful dialogue that can lead to collaborative and productive implementation of the RESTORE Act.

[The prepared statement of Mr. Neugent follows:]

PREPARED STATEMENT OF MAYOR GEORGE NEUGENT, MONROE COUNTY, FLORIDA

Introduction

Thank you for the opportunity to provide testimony to the Senate Committee on Commerce, Science, and Transportation. We appreciate Chairman Jay Rockefeller calling this hearing and Senator Bill Nelson's continued focus on effective implementation of the Resources and Ecosystems Sustainability, Tourism Opportunities and Revived Economies (RESTORE) Act toward the full and long-term economic and environmental recovery of the Gulf Coast following the Deep Water Horizon oil spill.

My name is George Neugent, and I appear before the Committee in my capacity as the Mayor of Monroe County, Florida, and as a member of the Executive Committee of the Gulf Consortium. While I have lived in the Florida Keys for more than 27 years and owned a small business there for many of those years, I was born and raised in Houma, Louisiana, and spent my early professional career in the petroleum industry addressing oil well fires and working on safety issues. My years living in the Florida Keys have been dedicated to the protection of the quality of our waters, serving for 14 years on the Florida Keys National Marine Sanctuary Advisory Council, and for more than a decade on the National Marine Sanctuary's Water Quality Protection Program Steering Committee. During my four-term tenure as County Commissioner, Monroe County has neared the completion of a \$900 million federally and state-mandated wastewater treatment infrastructure project spanning the entire island chain.

As a businessman, I understand the national importance of our oil resources, yet as a man who calls these environmentally-sensitive coral islands home, I am keenly aware of the need to guard against these types of disasters, protect and restore our natural resources and hold the appropriate parties responsible for the future of this country.

As with so many of our fellow coastal communities, the environment and the economy in the Florida Keys are inextricably linked. The unique marine ecosystem of the Florida Keys supports more than 6,000 species of fish, invertebrates and plants, including the largest documented sea grass bed in the world, and the only living coral reef in the continental United States. This unrivaled ecosystem provides the ecological foundation for a fisheries and tourism-based economy that generates more than 70,000 jobs and \$6 billion in economic activity annually.

The Keys' waters provide critical spawning habitats to a multitude of recreational and commercial migratory, endemic, coastal and pelagic finfish and shellfish, and unparalleled support to fisheries and essential habitats throughout the Gulf of Mexico. According to the U.S. Army Corps of Engineers, Monroe County's near shore waters alone provide habitat for 80 percent of the fish species in the United States. Most commercially valuable fish species depend on our near shore waters during their development. Key West, Florida, is the fifth most valuable port in the Gulf of Mexico, and the 20th most valuable commercial fishing port in the entire nation. In addition, the Florida Keys is the global center of recreational and sport fishing, with the highest number of recognized International Game Fish Association all tackle, saltwater line class, and saltwater fly rod "World Record Game Fish" records. Recreational fishing in the Florida Keys generates \$740 million in economic activity.

Protecting and restoring the Gulf of Mexico's resources is important not only for the environment, but also for the local, state and regional economies. Because of the RESTORE Act, we have an unparalleled opportunity to impact the environment and the coastal communities of the entire Gulf region for decades to come.

Deepwater Horizon Oil Spill and Impacts to Florida

On April 20, 2010 the explosion of the *Deepwater Horizon* Oil Rig resulted in more than 206 million gallons of oil, or 4.9 million barrels, spilling into the Gulf of Mexico for 84 consecutive days.

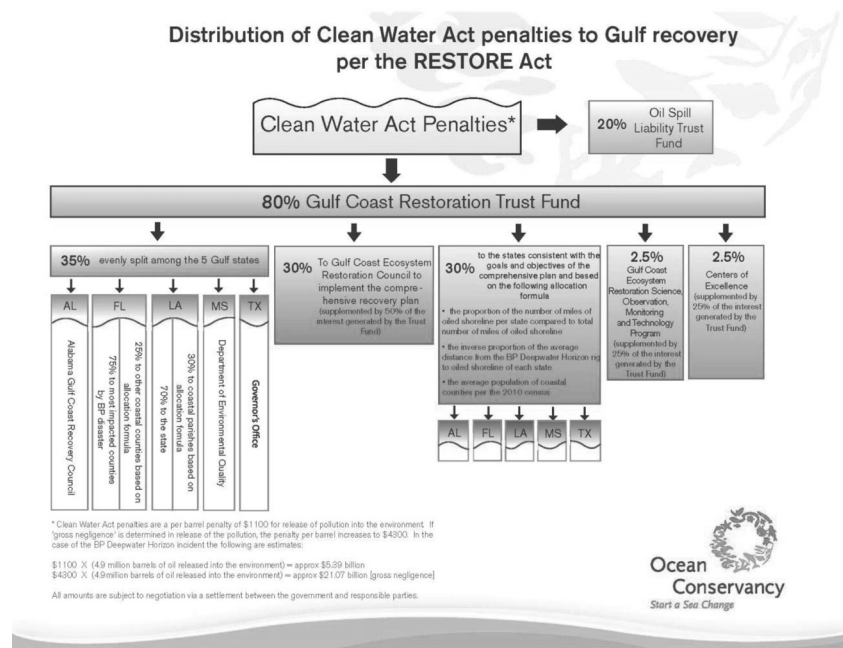
According to the Congressional Research Service, at the height of operations more than 47,000 personnel responded to the spill, which ultimately resulted in more than 1,100 linear miles of oiling including shoreline along Florida's panhandle. While cleanup efforts were extensive, it is estimated that more than 100 million gallons of oil remain in some form in the Gulf of Mexico. In Monroe County, it may be decades before the effects of the oil spill on the commercial and recreational fisheries of Florida Bay are fully known.

Immediately following the *Deepwater Horizon* tragedy, Florida's emergency response teams were required to operate under the Oil Pollution Act (OPA) of 1990, rather than the tried and true Federal Stafford Act, which is used for the response and recovery of natural disasters.

The emergency management system established by OPA was constrained by a unified command structure that was established outside of Florida entirely. To compound matters, communication from Unified Command was limited and rarely consistent from day to day. This left counties and parishes across five states with inadequate information and concerned that any preparation and response efforts would be too little too late. Because of limited communication from Unified Command, local communities were forced to expend significant financial resources preparing for a potential event that could neither be quantified nor predicted.

However, the good news in all of this tragedy was that it brought community and elected leaders across Florida's counties and the five Gulf states together. This bridging of elected and community leaders across Florida is now serving us well during the implementation of the RESTORE Act.

The RESTORE Act



During the *Deepwater Horizon* crisis, counties, parishes and five states joined together to provide an enhanced and cooperative response. Across geographical and political boundaries, our local communities, state agencies and elected leaders have remained in close collaboration to advocate collectively for a full and fair recovery. Because of the leadership in congress and communities across five states, in July 2012, the RESTORE Act was enacted. The Act directs 80 percent of any administra-

tive and civil Clean Water Act penalty revenue into a newly created trust fund to support environmental and economic restoration projects in the Gulf States.

The RESTORE Act establishes several allocations to various levels of government. Fine monies under the RESTORE Act are divided into five allocations. The first allocation provides an even split of 35 percent to each of the five states. Unlike Texas, Alabama, Mississippi and Louisiana where the funds are allocated to the state, in Florida, this allocation is distributed directly to those coastal counties impacted by the *Deepwater Horizon* disaster. The second allocation of 30 percent of fine monies is directed to the Gulf Coast Ecosystem Restoration Council to implement the comprehensive recovery plan, which is under development. A third 30 percent goes to each state according to a distribution formula. Again, Florida is unique in that this allocation is directed through the RESTORE Act to a “local consortia of political subdivisions.” The final two allocations direct 2.5 percent to Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology and 2.5 percent to Centers of Excellence.

The RESTORE Act in Florida

Implementation of the RESTORE Act in Florida is unique in two key areas. First, resources from the first allocation (35 percent of the Clean Water Act civil penalties distributed to the Gulf Coast States in equal shares) will flow directly to 23 individual Gulf Coast counties rather than through the state legislature or the governor. This allows Florida’s communities at the local level to determine the investments needed for environmental and economic recovery.

Unlike the other states, the RESTORE Act divides the Florida share of this allocation into two portions:

- 25 percent of Florida’s share directed to 15 non-disproportionately affected counties under a formula based on distance to the *Deepwater Horizon* event, population and sales tax collections.
- 75 percent of Florida’s share directed to Eight Disproportionately Affected Counties along Florida’s panhandle (Wakulla, Franklin, Gulf, Santa Rosa, Bay, Okaloosa, Walton and Escambia), with no formula specified.

Since a formula for the Eight Disproportionately Affected Counties was not included in the RESTORE Act, these counties joined together as a committee to develop a distribution that treats each county in a fair and proportionate manner. The formula determined by the eight counties distributes 20 percent of the funds equally among the eight counties. The remaining 80 percent is distributed based on oiled shoreline, per capita sales tax collections, population and distance from the *Deepwater Horizon* oil rig. The formula has been approved by the Boards of County Commissioners of each of the eight counties and now awaits review and endorsement by the U.S. Department of the Treasury.

The RESTORE Act requires public input as Florida’s 23 Gulf Coast counties develop their individual restoration plans under the first allocation. Most of the counties, including Monroe County, have convened local advisory committees to evaluate and recommend projects for funding under the local allocation to the Board of County Commissioners.

The Gulf Consortium

The second unique feature of RESTORE in Florida is the formation of the Gulf Consortium as the “local consortia of political subdivisions” directed under the Act to develop the State Expenditure Plan—a comprehensive economic and environmental restoration plan for Florida’s Gulf Coast. Florida’s 23 gulf coast counties came together to officially form the Gulf Consortium and facilitate the development of a coordinated state plan that would enhance Florida’s recovery through the prudent investment of 30 percent of the funds. This part of the RESTORE Act gave Florida a distinct opportunity to create a partnership between local governments and the state to oversee the money coming to Florida and ensure it is used to fund the projects that are the most beneficial to our state.

Formed through Inter-local Agreement under Chapter 163, Florida Statutes, the Gulf Consortium is a public entity that operates fully under Florida’s extensive sunshine laws. It adheres to Florida’s public records and public meeting requirements and recognizes the importance of public participation by ensuring that all meetings are publicly noticed and there is ample time for citizens to address the consortium and provide input and feedback for full consideration. Like a state agency, the Consortium will provide reports to the Florida Auditor General and Florida’s Chief Financial Officer. This state oversight is in addition to any rules issued by the U.S. Treasury for Federal reporting and auditing requirements.

The Gulf Consortium is comprised of one county commissioner from each of the 23 gulf coast counties. This guarantees each county, from Escambia in the panhandle to the Florida Keys, a role and a voice in the state's recovery efforts. The formal collaboration of 23 separate government entities—more than 115 elected officials representing 6 million people—recognizes that Florida and the Gulf Coast should not just survive this tragedy, but maximize resources and apply lessons learned to best benefit the state's environment and economy.

The Gulf Consortium is also working with Florida's Governor, state agencies and other restoration partners to advance common goals, reduce duplication, and maximize benefits to the Gulf Coast region. To this end, the Consortium and the State developed a Memorandum of Understanding to further our collective objectives of maximizing efficiencies and revenue opportunities under the RESTORE Act. This Memorandum, now approved by the Gulf Consortium and awaiting the Governor's signature, provides the Governor with six ex-officio, non-voting appointees to the Consortium representing diverse interests to provide input and guidance to the Consortium on policies and criteria used to determine projects, activities and programs for inclusion in the State Expenditure Plan.

Our collaboration with the state of Florida also provides for a Technical Working Group comprised of appropriate state agencies to review and provide input on projects considered for the State Expenditure Plan during its development. The Consortium, in conjunction with the Technical Working Group, will develop criteria for the submission and selection of projects. At a minimum, the selection of projects will include:

- A review for consistency with the applicable laws and rules;
- Prioritization based on criteria established by the Consortium;
- Consideration of public comments;
- Approval by an affirmative vote of at least a majority of the Consortium Directors present at a duly noticed public meeting of the Consortium; and
- State agency involvement, input and review in the development of a comprehensive restoration plan.

Involvement of Florida's Governor in the development and approval of the State Expenditure Plan meets the spirit and intent of the RESTORE Act and underscores the commitment by the state, its local governments and its citizens to work together, not as silos, but as partners for the full benefit of the entire coastline.

Such collaboration takes time. Bringing 23 counties and the state of Florida together so that political and practical considerations are addressed is not easy. But building the right foundation—which we have now done—will allow us to better serve our citizens and, most importantly, invest these critical dollars in a collaborative, transparent and quality way.

Opportunities and Challenges for the Gulf Consortium

The Gulf Consortium was formed to promote a recovery effort that is economically efficient and devoid of bureaucracy. Local input is imperative to this process. As a county commissioner, it is my duty to advocate for the issues that are most important to my community, and my constituents will hold me accountable for my decisions.

Since the establishment of the Gulf Consortium, we have hosted monthly public meetings, receiving public input from non-governmental organizations and citizens and sharing science and data on the full ranging impacts of the oil disaster, along with project and programmatic approaches to recovering our environment and economy.

Over the coming months, the Consortium will develop procurement rules and decision making protocols to develop the State Expenditure Plan, and while many challenges exist with so many interests, regions and entities, we are coalesced around the common goal of full environmental and economic restoration for the state of Florida.

To enhance the integration of plans created under the different RESTORE allocations, the Consortium is also coordinating its efforts with those of the individual local governments and the Gulf Coast Ecosystem Restoration Council. Advisory committees are being created in most Gulf Coast counties. Local projects and priorities are being presented to the members of the Gulf Consortium for consideration as the Consortium develops the State Expenditure Plan. In addition, the Consortium is fully participating in the public process associated with the Council's Comprehensive Plan, a draft of which was recently published.

By taking a coordinated and collaborative approach, we can prevent the duplication of effort and eliminate waste. With all of the right partners at the table, we

can maximize our investments so that as projects are determined for the Federal Council allocation, Natural Resource Damage Assessment (NRDA) process, State Expenditure Plan and individual counties, we can leverage available resources so that more projects are completed and recovery becomes a coordinated and thoughtful investment that will pay dividends well into the future.

Support from Federal Government

While much has been accomplished administratively, there remains a lot more work ahead. The Consortium is awaiting formal guidance from the U.S. Department of the Treasury, which is critical in our ability to move forward with development of the State Expenditure Plan. The Consortium has made specific requests regarding Treasury rules, including:

- Acknowledging the Gulf Consortium as the “consortia of local political subdivisions” as specified in the RESTORE Act;
- Allowing for funds expended in the establishment of the Gulf Consortium and development of the State Expenditure Plan to be reimbursed;
- Ensuring new rules solidify what is already in the RESTORE Act that state allocations and expenditures be distributed directly to the appropriate county; and
- Accepting the formulas and methodologies adopted by the eight disproportionately affected counties regarding those funds appropriated directly to our local communities.

Finally, the projects undertaken will require local and state permitting, and some will also be required to meet Federal regulations. We ask for your support in eliminating bureaucratic barriers and streamlining these Federal requirements so that projects can advance quickly and recovery can be completed in a timely manner.

Conclusion

National tragedies create unity. It is what makes America great—we put aside political and cultural differences and join around one common good.

In Florida, we are all too familiar with response and recovery. Hurricanes are common; we are prepared and respond and recover quickly and effectively. The *Deepwater Horizon* Oil disaster was different. Response and recovery was in the hands of others. Preparations were not as extensive and were instead replaced with fear—fear of the sheer magnitude of the disaster and fear of the unknown. What are the long-term environmental and economic implications of spilling 206 million gallons of oil in such a valuable ecosystem?

Unlike our seamless response to hurricanes, the response to *Deepwater Horizon* was bumpy and disorganized. Yet now three years later, response is history and recovery remains. In the last three years, tourism has returned and our communities are rebounding. Yet questions still linger, tar balls continue to wash ashore and restitution is ongoing.

It is because of this that the RESTORE Act is so critically important to the Gulf Coast states and Florida. I would be remiss if I let another moment go by without giving our sincere appreciation to congress for passing the RESTORE Act and ensuring that those communities directly impacted by the oil tragedy are able to use these resources to ensure a full environmental and economic recovery. Thank you.

The RESTORE Act brings tremendous opportunity to Florida, and with that opportunity there is great responsibility. It is rare that local elected officials are able to make large investments in their communities; rare that we are able to take resources and consider state, regional and local projects to recover from tragedy while investing in the future.

It is because of the opportunity created by the RESTORE Act that Florida has taken the unique approach of forming the Gulf Consortium. Instead of 23 separate decision makers or 1 executive direction, we have developed a team. This team represents 6 million diverse Floridians. Politics remain sidelined.

The foundation we have built did not come easily. It required sacrifice and trust. But now the Gulf Consortium is ready to move forward and use the resources made available through the RESTORE Act to rebuild the Gulf Coast for the future of our families that depend on a healthy environment and economy.

Close

Senator Nelson and committee members, Monroe County and the Gulf Consortium would like to thank you for convening this hearing and for stimulating thoughtful dialogue that can lead to cooperative and productive implementation of the Federal RESTORE Act. We appreciate the invitation extended to Florida’s coast-

al counties to provide our perspective on this important issue, and we look forward to our continued collaboration.

Senator NELSON. Thank you, Mr. Mayor.
Mr. Draper?

**STATEMENT OF ERIC DRAPER, EXECUTIVE DIRECTOR,
AUDUBON FLORIDA**

Mr. DRAPER. Thank you, Presiding Member Nelson and members of the Committee, and thanks for the opportunity to speak.

I am Eric Draper, Director of Audubon Florida, which is the state program of the National Audubon Society, which has more than a million members across the country, long history of working to protect the Gulf of Mexico, at a very personal level, as you would know, Senator Nelson, my backyard swimming hole and yours.

I am pleased to be here today and particularly with you chairing the Committee. You are, of course, a champion of our Florida Everglades. And without your work and Senator Landrieu's, we would not have the RESTORE Act, which is so important to restoring the Gulf.

Few people can forget the images from a few years ago of birds struggling in an oily muck of waste oil. Thousands of birds died, but even more died from the actual cleanup efforts. The unintentional activity on the beaches during nesting season led to the destruction of a number of bird colonies, which is one of the reasons why it is so important that we work hard to maintain a diversity of nesting sites for shorebirds. And we will talk about that some today.

Some of the impacts from the spill were apparent immediately. We won't know the full long-term impacts and the effect of the trickling up in the food chain. Senator, you mentioned the killifish, certainly a bird prey fish also, and we are very concerned about what is happening in the food chain there.

Yet the Gulf's environment suffers not just from what happened with the Gulf oil spill but suffers from habitat alteration, erosion, and a number of other threats, including the loss of freshwater flowing from our rivers into our estuarine areas.

So when the disaster struck, one of the things that was just amazing is the number of volunteers that showed up. We at Audubon got over 30,000 volunteers who asked to go out and clean beaches and oiled birds. And, of course, the cleanup itself was controlled by BP with their contractors. But the crisis did create a network of people who are working even today to restore the beaches. It is that great outpouring of volunteer activity that really makes me excited about the future of Gulf cleanup.

The NRDA process, natural resource damage assessment process, did allow for some early investment of funds. My organization, Audubon Florida, was on the receiving end of some of those funds. And we are now using those NRDA funds to manage 19 different bird nesting sites throughout the panhandle of Florida. And I can tell you that on Memorial Day weekend it really mattered that we had a group of bird stewards out there helping to protect those nesting colonies from overeager beachgoers.

We want to recognize also the National Fish and Wildlife Foundation that took some funds from the oil skimmed from the water

during the cleanup. Some of those funds were granted to Audubon to buy at that time the privately owned Lanark Reef, which is the most important brown pelican nesting site on Florida's Gulf Coast. And that is now owned by National Audubon Society and managed for the benefit of those same brown pelicans that we saw in those awful pictures before.

NFWF is also responsible for distributing funds from the settlement under the criminal litigation. And we commend the foundation for working so closely with Nick Wiley, the director of the Fish and Wildlife Conservation Commission, in setting priorities for the state of Florida.

We thought the Gulf Coast Ecosystem Restoration Task Force did a good job at setting priorities, and we are glad to see that those priorities are being followed by the council: restoring habitat, water quality, replenish and protect our living coastal systems, and enhanced community resilience.

The Council has done a good job of holding public hearings. We have worked very hard to turn people out for those public hearings. There was one just the other night in Pensacola that was so well attended, and I think that people really enjoyed the experience of being able to make recommendations.

It is very important that the Council not only continue to hold that very public and transparent process but I think also call upon their willing partners in the nonprofit community. We have a lot that we can offer to the Council and a lot that we can do to help bring forth the success of the program.

I also want to commend Commissioner Neugent for the way that the consortium has moved forward. He described the consortium, and of course that consortium will help dictate the use of 30 percent of the funds that are coming to Florida. Governor Scott is appointing some members to that consortium also, and we expect that consortium to make the environment a strong focus of what they do.

Audubon is working closely with our environmental colleagues in Florida, the Wildlife Federation, the Nature Conservancy, the Ocean Conservancy, to support recovery efforts.

And we do have a vision that we would like to share, which is to treat the Gulf as an entire ecosystem and not a series of fragmented pieces that are cut up by state lines or by county lines. We think that by that approach we will best be able to help the environment.

And in Florida, as you very well know and have said so many times, the environment really is the economy in Florida. You just can't mistake that.

So, on behalf of the Audubon family and our Gulf-based members and conservation colleagues, I greatly appreciate you inviting me here today. And thank you very much for having me here.

[The prepared statement of Mr. Draper follows:]

PREPARED STATEMENT OF ERIC DRAPER, EXECUTIVE DIRECTOR, AUDUBON FLORIDA

Chairman Rockefeller, Ranking Member Thune, Presiding Member Nelson and Members of the Committee:

Thank you for the opportunity to testify regarding the progress on Gulf restoration three years after the *Deepwater Horizon* oil spill. I am Eric Draper, Executive

Director of Audubon Florida, the State office of the National Audubon Society. With more than 450 chapters across the country including 44 in Florida, and more than one million members, volunteers and supporters, Audubon has a long history of involvement in protecting and restoring the Gulf of Mexico and its coasts.

(A). Impacts of the Deepwater Horizon oil spill in Florida and throughout the Gulf

Few images are as iconic of the 2010 BP *Deepwater Horizon* disaster as that of birds struggling against oily muck. We now know that thousands of birds from dozens of species succumbed to the chemical mix during the months when the oil flowed unabated. Many thousands more no doubt have been and will continue to be adversely affected. These birds, and the Gulf of Mexico's ecosystems, not only were heavily impacted by the oil spill, but also have experienced decades of neglect and degradation. Available habitats for the birds in the Gulf have declined precipitously. Human alteration of the landscape, sea level rise, subsidence, reductions in water quality and habitat mismanagement have all contributed to a growing crisis.

In 2010 as the spill occurred, the Florida Legislature was holding hearings on a repeal of a longstanding prohibition on drilling in state waters. Today, along the western Florida panhandle, erosion events are still uncovering oil mats on beaches.

When recovery efforts got under way in Florida, areas marked with postings to protect nesting birds were mistaken as landing zones for helicopters or deposition areas for the Coast Guard for storing boom. Booms to protect the shoreline broke free and affected marshes on shore. These circumstances exacerbated the problems for wildlife already caused by the spill. Patrols searching for oil unintentionally caused seagrass bed scarring and beaches that previously prohibited driving to protect wildlife suddenly had frequent vehicular traffic used for monitoring and clean-up efforts. These impacts were made even more severe because the spill took place during the nesting season for Brown Pelicans, American Oystercatchers, Least Terns, Royal Terns, Laughing Gulls, Wilson's and Snowy Plovers and other shorebirds and water birds, as well as marine turtles. There existed a heightened risk that response to the spill would wreak havoc on nesting areas.

While some impacts were apparent immediately, we won't know the full long-term impacts of the spill for some time, as the effects continue to trickle up through the food web. Monitoring the long term impacts can be particularly difficult with regard to birds that span the hemisphere through migration because the point in their lifecycle when effects will be manifested cannot be determined with certainty. As a result, much of the conservation work that needs to be done must help buffer these populations, addressing the threats we do understand to help weather the impacts we can't anticipate or reliably predict.

The impacts of the *Deepwater Horizon* oil spill extended to Florida's economy, including the tourism and fisheries industries. Florida's economic sustainability relies on its \$67 billion tourism economy¹, \$5.2 billion wildlife viewing economy², and over 160,000 boating, fish and wildlife-related jobs³. Florida fishermen catch more than 84 percent of the Nation's supply of grouper, pompano, mullet, stone crab, pink shrimp, spiny lobsters and Spanish mackerel, a haul totaling more than \$200 million annually.⁴ The impact to this industry from the oil spill was severe but restoration of Gulf ecosystems would likely maintain and enhance current fisheries production.⁵ Tourism is at the heart of Florida's economy and images of oiled beaches caused a downturn in visitor rates throughout the state at the time of the spill and immediately after. A 2011 survey conducted by Dun & Bradstreet indicated that the oil spill in the Gulf of Mexico had the potential to impact 7.3 million businesses throughout Alabama, Florida, Louisiana, Mississippi, and Texas, affecting 34.4 million employees and \$5.2 trillion in sales volume.⁶

(B). Audubon's impact during the Deepwater Horizon oil spill

When the news of the *Deepwater Horizon* oil spill became public, more than 35,000 people contacted Audubon to volunteer to help clean oil off the beaches, monitor beaches for additional oil, and to act as bird stewards. While the cleanup was

¹ Gulf Coast Ecosystem Restoration Task Force—Appendix B.

² Florida Fish and Wildlife Conservation Commission (http://floridabirdingtrail.com/images/pages/wv_economics_report.pdf).

³ National Marine Fisheries Service (www.st.nmfs.noaa.gov/st5/publication/econ/2008/gulf_ALL_econ.pdf).

⁴ *Gulf oil spill's effects still has seafood industry nervous*. Craig Pittman, *Tampa Bay Times*, 4/13/13.

⁵ Harold F. Upton. *The Deepwater Horizon Oil Spill and the Gulf of Mexico Fishing Industry*. Congressional Research Service. February 17, 2011.

⁶ Dun & Bradstreet 2011.

conducted through contractors and volunteers were not used, these volunteers did help transport injured wildlife and monitor cleanup activities. This eagerness to lend support in a time of crisis has created a network bird habitat stewards who have continued this work and are strong advocates of restoring the Gulf ecosystems. In addition to organizing volunteers, Audubon Florida drafted protocols for protecting beach nesting birds and other fragile natural resources while undertaking clean-up efforts, which were subsequently distributed by the Florida Fish and Wildlife Conservation Commission.⁷ The guidelines included the need to leave natural debris undisturbed and to use only approved access points.

(C). Remedies Underway Since the Deepwater Horizon Oil Spill

(1). Natural Resources Damages Assessment

The Oil Pollution Act authorizes certain Federal agencies, states, and Indian tribes—collectively known as natural resource trustees—to evaluate the impacts of oil spills, ship groundings, and hazardous substance releases on natural resources. After this analysis takes place, a workplan is developed to determine restoration activities that best benefit the impacted natural resources and in this case, economic damages. In Florida, early ecosystem restoration projects have included many projects, the most significant of which for conservation have been coastal bird management and projects to protect sea turtles. Projects to improve the economy and make the coast more resilient have included boat ramps and sand dune restoration. Audubon Florida was the successful bidder on the Natural Resources Damages Assessment (NRDA) project to help manage coastal bird habitat at 19 sites in the Florida Panhandle, including posting protected areas for beach nesting birds, monitoring, surveying and stewarding these vulnerable sites. Stewardship is Audubon's signature management tool for these beach-dependent species wherein volunteers chaperone colonies on busy warm weather weekends, literally intercepting beachgoers before they disturb nesting birds, resulting in the death of chicks or eggs and ultimately colony failure. This project is slated to span 5 years and has a rigorous deliverable schedule. Audubon Florida is contracting with the Florida Fish and Wildlife Conservation Commission and Florida Department of Environmental Protection to use NRDA funds to monitor and manage shorebird nesting sites along Northwest Florida. Audubon's biologists work with public lands managers and with volunteers to collect data and recommend approaches to stewarding nesting sites. These actions help to recover bird habitat that was affected by the spill. During the recent Memorial Day weekend the presence of shorebird stewards limited, but did not stop all of the damage caused to shorebird colonies by human intrusion.

(2). Gulf Ecosystem Restoration Task Force

The Gulf Ecosystem Restoration Task Force (Task Force) was created by Executive Order 13554.⁸ In December 2011, the Task Force released its Gulf of Mexico Regional Ecosystem Restoration Strategy.⁹ The strategy focused on projects grounded in science that emphasized the increasing the resiliency of the Gulf through collaboration among state and Federal task force members. Audubon supported the work done by the Task Force under the leadership of its Executive Director John Hankinson as a scientifically sound and comprehensive approach to Gulf restoration. The task force set four overarching goals for Gulf Coast restoration and within those goals specified actions requiring immediate attention. The Strategy provided a foundation for partnerships of communities, states and Federal agencies:

- Restore and conserve habitat
- Restore water quality
- Replenish and protect living coastal and marine resources
- Enhance community resilience

The task force's leadership created an essential foundation for the important planning work now being undertaken by the RESTORE council governing disbursement of key funding from the RESTORE Act.

(3). Funding through the National Fish and Wildlife Foundation

Oil skimmed from the water during the cleanup was recovered and sold. Some proceeds from the sale of the oil were granted to Audubon Florida by the National

⁷<http://audubonoffloridanews.org/index.php?s=safe+tips+for+beach+cleaning&submit.x=0&submit.y=0> (Last visited June 3, 2013).

⁸Executive Order 13554 (President Obama). Establishing the Gulf Coast Ecosystem Restoration Task Force. October 5, 2010.

⁹http://www.epa.gov/gcert/pdfs/GulfCoastReport_Full_12-04_508-1.pdf (Last visited June 4, 2013).

Fish and Wildlife Foundation (NFWF) for the purchase of Lanark Reef, a privately held island that hosts the largest Brown Pelican nesting site along Florida's Gulf coast. The island also provides nesting for other shorebirds and is a major stopover and wintering site for migrating birds. NFWF is also responsible for distributing funds from a settlement under criminal litigation between the U.S. Department of Justice and BP. Lanark Reef is just one example of beneficial projects that can be funded through NFWF to restore the Gulf. In Florida, NFWF is working closely with our trustees and particularly the Florida Fish and Wildlife Conservation commission when setting priorities for funding.

(4). *The RESTORE Act*

The Resources and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act) was signed into law on July 6, 2012.¹⁰ This first of its kind legislation establishes the Gulf Coast Ecosystem Restoration Trust Fund within the U.S. Treasury that will control 80 percent of Clean Water Act Penalties paid by BP. The funds remain until expended and they are not subject to appropriations. Those funds will be distributed by a formula set in law with:

- 35 percent equally divided among the five States for ecological restoration, economic development, and tourism promotion. In Florida 75 percent of funds go to the 8 most affected counties, 25 percent of funds go to other coastal counties based on an allocation formula;
- 30 percent plus interest managed by the Council for ecosystem restoration under the Comprehensive Plan;
- 30 percent divided among the States according to a formula to implement State expenditure plans, which require approval of the Council;
- 2.5 percent plus interest for the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Program within the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA); and
- 2.5 percent plus interest allocated to the States for Centers of Excellence Research grants, which will each focus on science, technology, and monitoring related to Gulf restoration.

It was through the leadership of Senator Bill Nelson and other Gulf state Senators that this historic legislation was passed with the goal of returning Clean Water Act penalties to the Gulf states for efforts at restoring ecosystems and making the region more resilient. A recent bipartisan poll conducted by FM3 and Public Opinion Strategies shows that three-quarters of Gulf coastal voters (76 percent) favor using the money collected from the RESTORE Act primarily for restoration of beaches, wildlife habitat, coastal areas, rivers and other waters that affect the Gulf Coast. Voters across every major demographic subgroup of the electorate indicate a strong preference for using these funds for restoration of the Gulf's lands and waters, including solid majorities in every state.

a. The Gulf Ecosystem Restoration Council

The Gulf Ecosystem Restoration Council (Council) has been an excellent source of transparent public meetings about potential future restoration. The Council's draft plan for restoring the Gulf of Mexico has recently been released and is an important step in outlining objectives and the criteria for selecting restoration projects in the Gulf. Our members are participating in the field hearings. Audubon is grateful for the efforts of the Council in putting together this draft plan and we look forward to working with the Restoration Council to continue developing a comprehensive plan that realizes the vision of Congress and supports comprehensive ecosystem restoration.

b. Florida's State Trustees

Governor Rick Scott represents Florida on the Gulf Coast Ecosystem Restoration Council. The Florida Department of Environmental Protection and the Florida Fish and Wildlife Commission are responsible for service as trustees and for responding to impacts of the *Deepwater Horizon* oil spill along Florida's shoreline. These trustee agencies and state emergency management officials continue to coordinate with federal, state and local partners to ensure that any continued impacts to Florida's coastline are removed quickly and efficiently.

¹⁰Public Law 112-141, Title 1, Subtitle F (2012).

c. Florida's Gulf Consortium

In Florida, 75 percent of the equal-share allocation of funding from the RESTORE Act goes directly to the affected counties. And a consortium of local governments will recommend the use of the Impact Based Allocation. The Consortium is organized by the Florida Association of Counties and has representation from 23 affected counties and recently reached an agreement with Governor Rick Scott to allow the Governor to appoint additional members to the Consortium who will be able to review the final plan. The Consortium intends to prepare one plan that will serve as both the Consortium's plan for the impact-based State pot and the State plan to be used in the Council's decisions. The Consortium is accepting suggestions from the public to help develop a scope for the plan.

(D). A Vision for the Gulf

Audubon is working closely with the Florida Wildlife Federation, The Nature Conservancy, the Ocean Conservancy and the National Wildlife Federation to support efforts by the Council and state agencies to implement a Gulf restoration strategy. Our groups have made the following recommendations for all restoration plans:

(1). *Environmental Impact*

- The Florida plan should promote restoration and long-term health and sustainability of coastal habitats, fisheries, marine resources and vulnerable species—restoring natural ecosystem function to the maximum extent possible;
- The Florida plan should include regional projects that advance state priorities toward achieving identified restoration goals (e.g., water quality, land protection, living shoreline, bird, sea turtle, and critical fish habitats and populations) that enhance watersheds and estuaries along Florida's Gulf Coast;
- The plan should identify land acquisition projects that provide ongoing benefit to the Gulf of Mexico including projects that protect water quality and wildlife habitat, provide the public with new or improved outdoor recreation opportunities, and buffer military bases;
- The Florida restoration plan should include a significant marine resource protection focused on fisheries, habitats and wildlife to complement coastal restoration priorities;
- No project should be approved for funding that would result in further damage to Gulf ecosystems; and,
- Consideration should be given to restoration projects that incorporate strategic retreat from vulnerable coastal areas over those that would place additional infrastructure in hazardous locations.

(2). *Fisheries Management*

Strategic investments should be made in scientific efforts that provide for long-term sustainability of commercial and recreational fisheries. Marine restoration projects involving changes to fisheries management or investment in scientific initiatives should involve the input of fishermen and aim to maximize long-term sustainability of commercial and recreational fisheries and communities that depend on healthy resources. Efforts to restore coastal habitats compliment efforts to regulate and rebuild fish stocks.

(3). *Wildlife Resource Enhancement*

In addition to habitat acquisition, Florida's coastal wildlife requires management to restore their populations. RESTORE provides our state with an unprecedented opportunity to manage these species for population health, buoying the nature-based economies they support while diminishing their degree of imperilment and reducing the need for regulation. These projects also help ensure the sustainability of coastal recreational activities among vulnerable wildlife populations.

(4). *Community Resilience*

The extent to which projects reduce the vulnerability of communities to hurricanes and other disasters should be considered in project selection. Projects that restore and preserve marshes, wetlands, reefs and other coastal habitats can provide our best approach to mitigate storm surge, erosion and coastal flooding, and thereby help reduce insurance costs and disaster relief in the future.

(E). Gulf Restoration Project Recommendations

For Florida's restoration program to be successful, it is critical that a comprehensive, integrated ecosystem approach be the focus that strives for results that are greater than the sum of the individual projects by addressing everything from the watersheds supporting our estuaries, to essential coastal uplands, to the offshore

marine environment. In Florida, our ecology IS our economy, and we know that the integrity of the Gulf and its habitats supports our economic well-being. Restoration efforts yield huge economic benefits. For example, a 2010 study conducted by Mather Economics found a greater than 4 to 1 return on investment in funding for Everglades restoration based on benefits that include groundwater purification, real estate, park visitation, open space, commercial and recreational fishing and hunting, and wildlife habitat.¹¹ Other Gulf restoration projects would likely yield similar benefits.

Audubon Florida is focused on projects that protect and restore the integrity of the Gulf and its bird populations. Audubon's recommended projects in Florida are grouped into five categories:

- Large-scale land conservation to protect the watersheds that drain to the Gulf;
- Conservation of strategic parcels critical to the protection coastal bird species;
- Everglades restoration, to improve the quality, quantity and timing of fresh-water inputs to the Gulf including through the Caloosahatchee Estuary and Florida Bay;
- Habitat restoration to improve the condition of coastal habitat;
- Ongoing resource management and monitoring, because land acquisition alone cannot ensure the persistence of key species and habitat type.

(1). *Watershed-Scale Land Conservation*

Whether full or less-than-fee, these willing-seller acquisitions have been assembled from the Florida Forever ecological acquisition list as well as Federal inholdings and acquisitions to protect the integrity of Florida's national wildlife refuges and seashores. In addition to protecting wildlife, habitat and water quality, these places support vibrant resource-based economies and buffer military operations which are of substantial importance to local Panhandle economies.

Florida Forever Projects Relevant to Gulf Conservation, by County:

Bay	Bear Creek Forest (also Calhoun and Gulf)	Leon	Ayavalla Plantation
Bay	St. Joe Timberland (also Franklin, Gulf, Jefferson, Taylor, Wakulla, Walton and 4 others)	Levy	Caber Coastal Connector
Bay	West Bay Preservation area	Levy	Gulf Hammock
Charlotte	Charlotte Harbor Estuary (also Lee and Sarasota)	Manatee	Terra Ceia
Charlotte	Charlotte Harbor Flatwoods (also Lee)	Monroe	Coupon Bight/Key Deer
Charlotte	Hall Ranch	Monroe	Florida Keys Ecosystem
Citrus	Annetelliga Hammock	Monroe	North Key Largo Hammocks
Citrus	Florida Springs Coastal Greenway	Okaloosa	Shoal River Buffer
Citrus	Rainbow River Corridor (also Marion)	Pasco	Cross Bar/Al Bar Ranch
Collier	Belle Meade	Pasco	Green Swamp-Withlacoochee River Headwaters (also Lake and Polk)
Collier	Save Our Everglades	Polk	Green Swamp-Peace River Headwaters
Desoto	Peace River Refuge	Santa Rosa	Clear Creek/Whiting Field
Dixie	Lower Suwannee River and Gulf Watershed	Santa Rosa	Garcon Ecosystem
Escambia	Lower Perdido River Buffer	Santa Rosa	Wolfe Creek Forest
Escambia	Perdido Pitcher Plant Prairie	Sarasota	Myakka Ranchlands
Gadsden	Neal Land & Timber Apalachicola River Corridor (also Liberty and Calhoun)	Taylor	San Pedro Bay (also Madison)
Gadsden	Ochlockonee River Conservation Area (also Leon)	Wakulla	Dickerson Bay/Bald Point (also Franklin)
Jackson	Middle Chipola River (also Calhoun)	Wakulla	Upper Saint Marks River Corridor (also Leon and Jefferson)
Jackson	Apalachicola River (also Gadsden, Liberty and Calhoun counties)	Wakulla	Wakulla Springs Protection Zone (also Leon)
Jefferson	Wacissa/Aucilla River Sinks	Washington	Sand Mountain Econfina Creek Watershed (also Bay)
Jefferson	West Aucilla River Buffer	Walton	Seven Runs Creek
Lee	Corkscrew Regional Ecosystem Watershed (also Collier)	Walton	South Walton County Ecosystem
Lee	Estero Bay	Walton	Upper Shoal River

¹¹Mather Economics. 2010. *Measuring the Economic Benefits of America's Everglades Restoration*.

(2). *Additions, Inholdings, or Complements to Federal Lands*

St Vincent National Wildlife Refuge: St. Vincent Sound to Lake Wimico Ecosystem (Gulf and Franklin counties): The 40,000 acres south of Lake Wimico known as the St. Vincent Sound to Lake Wimico Ecosystem would afford water quality and quantity benefits to the Lake, as well as Apalachicola and St. Joseph bays and St. Vincent Sound, buffering ABNEER, Aquatic Preserve and public landscapes.

St. Marks National Wildlife Refuge: In addition to the Upper St. Marks River Corridor Florida Forever project, there are an additional four tracts that would help protect the Refuge and Apalachee Bay watershed:

- Sam Shine Tract (Wakulla County) 8,117 acres
- Five Smooth Stones Tract (Wakulla County) 930-acre easement
- JLT Tract (Wakulla County) 1,230-acre easement
- The Nature Conservancy Tract (Jefferson and Wakulla Counties), 7,699 acres

Strategic River & Bay Watersheds—DOD NW Florida Coastal Base Missions Knight Family Trust Choctawhatchee River and Bay Watershed (Washington County): This proposed 40,000-acre easement would complete the riparian public lands conservation corridor from Alabama to Choctawhatchee Bay, and preserve sandhill aquifer recharge areas feeding springs and major creek headwaters for both Choctawhatchee and St Andrews Bays.

(3). *Everglades Restoration*

Tamiami Trail Next Steps project (Miami-Dade): Bridging Tamiami Trail will remove the barriers to sheetflow that have dissected Sharkriver Slough. This slough historically began north of Tamiami Trail and continued all the way to the 10,000 islands region along the Gulf coast. Reconnecting this natural pattern and hydrating this region of the Gulf coast will prevent further salt water intrusion and improve habitat in this mangrove labyrinth.

C-43 Caloosahatchee Storage Reservoir (Lee): When Lake Okeechobee reaches high levels, large pulses of nutrient-rich freshwater are released to the east and west of the Lake and out to coastal estuaries, often resulting in a drought during dry years because of lack of storage capacity. This reservoir will provide storage in wet years to prevent discharges and a source of water during droughts or to be released during disasters. This benefits the estuary that is home to nearly 40 percent of Florida's rare, threatened and endangered species.

Cape Sable Canal Filling (Monroe): Twentieth century canals dredged through the marl ridge of Cape Sable exposed the cape's interior marshes and lakes to Florida Bay and the Gulf of Mexico. Incoming tides now push marine waters and sediments inland, increasing salinity and transporting sediments to lakes and marshes. Outgoing tides drain freshwater from marshes north of the marl ridge and transport sediments toward Lake Ingraham and Florida Bay, resulting in a substantial loss of coastal habitat. The expansion of these canals has exacerbated sediment deposition in the cape's open waters and is converting Lake Ingraham into a tidal mud flat. Plugging House Ditch, Slagle's Ditch and the Raulerson Brothers Canal will restrict tidal flow into the interior marsh, protecting it from further erosion, and reducing open water sedimentation.

(4). *Strategic Bird Habitat Acquisitions and Habitat Restoration Projects*

A handful of private coastal sites have substantial importance to imperiled beach-dependent bird species. Acquisition of the following sites would be strategic, if willing sellers can be identified:

Big Sabine, Escambia County: This University of West Florida inholding in Gulf Islands National Seashore on Santa Rosa Island has been proposed for development in the last year. Its high quality habitats would be better and more economically managed if conveyed or acquired and added to the National Seashore.

Shell Island, Bay County: Much of this barrier island is held by Tyndall Air Force Base and St. Andrews State Park, and is of vital importance to nesting, beach-dependent birds, especially state threatened Snowy Plovers. Platted but undeveloped lots present challenges to management of the island; their acquisition would help make management more economical and effective.

Smith Island, Wakulla County: This private inholding in St. Marks National Wildlife Refuge hosts substantial numbers of breeding pelicans and other waterbirds. Acquisition and conveyance to the National Wildlife Refuge would ensure its future for these species.

Hunter Property, Pinellas County: Acquisition of this private parcel on the southern boundary of Honeymoon Island State Park would help buffer the park and its beach-nesting birds from use to the south.

Habitat restoration projects include:

Alafia Banks Restoration (Hillsborough): Storms and ship wakes have eroded these waterbird rookery islands in Hillsborough Bay, jeopardizing habitat for the sanctuary's thousands of nesting pairs of 18 waterbird species. While 1,675 feet of erosion control structures have already been installed, another 5,125 feet are needed to protect this Globally Important Bird Area.

Greater Tampa Bay Rookery Island Restorations (Hillsborough, Pinellas and Manatee): A total of 3,250 feet of reef balls and/or wave attenuation devices are needed to stave off the catastrophic erosion of the following waterbird rookeries in West Central Florida: Dogleg Key, Sand Key Dune on West Bird Island, Dot Dash Bird Islands and Cortez Key Bird Sanctuary.

(5). *Resource Monitoring and Management*

Coastal Bird Perpetual Management Fund (Gulf-wide): The establishment of a coastal bird adaptive management investment trust fund, along with an accepted safe withdrawal rate, will provide long-term support for conservation strategies critical to long-term recovery of coastal bird populations. These include robust survey and monitoring efforts, posting nesting areas, predator control, and stewardship efforts to reduce disturbance. An investment trust fund of \$150-\$175M Gulf-wide could provide \$4.5-\$7M annually to supplement ongoing management and monitoring efforts.

Panhandle Watershed Monitoring: While the bays of Florida's peninsular Gulf Coast have the benefit of National Estuary Programs to monitor their health and coordinate restoration, the bays of the Panhandle have less coordinated support. As a result, volunteer partnerships have emerged around the Pensacola Bay, Choctawhatchee and St. Andrews basins, to monitor and safeguard watershed health. Funding support for long-term, coordinated and professionalized monitoring is essential to not only measure restoration progress, but determine the baselines still lacking for many Panhandle waters.

(F). Conclusion

Audubon is encouraging decision-makers to think like investors in the long-term sustainability of our coastal ecosystems. By implication that means investment in the economy, since the two are inextricable. The committee and Congress can encourage that long-term thinking. We will live with the impact of the spill for a long time, we need to make sure that penalties are used in a long-term way. A final and good example is Florida's Big Bend coast. The working forests between the St Vincent—St Marks and Lower Suwannee River National Wildlife Refuges have long fed our pulp and paper mills, provided jobs and been ecologically and hydrologically significant to fish and wildlife and estuarine habitats, both freshwater and estuarine. The Apalachicola, which suffers from reduced water flows, provides an example of why we should protect upstream freshwater resources. Funds spent on sustainable land uses upstream of our coastal estuaries may be the most important long-term investment. The southern pine forests that still inhabit so much land along the coast are part of what makes for fishing and ecotourism economies downstream.

On behalf of the Audubon family and our Gulf-based members and conservation colleagues, I greatly appreciate your consideration of our views.

Senator NELSON. Thank you, Mr. Draper.
Dr. Polasky, we welcome your expertise.

**STATEMENT OF STEPHEN POLASKY, FESLER-LAMPERT
PROFESSOR OF ECOLOGICAL/ENVIRONMENTAL ECONOMICS,
UNIVERSITY OF MINNESOTA**

Mr. POLASKY. Thank you very much, Senator Nelson.

I have recently served on a National Research Council committee on impacts of the oil spill on the Gulf, but just to make clear, the views I am going to say are my own and not necessarily those of the Committee. But I very much appreciate the opportunity to speak here today.

The Gulf of Mexico is an asset of tremendous value. It supports a multibillion-dollar tourism and recreation industry, provides a large fraction of the Nation's seafood, oil, and natural gas, and many other benefits.

However, the benefits generated by the Gulf of Mexico are currently at risk. Like careless investors who have failed to maintain vital plants and equipment, societal actions have degraded the natural capital of the Gulf, with negative impacts on the benefits it provides.

Now we have the chance to set things right. Under the RESTORE Act, we can reinvest in nature to ensure the recovery of the Gulf of Mexico so that it continues to provide benefits to current and future generations.

The *Deepwater Horizon* oil spill just over 3 years ago was the largest oil spill in U.S. history and led to fishery closures, oiling of coastal marshes, and declines in tourism. The oil spill showed in dramatic fashion the degree to which the health of the region, its economy, and community vitality are dependent on a healthy environment.

But environmental degradation in the Gulf is also the result of actions spanning decades. Human actions have vastly increased the flow of nutrients carried by the Mississippi River to the Gulf, leading to the formation of a large dead zone with little oxygen to support fish and other marine life. Navigation and flood-control projects have fixed the Mississippi River in its current path and channel large sediment loads out through the delta into the relatively deep waters of the Gulf, depriving coastal marshes of inflow of sediment and leading to erosion of those marshes.

For all of the damage and stress caused by the *Deepwater Horizon* oil spill, the oil spill has also led to an opportunity to reverse decades of decline in the Gulf of Mexico. The RESTORE Act provides much-needed capital for reinvestment in the Gulf. Wise investment of these funds will help ensure a recovery of the Gulf so that it continues to provide benefits to current and future generations.

Investing in the Gulf most closely resembles investing in infrastructure, in that it provides basic conditions under which it is possible to derive multiple benefits, much like building roads or ports allow many businesses to thrive.

For example, consider investments in the restoration of oyster reefs. Oyster reef restoration provides a number of benefits, including increased harvest of fish and shellfish that rely on oyster reefs for food or shelter, improvements in water quality, coastline protection from erosion and flooding from storms, as well as providing a harvestable supply of oysters and larvae that can be used to seed other areas.

While there are sometimes data gaps and other technical issues, ballpark estimates of values for these benefits can be generated. Though it can be difficult to get a complete and accurate accounting of all the benefits of restoring natural capital, even a partial accounting can show that the benefits of investing in nature far outweigh the costs.

The RESTORE Act provides a rare opportunity to invest in nature and revitalize the Gulf Coast, reversing decades of neglect and

the impacts of the oil spill. Investing wisely will bring numerous valuable benefits to people living along the Gulf Coast and the American public more generally. Making wise investments requires clear thinking, good science, evidence on what works, clear rules to guide investments, and strong leadership.

Investing in nature is not simply about making the environment whole; it is also about making the American public whole. Wise investments in nature will result in repayment many times over for current and future generations. And we need to do everything we can to ensure that we make wise investments on behalf of the American people.

Thank you very much.

[The prepared statement of Mr. Polasky follows:]

PREPARED STATEMENT OF STEPHEN POLASKY, FESLER-LAMPERT PROFESSOR OF
ECOLOGICAL/ENVIRONMENTAL ECONOMICS, UNIVERSITY OF MINNESOTA

“Restoring Nature’s Benefits provided by the Gulf of Mexico”

For the past several years, I have had the privilege of serving on a National Research Council Committee analyzing the Effects of the *Deepwater Horizon* Mississippi Canyon-252 Oil Spill on Ecosystem Services in the Gulf of Mexico. My views on restoration in the Gulf have been shaped by the rich dialog that has occurred in Committee deliberations. The views expressed in this testimony, however, are my own and do not represent the official views of the Committee.

The Gulf of Mexico is an asset of tremendous value to the 22 million residents of Gulf Coast and to the American public at large. The Gulf of Mexico supplies numerous benefits including a large fraction of the total value of fisheries in the US, beaches and other recreational opportunities that support a multi-billion dollar tourism and recreation industry, and approximately 30 percent of the oil and 20 percent of the natural gas produced in the US. Intact coastal ecosystems, such as mangroves and coastal marshes, also provide vital protection for coastal communities and infrastructure from storm surge generated by hurricanes and tropical storms in the Gulf.

The benefits generated by the Gulf of Mexico are currently at risk. Like careless investors who have failed to maintain vital plant and equipment and see a subsequent decline in productivity of their assets, societal actions have degraded the natural capital of the Gulf with negative impacts on the benefits it provides. Some of the degradation is the result of chronic long-term abuse. Human actions have vastly increased the flow of nutrients carried by the Mississippi River to the Gulf. This increase in nutrients has led to massive algae blooms. When the algae die, their decomposition consumes oxygen in the water leading to a large hypoxic zone with too little oxygen to support fish and other marine life. In previous times the Mississippi River periodically flooded sending silt and sediment laden waters through coastal wetlands. But navigation and flood control projects have fixed the Mississippi River in its current path to the sea and channeled the large sediment load of the river out through the Mississippi River Delta into relatively deep waters of the Gulf. Deprived of the inflow of sediments, the coastal wetlands of Louisiana have receded. It is estimated that there has been a net loss of approximately 1,850 square miles of wetlands. To put this loss in context, there are currently less than 10,000 square miles of coastal wetlands remaining so this represents a relatively large percentage loss of wetlands.

The *Deepwater Horizon* oil spill in April 2010, the largest oil spill in U.S. history, occurred on top of these chronic long-term impacts. The oil spill led to fishery closures, the oiling of 1100 linear miles of coastal marshes, and a major decline in tourism. The oil spill caused severe stress both on the environment and on Gulf Coast communities reliant on fisheries and tourism. The oil spill showed in dramatic fashion the degree to which the health of the region’s economy and community vitality are dependent on a healthy environment.

The worst impacts of the oil spill proved to be relatively short-lived. After a very tough year in 2010, by 2011 fisheries had reopened and tourists had returned. The ecosystems of the Gulf of Mexico, like its people, have proven to be resilient. But the long-term toll from both the acute damage of the oil spill and the chronic damages of other environmental changes is not yet fully known.

For all of the damage and stress caused by the *Deepwater Horizon* oil spill, the oil spill has also led to an opportunity to reverse decades of decline in the Gulf of Mexico. The Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act) passed by Congress in 2012 provides a once-in-a-lifetime opportunity to reinvest in the natural capital of the Gulf of Mexico. If we are good investors of the funds available under the RESTORE Act we can ensure recovery of the Gulf of Mexico so that it continues to provide benefits to current and future generations. It is important to emphasize that restoration efforts are good not only for environment but for lives of people who depend on a healthy Gulf of Mexico. Done well, these investments in restoring the natural capital of the Gulf will offer a high rate of return with benefits that far exceed the cost of investment.

Investing in restoring nature capital is not exactly the same as other more common forms of investment but there are many similarities. As with other forms of investment, the rate of return on investment depends on both the increase in the value of benefits generated by the investment and the cost of the investment. So, for example, the rate of return on investing in restoring coastal marsh can be found by calculating the increase in value from fishery productivity, coastal protection, and other benefits attributable to marsh restoration, divided by restoration cost. Restoring a healthy functioning ecosystem, such as a coastal marsh, makes it possible to improve performance in multiple dimensions (e.g., fishery productivity, coastal protection, recreation). Investing in nature often most closely resembles investing in infrastructure in that it provides the basic conditions under which it is possible to derive multiple benefits, much like the building of roads or ports allows many businesses to thrive. In the case of investments in natural capital, however, it can be difficult to link particular actions to particular results because of the complexity of large interconnected systems like the Gulf of Mexico. For example, the restoration of coastal marshes may have a positive influence on fishery productivity but this affect may be difficult to detect given changes in ocean conditions or freshwater inflow and nutrients caused by rainfall patterns hundreds of miles inland.

Attempting to estimate rates of return on investments in natural capital requires knowledge about how people benefit from nature and the likely impacts of any investment on the performance of natural systems. To better understand what is involved in calculating a rate of return for investing in natural capital, consider the example of investing in oyster reef restoration. Oyster reefs have been in significant decline in the Gulf and around the world. Oyster reefs are estimated to have declined globally by 85 percent. The Nature Conservancy recently led an effort to restore oyster reefs along portions of the Gulf Coast including a major effort in Mobile Bay. Oyster reef restoration provides a number of benefits including increased harvest of fish and shellfish that rely on oyster reefs for food or shelter, improvements in water quality from removal of nitrogen in water that leads to algal blooms and hypoxia, coastline protection from erosion and flooding from storms, as well as providing a harvestable supply of oysters and larvae that can be used to seed others areas. The majority of the value of the benefits of oyster reef restoration in Mobile Bay is due to increased coastal protection. The value of increased coastal protection provided by oyster reefs can be estimated either by calculating what it would cost to build bulkheads or other infrastructure that would provide the same degree of protection (called "replacement cost") or by calculating the degree to which oyster reefs would lead to diminished erosion and flooding and the reduction in damage to coastal properties that would result (called "avoided damage"). The contribution of the oyster reef in terms of fish and shellfish production requires estimating the increased productivity of various fish and shellfish fisheries along the net revenue from harvest. While there are sometimes data gaps and other technical issues, ballpark estimates of value for all of these benefits can be generated. Other benefits, however, such as the value of improved water quality, which are no doubt of great value to Gulf Coast communities, present more difficult challenges for estimating benefits in monetary terms.

In general, it is difficult to get a complete accurate accounting of all of the benefits of restoring natural capital. But often a complete accounting is not necessary to know that investing in natural capital is a good idea. Even a partial accounting can show that the benefits of investing in nature far outweigh the costs.

There are two other issues regarding restoring the natural capital in the Gulf region: a) the distribution of benefits from restoring natural capital, and b) restoring resiliency. First, while everyone is for restoring the Gulf in general, there are likely to be disagreements about specific investment plans ("the devil is in the details"). Restoration at particular locations along the Gulf Coast will generate benefits to specific groups and not others. For example, restoring oyster reefs in Mobile Bay will generate benefits for communities in and around Mobile Bay but may do little

to help communities elsewhere. There is a danger that the whole restoration process could get bogged down in disputes over distribution of benefits. It is important for the restoration process to get agreement up front, before restoration activities begin in earnest, on rules for ranking high priority investments as well as transparent guidelines for carrying out investments.

Second, the Gulf of Mexico is subject to natural disturbances, such as hurricanes, as well as human-caused disturbances, such as oil spills. Hurricanes, oil spills and other disturbances often result in the disruption of the flow of benefits (*e.g.*, loss of fishery productivity). Resilient systems are able to absorb disturbances and recover. Loss of resilience may lead to collapse of important system processes and make the system more susceptible to future losses of important benefits. Investing in restoration of natural capital will likely increase resilience and reduce the probability of sudden declines in benefits, like loss of oyster beds or fish stocks, with future disturbances.

The RESTORE Act provides a rare opportunity to invest in nature and revitalize the Gulf Coast, reversing decades of neglect and the impacts of the oil spill. Investing wisely will bring numerous valuable benefits to people living along the Gulf and the American public more generally. Making wise investments requires clear thinking, good science and evidence on what works, clear rules to guide investment, and strong leadership. Investing in nature is not simply about making the environment whole. It is about making the American public whole. Wise investments in nature will result in repayment many times over for current and future generations. We need to do everything we can to insure that we make wise investments on behalf of the American people.

Senator NELSON. Doctor, how big is that dead zone out in the Gulf?

Mr. POLASKY. It is a very large area. It depends year to year, depending on the inflow of nutrients coming down from states like my own. But it has in recent years been generally tending to be growing in size. At times it stretches most of the area off the state of Louisiana.

Senator NELSON. That large?

Mr. POLASKY. It has been a large area. I wish I had the exact figures of the square mileage, but it is a large area.

Senator NELSON. How far out does it go?

Mr. POLASKY. It tends to be in the, you know, kind of the shelf area and not go too far out into the main part of the Gulf. But it is a sizable area right off the coast.

Senator NELSON. So the shrimpers in Louisiana would have to go out far enough to get beyond the dead zone?

Mr. POLASKY. Yes. They have to go much further from port to go and get the fish or the shellfish.

Senator NELSON. How does the dead zone affect the bays and the food chain in the bays?

Mr. POLASKY. The dead zone is largely further out from—not quite so much in the bays. That tends to be where it is. But certainly the flow of nutrients and the change in the flow of sediments has clearly affected what it is going on in the bays in Louisiana and elsewhere.

Senator NELSON. So when you combine the dead zone with what is already going on because of the oil that came into the bays like Barataria, then you have a double problem.

Mr. POLASKY. Yes, it really is a double whammy. And that is one of the things that makes it difficult—you know, the NRDA people have a tough task, because understanding, you know, this has added insult onto injury.

And so what is the effect of the oil spill, what is the effect of ongoing actions that we have taken, starving the sediment, the flow of nutrients, and so forth. It is a combined problem.

Senator NELSON. What has happened over the years with so much of Louisiana's coastline being eroded that would then throw in a triple threat on the ecology of the area off of Louisiana?

Mr. POLASKY. So the starving of sediment has resulted in approximately a 20 percent reduction in coastal wetlands in Louisiana, about 1,800 square miles of wetlands. That is obviously of great importance for fish habitat, for the ecology, but it is also of great importance for the people of Louisiana. This is an important coastal protection zone, if you will, for storms for people who live further inland.

Senator NELSON. You are further in, Ms. Fisher, from this coastal evaporation that has occurred, but are you seeing any of this in Mississippi?

Ms. FISHER. Yes, sir, absolutely. In western Mississippi, Hancock County, and as we go eastward, we have had coastal erosion. And, actually, one of our early restoration projects that is out for public comment now, where we are partnering with NOAA, is that living shoreline project that is in part to address some of our erosion in Hancock County.

And to, if I could, just expand a little bit on the hypoxic zone, it also goes over eastward toward Mississippi. And we also have nutrient runoff all across the Gulf states from the rivers; it is not just the Mississippi River. And we will have hypoxic zones, little dead zones, that will come up throughout the summer in some years all across the Gulf of Mexico. So it is a compounded problem on the hypoxia, as well.

Senator NELSON. Mr. Draper, would you state for the record and the Committee, when you start to influence a part of the food chain, how that can ripple through all the critters in the Gulf?

Mr. DRAPER. Thank you, Senator Nelson.

I think that your example of the killifish is an excellent one, which is you could have a chemical accumulate within that particular fish and then would be taken up by the fish that eat those.

The killifish are the base of the food chain for a number of predatory fish, from tarpon to snook to lungfish, you know, the range of migratory fish that go through the Gulf of Mexico. And the same thing with the bird species; there are everything from least terns to pelicans preying on those fish.

So, of course, what we know about chemicals, they do tend to store in fatty tissue of animals and can ultimately be taken up by humans also.

Senator NELSON. And what might be the effect of oil that is still in existence down deep near the wellhead 5,000 feet below?

Mr. DRAPER. As we know, in Florida, we continue to see on our beaches reports of oil washing up still. And some of that is of course breaking loose from the bottom, but, also, with erosion that occasionally happens with the dynamic shorelines, great mats of oil are being revealed on the beaches themselves.

So I would expect that we will continue to see a negative impact from the oil on the food chain and on animals and people for years to come.

Senator NELSON. Do you have any evidence that the bacteria in the Gulf that gobble up oil, that those bacteria are able to do that as deep as 5,000 feet?

Mr. DRAPER. I don't have expertise on that, Senator. Sorry.

Senator NELSON. Professor, do you have—you are an economics professor.

[Laughter.]

Mr. POLASKY. I think that says it.

[Laughter.]

Mr. POLASKY. One of the things, though, on the Committee is, we did look at the effects into the deep Gulf, and it is an area where we really don't know what the effects are.

Senator NELSON. Mr. Mayor, are you satisfied that the money that is indicated that is supposed to flow through the formula in the RESTORE Act is going to get to the local counties as it was intended?

Mr. NEUGENT. Thank you, Senator Nelson.

We are never satisfied with how quickly it flows. It never seems to flow quick enough. And, of course, we sit in waiting for that money to start flowing.

However, I have to compliment the members representing the 23 counties of the consortium. We have worked very closely together and unanimously on all votes. It is amazing how 23 Gulf Coast counties can come together and stay focused on this effort.

And we have been working closely with the state, the Governor, and the agencies. I think just the other day a Memorandum of Understanding was signed by the Governor that makes us feel a lot more comfortable in working together with the state and with the Governor on addressing these issues.

And some of the other things that concern us very much are the rules from Treasury that we hope will streamline the process and will also recognize that we are funding presently out of our own pockets this process. And it is expensive, and we have some counties who are fiscally constrained with funds in the state of Florida.

So we feel good, but we could feel a lot better. And we certainly appreciate your focus and understanding of this process.

Senator NELSON. Under the Memorandum that you just referenced, what is the state's role in selecting projects?

Mr. NEUGENT. Well, we recently were asked to submit projects to DEP, the Department of Environmental Protection. And those projects have been submitted to address the pot number two, the Federal pot. And so we have established, along with other counties who are presently establishing local committees. But the funding issues certainly will remain an issue amongst the counties.

And, of course, that Memorandum of Understanding with the state is something that is very crucial to help create that flow of funds and address those particular projects that we are submitting.

Senator NELSON. In your consortium of 23 counties, you are going to put together a planning document. Is that under way, or what is the time?

Mr. NEUGENT. It is under way. The timing, I am not exactly sure when that will happen. We are meeting on a regular basis. Approximately every 2 months, we get together and discuss the particular issues. Doug Darling, our executive director, and working

through the Florida Association of Counties, has been very productive for us to continue moving forward. And we try to move forward based upon information that we get back from both the Federal level and the state level.

And I would like to compliment your staff, Senator Nelson. They have been more than helpful working with all 23 counties in the state of Florida.

Senator NELSON. Well, I want to thank all of you. I want to thank the first panel that is still here, and I want to thank the second panel.

This is most enlightening testimony. It is necessary testimony as we implement the RESTORE Act to try to get to, ultimately, restoration of the Gulf. Thank you.

The hearing is adjourned.

[Whereupon, at 12:41 p.m., the hearing was adjourned.]

A P P E N D I X

GULF COAST ECOSYSTEM RESTORATION COUNCIL
Washington, DC, May 1, 2013

Dear Council Members,

On behalf of our millions of members, we thank you for your commitment and your considerable ongoing work to help restore the environment and economy of the Gulf Coast region. Our organizations supported enactment of the RESTORE Act because of the unprecedented opportunity the Act presented to build a healthy Gulf ecosystem through environmental restoration projects, a need that grows more urgent each day. Given the extent to which the region's communities, industries and economies rely on a clean and healthy environment, environmental restoration projects are vital to restoring the economy and to protecting and enhancing the diverse natural resources of this unique and irreplaceable ecosystem.

In allocating fines paid under the Clean Water Act and specifying the ways in which the funds would be expended, Congress sought to balance the interests of the five Gulf Coast States and to ensure that the expenditures as a whole would address both the environment and economy of the region. With the trial still underway and further proceedings to follow, we of course do not know the total amount of funds that will be available to promote the goals established by Congress. We expect the amount to be sufficient to undertake significant projects in all five Gulf Coast States that should ultimately benefit the environment and economy of the entire region. We are also encouraged that the Council acknowledged in the *Path Forward to Restoring the Gulf Coast* that it will follow Congress' carefully crafted direction to fund these projects within the different explicit allocations in the statute.

Because the Comprehensive Plan, by statute, is to focus on environmental restoration projects, we write to provide our suggestions on activities that will make the greatest difference to the Gulf ecosystem. As you consider how best to "restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches and coastal wetlands of the Gulf Coast region," our organizations believe that you should focus first and foremost on major restoration investments in the Mississippi River Delta. Given the central importance of these resources to the overall health of the Gulf, and to economic activity regionally and nationally, we believe that, using best available science, an early start on a major Mississippi River diversion and acceleration of barrier island renewal in the Delta are necessary cornerstones of an effective Gulf-wide response to which we can all commit. Because restoration plans for the Delta are well-developed, they also provide a helpful framework for initiatives the Council considers in the other Gulf Coast States.

We appreciate the opportunity to provide the attached recommendations for consideration by the Council. Our recommendations focus on four areas: (1) Gulf-wide project prioritization criteria; (2) recommended projects in Louisiana, consistent with that State's Coastal Master Plan, that meet these criteria; (3) Council processes for project implementation; and (4) science integration.

The people of the Gulf are counting on meaningful environmental restoration to safeguard the natural resources on which they depend and to ensure a strong and healthy economy, now and for generations to come. We believe the attached recom-

mendations will advance your efforts to secure that positive future, and we look forward to working with the Council to provide further perspective and assistance.¹

Sincerely,

NATIONAL AUDUBON SOCIETY
 COALITION TO RESTORE COASTAL LOUISIANA
 ENVIRONMENTAL DEFENSE FUND
 LAKE PONTCHARTRAIN BASIN FOUNDATION
 NATIONAL WILDLIFE FEDERATION

I. Introduction

We represent a coalition of environmental groups that have worked for decades to restore the Mississippi River Delta. As the Gulf Coast Ecosystem Task Force recognized in its 2011 strategy, the Mississippi River is a driving force behind a sustainable Gulf Coast ecosystem. Sediment carried by the Mississippi River built Louisiana's productive wetlands, which are essential to the health of the Gulf ecosystem. However, river management decisions that prioritized flood protection and navigation have cut the river off from its delta, dooming existing wetlands and largely stopping the cycle of new wetlands growth. Indeed, Louisiana's coast, an area with great natural land building potential, experiences 80 percent of the Nation's annual coastal wetland loss and loses land at a rate comparable to a football field per hour. This vital and already compromised resource experienced hundreds of miles oiled shoreline and marsh from the *Deepwater Horizon* spill and, thus, a full environmental restoration response must be a clear and overarching priority.

Given the Delta ecosystem crisis, we recommend urgent action on projects that will stem land loss and restore wetlands in the Louisiana Coastal Area and the Mississippi Delta, particularly those that use sediment brought in by the rivers or from offshore. Most of those restoration actions are already fully authorized under the Water Resources Development Act of 2007, enjoy broad public support, and have been vetted by scientists and lawmakers for decades. Now is the time to move beyond study of this system and provide clear guidance on respective state and Federal actions. Simply put, we have no time to spare in averting the systematic collapse of the Mississippi River Delta.

Below, we provide detailed recommendations on how to advance restoration of the Mississippi River Delta given the RESTORE Act's requirements. Specifically, we recommend that the Council implement river reintroduction projects (*i.e.*, diversions) that would provide sediment to rebuild, restore, and nourish areas where wetlands have been lost and will help to sustain areas where wetlands will be created or restored. Strategic use of sediments for land building will result in long-term benefits to those living in the delta by buffering storm impacts and increasing the resiliency of wetlands in the face of sea-level rise. The Council should also consider wetland and barrier island restoration projects that provide an opportunity to increase habitat productivity and strengthen the overall resilience of the Gulf Coast.

II. Project Prioritization Criteria and Recommended Projects

The RESTORE Act mandates that the Comprehensive Plan focus on *ecosystem* restoration and requires that all decisions, including projects funded by section (t)(3)(B)(i) of the law, must be prioritized based on science. As confirmed by the Senate Environment and Public Works

Committee report (pages 10 and 11), the Council's 30 percent allocation shall be disbursed to the Council for projects to "restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region."² Under section (t)(2)(D)(ii)(IV), the initial Comprehensive Plan must contain certain specified contents, including provisions to incorporate recommendations by the President's Gulf Coast Ecosystem Task Force; a list of authorized Federal projects that advance the RESTORE Act goals; and a three year project and program list, including a table showing the distribution of projects and programs in all five Gulf Coast States.

We think it is important to stress that section (t)(2)(D)(ii)(IV)(bb) refers only to federally authorized projects, not previously approved state projects. By so limiting the language, Congress wanted to ensure that projects would be listed only if they had received prior Congressional approval. For example, the State of Louisiana and

¹Several of our groups are also members of the Gulf Renewal Partnership, which will also provide comments on the *Path Forward* and recommendations to the Council on the development of its Draft Comprehensive Plan. We wholeheartedly endorse those recommendations in addition to those submitted on behalf of the Mississippi River Delta Coalition.

²(t)(2)(D)(i)(I)

Federal partners have worked for nearly a decade developing federally authorized Louisiana Coastal Area projects, through the Water Resources Development Act of 2007. By contrast, Congress made clear that projects contained in Gulf Coast State comprehensive plans should be evaluated for inclusion on the separate three-year priority project and program list, subject to available funding.

Under section (t)(2)(D)(iii), the Council must establish priorities for funding based on the best available science. The four criteria for project prioritization are, in summary, (1) Projects that are projected to make the greatest contribution to the Gulf ecosystem; (2) Large-scale projects and programs that are projected to substantially contribute to the Gulf ecosystem; (3) Projects contained in existing Gulf Coast State comprehensive ecosystem plans; and (4) Projects that restore long-term resiliency of Gulf natural resources.

It is critical to the success of the Comprehensive Plan that the Council has a set of transparent, science-based criteria against which it evaluates restoration projects and programs. Effective project assessment based on the statutory restoration criteria will be an essential step to developing a truly comprehensive Gulf wide ecosystem plan.

Below we review the four statutory criteria and provide recommendations on how to interpret those criteria.

(I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region. Criteria include:

We recommend that the Council focus this criterion on projects that provide systemic restoration benefits to highest-priority Gulf ecosystem resources, benefit or improve shared or common resources across the Gulf region, and deliver multiple ecological benefits.

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

We recommend that the Council focus this criterion on projects that significantly increase habitat or increase net wetland acres compared to a no action alternative, projects that demonstrate the largest cost-efficiency, and projects that address deltaic land loss.

(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.

We recommend that the Council incorporate the ecosystem restoration components of existing state plans, for example, the Louisiana Coastal Master Plan unanimously adopted by the state legislature in 2012.

(IV) Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands most impacted by the *Deepwater Horizon* oil spill.

We recommend that the Council focus this criterion on projects that preserve or restore natural processes, projects that reduce recovery time from disturbance events with minimal human intervention or maintenance requirements, and projects that continue to produce long-term results in the face of sea level rise.

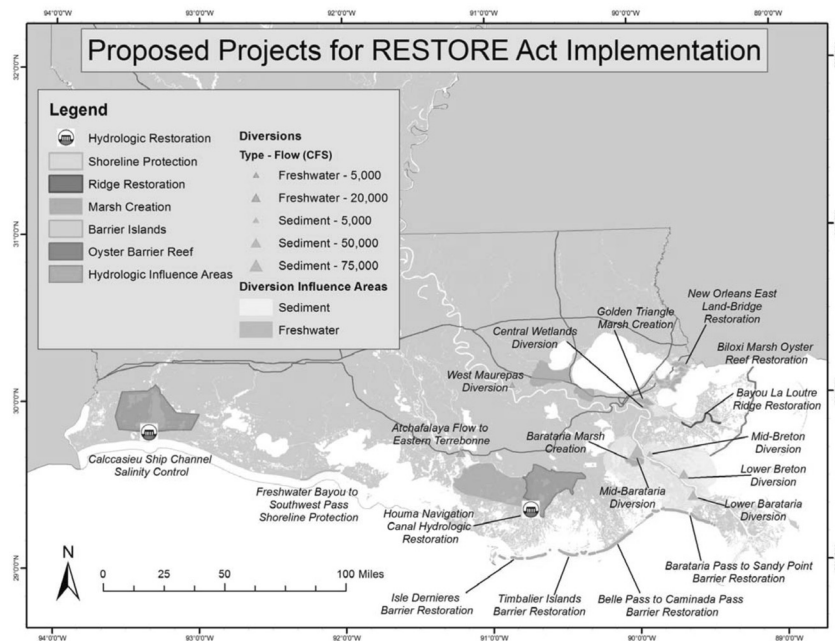
III. Project Recommendations

	Project Name	Project Type	Project Description	RESTORE Act Restoration Priorities ⁱ					Comprehensive Plan Provisions ⁱⁱ					Prior Authorization ⁱⁱⁱ		
				I	II	III	IV		1	2	3	4				
				Greatest Contribution	Large Scale	Existing State Comprehensive Plan	Most Impacted	Sub-total Restore Priorities	Restore Habitat	Water Quality	Living Coastal Resources	Community Resiliency	Sub-total Comprehensive Plan	Total	Prior/Pending Authorization	Federal Project ^{iv}
1	Mid-Barataria Diversion: 1 st period increment (75,000 cubic feet per second [cfs])	Diversion	Establish a distributary for sub-delta marsh-building diversion of pulsed Mississippi River water and sediment through control structure	6	6	6	6	24	3	2	3	3	11	35	✓	LCA Myrtle Grove
2	Mid-Breton Diversion	Diversion	Establish distributary for sub-delta marsh-building diversion of pulsed Mississippi River water and sediment through control structure	6	6	6	6	24	3	2	3	2	10	34	✓	LCA White's Ditch
3	Lower Breton Diversion	Diversion	Establish distributary for sub-delta marsh-building diversion of pulsed Mississippi River water and sediment through control structure	6	6	6	6	24	3	2	3	2	10	34		^v

	Project Name	Project Type	Project Description	RESTORE Act Restoration Priorities ⁱ					Comprehensive Plan Provisions ⁱⁱ					Prior Authorization ⁱⁱⁱ		
				I	II	III	IV		1	2	3	4				
4	Lower Barataria Diversion	Diversion	Establish distributary for sub-delta marsh-building diversion of pulsed Mississippi River water and sediment through control structure	6	6	6	6	24	3	2	3	2	10	34		a ^{iv}
5	Increase Atchafalaya Flow to Eastern Terrebonne	Diversion	Marsh and swamp-sustaining diversion through hydrologic modification of the Gulf Intracoastal Waterway	6	6	6	4	22	3	3	3	3	12	34	✓	LCA Convey Atchafalaya
6	West Maurepas Diversions	Diversion	Marsh and swamp-sustaining diversion of pulsed Mississippi River water and sediment through control structure	6	6	6	4	22	3	3	3	2	11	33	✓	LCA Hope Canal/ Blind R.
7	Barataria Pass to Sandy Point Barrier Island Restoration	Barrier Island	Beach, dune, and back bay marsh restoration with pipeline sand delivery	6	4	6	6	22	3	1	3	3	10	32	✓	LCA BBBS
8	Belle Pass to Caminada Pass Barrier Island Restoration	Barrier Island	Beach, dune, and back bay marsh restoration with pipeline sand delivery	6	4	6	6	22	3	1	3	3	10	32	✓	LCA BBBS
9	Central Wetlands Diversion	Diversion	Marsh and swamp-sustaining diversion of pulsed Mississippi River water and sediment through control structure	6	4	6	4	20	3	3	3	3	12	32	✓	LCA MRGO

	Project Name	Project Type	Project Description	RESTORE Act Restoration Priorities ⁱ					Comprehensive Plan Provisions ⁱⁱ					Prior Authorization ⁱⁱⁱ		
				I	II	III	IV		1	2	3	4				
				Greatest Contribution	Large Scale	Existing State Comprehensive Plan	Most Impacted	Sub-total Restore Priorities ⁱⁱⁱ	Restore Habitat	Water Quality	Living Coastal Resources	Community Resiliency	Sub-total Comprehensive Plan	Total	Prior Authorization ^{iv}	Federal Project
10	Houma Navigation Canal Lock Hydrologic Restoration	Hydrologic Restoration	Hydrologic restoration for salinity control, sustaining wetlands, while maintaining navigation	6	4	6	4	20	3	3	3	3	12	32	✓	LCA Houma Navigation
11	Isles Dernieres Barrier Island Restoration	Barrier Island	Beach, dune, and back bay marsh restoration with pipeline sand delivery from offshore shoal	6	4	6	4	20	3	1	3	3	10	30	✓	LCA TBBS
12	Timbalier Islands Barrier Island Restoration	Barrier Island	Beach, dune, and back bay marsh restoration with pipeline sand delivery from offshore shoal	6	4	6	4	20	3	1	3	3	10	30	✓	LCA TBBS
13	Biloxi Marsh Oyster Reef	Oyster Barrier Reef	Living reef for shoreline protection and habitat	4	4	6	6	20	3	2	3	2	10	30	✓	LCA MRGO
14	Calcasieu Ship Channel Salinity Control Measures	Hydrologic Restoration	Hydrologic restoration for salinity control, sustaining wetlands, while maintaining navigation	6	4	6	2	18	3	3	3	3	12	30		a ^{vii}

	Project Name	Project Type	Project Description	RESTORE Act Restoration Priorities ⁱ					Comprehensive Plan Provisions ⁱ					Prior Authorization ⁱⁱ		
				I	II	III	IV		1	2	3	4				
15	New Orleans East Land-Bridge Restoration: 1 st period Increment	Marsh Creation	Marsh creation through pipeline sediment delivery	4	4	6	4	18	3	2	2	3	10	28	✓	LCA MRGO
16	Large Scale Barataria Marsh Creation-Component E: 1 st period increment	Marsh Creation	Marsh creation through pipeline sediment delivery	4	4	6	4	18	3	2	2	3	10	28	✓	LCA Myrtle Grove
17	Golden Triangle Marsh Creation	Marsh Creation	Marsh creation through pipeline sediment delivery	4	4	6	2	16	3	2	2	2	9	25	✓	LCA MRGO
18	Bayou La Loutre Ridge Restoration		Protect marsh and habitat creation using pipeline sediment delivery	4	4	6	2	16	3	1	2	2	8	24	✓	LCA MRGO
19	Gulf Shoreline Protection: Freshwater Bayou to Southwest Pass	Shoreline Protection	Parallel offshore sand capture structures construction	4	4	6	2	16	2	1	2	2	7	22		a ^{ix}



IV. Comprehensive Plan and Project Implementation Recommendations

The Council comprised of six Federal agencies and five Gulf Coast states, each with different areas of expertise and resources. We recognize that the Council structure and the statutory charge are complex, and that implementation therefore will be challenging. Fortunately the RESTORE Act arms the Council with tools to address those challenges. For example, the Act permits the Council and Federal members to develop memoranda of understanding to assist with project implementation. Also, the Act requires the Council to submit a report to Congress that includes recommendations for modifications of existing laws necessary to implement the Act. We offer the following recommendations to assist the Council in fulfilling its duties and to encourage the selection of comprehensive, effective and vetted projects that should streamline implementation processes.

Implementation Recommendations:

We recommend that the Council establish a science-based adaptive management framework for implementation, both on the project-level and ecosystem-level, including baseline environmental data collection, and project monitoring to measure progress toward clear, measurable and achievable metrics and timelines.

Timetables and metrics set forth a specific commitment to completion and provide both the Council and the public with an honest assessment of the progress of projects and ecosystem goals, and allow stakeholders to set expectations. When developing project phases and timetables, the Council should collect environmental data and scientifically monitor projects prior to, during, and following construction. To effectively evaluate restoration, tools and methodologies for restoration monitoring should be developed. The resulting data will be critical for adaptive management processes and for determining the ultimate success of each restoration goal.

We recommend that the Council explicitly define the roles and responsibilities of the agencies tasked with implementing restoration projects.

The Comprehensive Plan should identify and assign a clear lead agency or entity with the appropriate authority to implement recommendations and projects. Assigning an explicit agency or entity provides accountability and expectations to effectively implement restoration projects.

We recommend that the Council outline and engage in a framework for resolving policy and procedural obstacles to project implementation.

For the Council to be effective in implementing the Comprehensive Plan and fulfilling its statutory duty, it should recognize its role in resolving policy and procedural obstacles to advance authorized restoration projects. For example, the Comprehensive Plan should include a commitment to exercise the full authority of the Council members to resolve policy and procedural obstacles that would allow currently authorized restoration projects to move forward immediately. Where conflicts exist, the Comprehensive Plan should direct agencies to resolve those conflicts in favor of advancing projects to meet the goal of a restored ecosystem, or identify the legal, regulatory, or policy impediments to doing so.

For those conflicts that arise after the completion of the initial Plan, the Council should be prepared to update the Plan to address needs, as required by statute. The Council should include recommended statutory changes to address obstacles that cannot be overcome through administrative remedies.

V. Science Integration Recommendations

To inform the development of the Comprehensive Plan and assist the Council with responsibilities under the Oil Spill Impact Allocation, the Council must “collect and consider scientific and other research associated with restoration of the Gulf Coast Ecosystem.”³ We support the Council incorporating the best available science into decision processes.

The success of comprehensive ecological restoration plan and Gulf Coast Ecosystem Restoration Council will be driven in large part based on the quality of science the plan integrates and Council relies on. Sound science is essential to restoring this troubled ecosystem. To ensure the best available science is contemplated and integrated into all processes considered by the Council, especially during project prioritization, we offer the following science recommendations.

We recommend that the Council:

- *Employ a Chief Scientist to coordinate activities and lead development and implementation of a Gulf-wide monitoring, modeling, and research program to support science-based comprehensive restoration program across the member-entities*
- *Establish a Scientific Advisory Committee*
- *Adopt and incorporate by reference the Task Force Strategy and the documents prepared by its Science Coordination Team, including the Science Plan in the Gulf of Mexico Ecosystem Science Assessment and Needs document*
- *Develop a system of independent review to take place at each appropriate stage of project selection; design and engineering feasibility; construction award; and at intervals during project implementation.*
- *Ensure independent review from scientists with expertise about Gulf Coast ecosystems.*

APPENDIX

Introduction

In this appendix, we provide a list of high priority projects with detailed descriptions that we believe meet the project priority criteria in the Restore Act, are consistent with the goals of the Restore Council's *The Path Forward to Restoring the Gulf Coast: A Proposed Comprehensive Plan*, and are essential to the implementation of the Louisiana's 2012 *Master Plan for Coastal Restoration and Protection* (SMP).

Every one of the nineteen ecosystem restoration projects that we include here is also included in the SMP. The State of Louisiana selected these projects as part of their master plan after a model-based and rigorous scientific review, as well as public participation. Given that rigor and support, the Louisiana legislature adopted the state's master plan unanimously. Also, Congress has authorized fifteen of these projects as part of the Title VII of the Water Resource Development Act of 2007 (WRDA). As Congress directed in WRDA 2007, the Army Corps of Engineers is studying the remaining four projects for possible authorization. Thus, scientists, engineers, economists, resource managers and the public have all vetted these nineteen projects. Indeed, with funding, these projects are ready for implementation.

We highlight these projects because they address a range of critical restoration priorities in each coastal basin. Our guiding principle was to choose projects that reestablish natural deltaic and hydrological functions or that protect critically threatened coastal systems. For example, there are four proposed controlled diver-

³(t)(2)(C)(vii)(IV)

sions of Mississippi River water and sediment designed to begin building new sub-delta splays into the Breton and Barataria basins; two designed to convey water and sediment into upper basin swamp and marsh ecosystems to prevent wholesale habitat conversion and loss; and one of Atchafalaya River water and sediment to sustain and enhance existing wetlands. Also, there are three large-scale projects to reestablish marsh with pipeline sediment delivery at critical locations. There is one large-scale project to establish a living oyster reef for shoreline protection. There are four massive barrier island or barrier headland restoration projects, two projects to reestablish hydrological barriers to prevent salt water intrusion from navigation projects, one project to protect eroding marsh shoreline at a critical location in the landscape, and one project to reestablish a forested natural levee ridge to serve as habitat, provide structural stability for marshes, and reduce storm surge.

We recognize that efforts to restore the Gulf ecosystem will be complex and interconnected, including those funded through the RESTORE Act, NRDA, and criminal plea agreements via the National Fish and Wildlife Foundation. All three of these efforts will require those administering the particular program, in partnership with the state of Louisiana, to identify and fund project priorities. We recommend that all parties work closely and flexibly together to ensure that projects are chosen and funded to achieve the greatest ecosystem benefits within the most urgent time-frame possible.

Project List

1. *Mid-Barataria Diversion (1st Period Increment—75k cfs)*—Establish Distributary for Sub-Delta Marsh-Building Diversion of Pulsed Mississippi River Water and Sediment through Control Structure
2. *Mid-Breton Diversion*— Establish Distributary for Sub-Delta Marsh-Building Diversion of Pulsed Mississippi River Water and Sediment through Control Structure
3. *Lower Breton Diversion*—Establish Distributary for Sub-Delta Marsh-Building Diversion of Pulsed Mississippi River Water and Sediment through Control Structure, Ideally Utilizing Existing Newly-formed Mardi Gras Pass
4. *Lower Barataria Diversion*—Establish Distributary for Sub-Delta Marsh-Building Diversion of Pulsed Mississippi River Water and Sediment through Control Structure
5. *Increase Atchafalaya Flow to Eastern Terrebonne*—Marsh and Swamp-Sustaining Diversion through Hydrologic Modification of the Gulf Intracoastal Waterway
6. *West Maurepas Diversions*—Swamp and Marsh Sustaining Diversion of Pulsed Mississippi River Water and Sediment through Control Structure
7. *Barataria Pass to Sandy Point Barrier Island Restoration and*
8. *Belle Pass to Caminada Pass Barrier Island Restoration*—Beach, Dune and Back Bay Marsh Restoration with Pipeline Sand and Sediment Delivery
9. *Central Wetlands Diversion*—Marsh and Swamp-Sustaining Diversion Pulsing Water and Sediment through Control Structure from Mississippi River
10. *Isles Dernieres Barrier Island Restoration*—Beach, Dune and Back Bay Marsh Restoration with Pipeline Sand Delivery from Offshore Shoal
11. *Timbalier Islands Barrier Island Restoration*—Beach, Dune and Back Bay Marsh Restoration with Pipeline Sand Delivery from Offshore Shoal
12. *Houma Navigation Canal Lock Hydrologic Restoration*—for Salinity Control, Sustaining Marsh and Swamp while Maintaining Navigation
13. *Biloxi Marsh Oyster Reef*—Living Reef for Shoreline Protection and Habitat
14. *Calcasieu Ship Channel Salinity Control Measures*—Hydrologic Restoration for Salinity Control, Marsh Sustaining, while Maintaining Navigation
15. *New Orleans East Land-bridge Restoration (1st Period Increment)*—Marsh Creation through Pipeline Sediment Delivery
16. *Large Scale Barataria Marsh Creation-Component E (1st Period Increment)*—Marsh Creation through Pipeline Sediment Delivery
17. *Golden Triangle Marsh Creation*—Marsh Creation through Pipeline Sediment Delivery
18. *Bayou La Loutre Ridge Restoration*—to Protect Marsh and Provide Habitat, using Pipeline Sediment Delivery
19. *Gulf Shoreline Protection (Freshwater Bayou to Southwest Pass)*—Construct parallel offshore sand capture structures.

Project Descriptions

1. *Mid-Barataria Diversion (1st Period Increment—75k cfs)—SMP*

Barataria Basin

Plaquemines and Jefferson Parishes

Medium Diversion with Dedicated Dredging at Myrtle Grove—LCA

This pulsed sediment diversion to the mid-Barataria basin, in the vicinity of Myrtle Grove, is the most critical restoration project for the near term in the LCA and State Master Plan. The mid-Barataria Basin has one of the highest land loss rates in the world, is part of one of the most productive estuaries in the world, and helps provide storm surge protection to over 250,000 people in small coastal communities and the New Orleans metropolitan area. Extensive modeling of river sediment dynamics, river and basin hydrology, fisheries, and water elevation effects make this location an important test and proof of concept for man-made land building diversions. The two-step scaling of diversion size (from to 75k cfs to 250k cfs) proposed in the SMP allows for community transition, and the advanced planning, design, and compliance of the LCA project will facilitate rapid implementation.

The Corps/State Myrtle Grove LCA project is underway, and is investigating a range of diversion sizes from 15–125k cfs, as well as marsh creation through pipeline sediment delivery of river sediment.

\$650m; 38,000 net acres after 50 years with 0.45 m of RSLR. (The SMP modeled this at 50k cfs. Subsequent analysis has led to a decision to build the project at 75k cfs. However, the net acreage estimate has not been updated to reflect the increased flow. This estimate is therefore very conservative.)

75k cfs (scaled up to 250k cfs in 2nd Period Increment)

2. *Mid-Breton Diversion—SMP*

Breton Basin

Plaquemines Parish

Medium Diversion at White Ditch—LCA

This project is well advanced as the White Ditch LCA Medium Sediment Diversion in an area long identified as a prime location for river re-introduction, marsh creation, and revival of forest on natural ridges. It is an important, easily executed project, in an area with little intervening infrastructure.

White Ditch is the probable location for the Mid-Breton Diversion—joint Corps/state LCA planning, design and compliance are well-advanced. The diversion has been modeled between 5–35k cfs. The decision as to which flow level is appropriate should be based upon continued modeling and project prioritization looking for synergies with the Upper and Lower Breton Diversions, as well as sediment availability on that stretch of the river.

\$123m; 20,232 net acres after 50 years with 0.45 m of RSLR.

5,000 cfs (or up to 35k cfs in LCA)

3. *Lower Breton Diversion—SMP*

Breton Basin

Plaquemines Parish

Delta Management Study and Comprehensive Plan—LCA

This is a sediment diversion into lower Breton Sound in the vicinity of Black Bay that will build and maintain land by creating a new sub-delta lobe and sustaining existing marshes. The project will also restore historic salinities in lower Breton Sound. A pre-engineering assessment is underway to determine optimal location and size, among other questions.

This diversion is unique in that it is planned for a segment of the river along which there are no Federal river levees. Overbank spring flow and several natural and man-made distributary channels,

Mardi Gras Pass: During the 2011 flood, a new distributary, named Mardi Gras Pass, formed through the Bohemia Spillway. The location is within the area considered for the SMP Lower Breton Diversion. It is possible that the distributary channel can serve to divert some of the flow required at a fraction of the cost of constructing a new one.

\$203m; 11,976 net acres after 50 years with 0.45 m of RSLR.

4. *Lower Barataria Diversion—SMP*

Barataria Basin
Plaquemines, Jefferson and Lafourche Parishes

Delta Management Study and Comprehensive Plan—LCA

This is a sediment diversion into lower Barataria Bay in the vicinity of Empire with 50,000 cfs capacity. It will build a sub-delta lobe in area where marsh loss is nearly complete, provide a sediment stream to the Barataria Basin shoreline, restore historical salinities, and buffer lower Plaquemines communities from storm surge.

\$203m; 8,960 net acres after 50 years with 0.45 m of RSLR

5. *Increase Atchafalaya Flow to Eastern Terrebonne—SMP*

Terrebonne Basin
St. Mary, Terrebonne and Lafourche Parishes

Convey Atchafalaya River Water to Northern Terrebonne Marshes—LCA

East Terrebonne's marshes are rapidly disappearing in large part because of relentless salinity increases. The marshes are located nearly equidistant between the Mississippi and Atchafalaya rivers and are blocked from the opportunity to receive significant riverine input from diversions higher in the basin by settlement and development in the Greater Houma area. The Gulf Intracoastal Waterway (GIWW) provides a potential east west conduit for Atchafalaya River water. The project would modify the GIWW to convey up to 20,000 cfs to help sustain these marshes.

\$292m; 17,190 net acres after 50 years with 0.45 m of RSLR.

6. *West Maurepas Diversions—SMP*

Pontchartrain Basin
Ascension, St. John, St. James, Livingston and Tangipahoa Parishes

Small Diversion at Convent/Blind River and/or Small Diversion at Hope Canal—LCA

These diversions will sustain a rapidly declining baldcypress swamp, one of the largest in the nation, with freshwater, nutrient and sediments. It will help prevent loss of forest, conversion of marsh to open water, and fight rising salinities in the entire Pontchartrain basin.

\$120m; 5763 net acres after 50 years with 0.45 m of RSLR.

7. *Barataria Pass to Sandy Point Barrier Island Restoration—SMP*

Barataria Basin
Jefferson and Plaquemines Parishes

Barataria Basin Barrier Shoreline—LCA

Despite massive marsh loss, the Barataria Basin remains a highly productive and functional estuarine system, with surviving barrier island and headlands, salt marshes, bays, brackish, intermediate and fresh marshes, baldcypress swamps, bottomland hardwood communities, and both maritime and natural levee forests. In the long term, this system can only survive with river re-introduction, but in the near term the barrier islands and headlands are critical features necessary to prevent wholesale conversion of the lower estuary to a saline marine environment, with continued massive marsh loss.

Project implementation is underway, and can be financed in smaller discrete implements. Several segments have already been partially constructed, or are about to be under different authorities. Costs may therefore be adjusted downward. This is one of the most advanced LCA projects, with a signed Chief's Report. Federal appropriations are needed.

\$536m; 2,778 net acres after 50 years with 0.45 m of RSLR.

Re-contour and nourish island and headland segments along approximately 180,000 l.f. of barrier arc; beach, dune, and marsh.

Project is scalable—that is, it does not need to be constructed in one increment at full cost. A number of components are already in various stages of construction.

8. *Belle Pass to Caminada Pass Barrier Island Restoration—SMP*

Barataria Basin
Lafourche and Jefferson Parishes

Barataria Basin Barrier Shoreline—LCA

Despite massive marsh loss, the Barataria Basin remains a highly productive and functional estuarine system, with surviving barrier island and headlands, salt marshes, bays, brackish, intermediate and fresh marshes, baldcypress swamps, bottomland hardwood communities, and both maritime and natural levee forests. In the long term, this system can only survive with river re-introduction, but in the near term the barrier islands and headlands are critical features necessary to prevent wholesale conversion of the lower estuary to a saline marine environment, with continued massive marsh loss.

Project implementation is underway, and can be financed in smaller discrete implements. Several segments have already been partially constructed, or are about to be under different authorities. Costs may therefore be adjusted downward. This is one of the most advanced LCA projects, with a signed Chief's Report. Federal appropriations are needed.

\$278m; 1,447 net acres after 50 years with 0.45 m of RSLR.

Restore island and headland beach, dune, and marsh segments along approximately 175,000 l.f. of barrier island arc with sand pumped from an offshore shoal.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

9. *Central Wetlands Diversion—SMP*

Borgne Basin

St. Bernard and Orleans Parish

Mississippi River Gulf Outlet Environmental Restoration (in part)—LCA

Long term sustainability of the Central Wetlands requires sediment introduction to offset relative sea level rise. The project will sustain remaining marsh and swamp and facilitate restoration of those areas now in open water. Additionally, the freshwater passing through the bayous Bienvenue and Dupree gates will help maintain optimum salinities in the Lake Borgne and Biloxi marshes.

\$189m; 5,421 net acres after 50 years with 0.45 m of RSLR.

10. *Isles Dernieres Barrier Island Restoration—SMP*

Terrebonne Basin

Terrebonne Parish

Terrebonne Basin Barrier Shoreline (in part)—LCA

Restoration of the Isles Dernieres barrier islands will provide dune, beach, and back barrier marsh habitat and enhance storm surge and wave attenuation in the Terrebonne Basin.

\$343m; 2,010 net acres after 50 years with 0.45 m of RSLR.

Re-contour and nourish island and headland segments along approximately 120,000 l.f. of barrier arc; beach, dune, and marsh.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

11. *Timbalier Islands Barrier Island Restoration—SMP*

Terrebonne Basin

Terrebonne and Lafourche Parishes

Terrebonne Basin Barrier Shoreline (in part)—LCA

Restoration of the Timbalier barrier islands will provide dune, beach, and back barrier marsh habitat and enhance storm surge and wave attenuation in the Terrebonne Basin and lower Lafourche Parish.

\$524m; 3,321 net acres after 50 years with 0.45 m of RSLR

Re-contour and nourish island and headland segments along approximately 90,000 l.f. of barrier arc; beach, dune, and marsh.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

12. *Houma Navigation Canal Lock Hydrologic Restoration—SMP*

Terrebonne Basin

Terrebonne Parish

Multipurpose Operation of Houma Navigation Lock—LCA

The Houma Navigation Canal is the single most important conduit for saltwater intrusion into Terrebonne's marshes. The lock is necessary to control salinities, and make the GIWW Atchafalaya conveyance project as effective as possible.

\$180m; 3,452 net acres after 50 years with 0.45 m of RSLR.

13. *Calcasieu Ship Channel Salinity Control Measures—SMP*

Chenier Plain

Cameron, Vermilion, Jeff Davis and Calcasieu Parishes

Southwest Louisiana Study—LCA

The Chenier Plain was a stable geological platform with low subsidence and a healthy mix of freshwater inputs and estuarine inputs. Wholesale hydrological modification resulted from the dredging of navigation canals and channels, which increased storm surge threats to interior communities, and allowed saltwater ingress to interior freshwater marshes, leading to widespread marsh loss. Key to restoring some balance and slowing the losses is to reduce saltwater and the tidal prism in the Calcasieu Ship Channel.

\$398m; 21,648 net acres after 50 years with 0.45 m of RSLR.

14. *New Orleans East Land-bridge Restoration (1st Period Increment)—SMP*

Borgne-Pontchartrain Basins

Orleans and St. Tammany Parishes

Mississippi River Gulf Outlet Environmental Restoration (in part)—LCA.

The New Orleans east marsh land bridge is a critical feature separating Lake Pontchartrain from the Gulf. It is important not only as estuarine habitat, but as a crucial line of defense from storm surge for over 1.5 million people in 8 parishes, including New Orleans, East Jefferson, Laplace, Madisonville, Mandeville, and Slidell.

This is an important component of the New Orleans East Land Bridge that can be quickly executed.

\$473m; 6,427 net acres after 50 years with 0.45 m of RSLR.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

15. *Large Scale Barataria Marsh Creation-Component E (1st Period Increment)—SMP*

Barataria Basin

Plaquemines, Jefferson, and Lafourche Parishes

Medium Diversion with Dedicated Dredging at Myrtle Grove—LCA

This marsh creation project will build upon projects already in place and under construction under CWPPRA and CIAP to strengthen the so-called Barataria Land Bridge. It will complement the Mid-Barataria/Myrtle Grove Diversion, and help protect Lafitte from storm surge and tidal flooding.

\$495m; 8,618 net acres after 50 years with 0.45 m of RSLR.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

16. *Biloxi Marsh Oyster Reef—SMP*

Borgne-Breton Basins

St. Bernard Parish

Mississippi River Gulf Outlet Environmental Restoration (in part)—LCA

The Biloxi Marshes are one of the most stable marsh platforms remaining in coastal Louisiana, due to low subsidence rates and soil platform maturation. Re-establishment of vertical oyster reefs along with re-introduction of river water via West Maurepas and Violet diversions, will further slow the deterioration of these highly productive marshes. Oyster reefs, in addition to providing wave and surge protection, also provide a host of ecosystem services. Once established, they are naturally self-maintaining.

\$83m; 231 net acres after 50 years with 0.45 m of RSLR.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

17. *Gulf Shoreline Protection: Freshwater Bayou to Southwest Pass—SMP*

Chenier Plain

Vermilion Parish

Southwest Louisiana Study—LCA

The project will protect a critical landscape feature and highly productive from erosion by constructing parallel protection along the gulf shoreline. It will anchor the southwest corner of the Chenier Plain. The structures will be designed to reduce wave energy and trap sediments, thus slowing shoreline retreat.

\$99m; 90k l.f., 1048 net acres after 50 years with 0.45 m of RSLR.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

18. Golden Triangle Marsh Creation—SMP

Borgne Basin

Orleans and St. Bernard Parishes

Mississippi River Gulf Outlet Environmental Restoration (in part)—LCA

The project will restore marsh in an area badly damaged by saltwater intrusion and erosion subsequent to the dredging of the MRGO. The marsh here will buffer the newly constructed surge barrier and provide important estuarine habitat for Lake Borgne.

\$293m; 2,442 net acres after 50 years with 0.45 m of RSLR.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

19. Bayou La Loutre Ridge Restoration—SMP

Borgne Basin

St. Bernard Parish

Mississippi River Gulf Outlet Environmental Restoration (in part)—LCA

Bayou la Loutre's natural levees are part of the structural underpinning of the Biloxi marshes. Re-establishing the ridge will improve hydrology, provide storm surge protection, decrease saltwater intrusion, and provide important habitat for migratory birds.

\$61m; 368 net acres after 50 years with 0.45 m of RSLR.

Project is scalable—that is, it does not need to be constructed in one increment at full cost.

Notes:

ⁱⁱ The initial Comprehensive Plan will adopt and expand on the four overarching Task Force Strategy goals: (1) *Restore and Conserve Habitat*; (2) *Restore Water Quality*; (3) *Replenish and Protect Living Coastal and Marine Resources*; and (4) *Enhance Community Resilience*.

ⁱⁱⁱ The Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012, the RESTORE Act requires the initial Comprehensive Plan include “. . . a list of any project or program authorized prior to July 6, 2012, but not yet commenced, the completion of which would further the purposes and goals of this subsection . . .” 33 U.S.C. § 1321(t)(2)(D)(ii)(IV)(bb) (2013).

^{iv} Louisiana Coastal Area; Water Resources Development Act of 2007; Title VII, Sections 7002 Comprehensive Plan, 7006 Construction (c)(1); (e)(3)(A), 7010 Expedited Reports (a)(2).

^v WRDA 2007, Section 7002 authorizes studies that could lead to further project authorization. The Delta Management Study is underway. The Comprehensive Plan is not complete.

^{vi} (see note ‘v’ above)

^{vii} Project Ratings (see below)

^{viii} The Southwest Louisiana Study, WRDA 2007, Section 7010 (a) (2) is underway and may lead to additional project authorizations.

^{ix} (see note “viii” above)

Project Ratings:

The ratings are weighted x2 for statutory requirements.

2/1 = Achieves priority or goal.

4/2= Better achieves priority or goal.

6/3 = Best achieves priority or goal.

The ratings are our best collective judgment about how well each project meets the requirements laid out in the RESTORE Act and in the Restore Council's *Path Forward* vision for developing the Comprehensive Plan, based upon metrics modeled

in the development of Louisiana's 2012 *Comprehensive Master Plan for a Sustainable Coast*. These metrics include:

- net project acreage against *future without action*;
- ecosystem services provided:
 - wildlife
 - hunting
 - commercial harvest
 - fisheries
 - commercial
 - recreational
 - nature-based tourism
 - storm surge/wave attenuation
 - agriculture
 - carbon sequestration
 - freshwater availability, and
 - nutrient uptake;
- flood risk (storm surge) reduction for coastal communities:
 - sustaining cultural heritage,
 - equitable distribution of risks and benefits;
- use of natural processes;
- long-term sustainability in the face of climate change uncertainties;
- use of a systems approach for project synergies;
- solutions for the long-term;
- project adaptability;
- engineering feasibility;
- third party review processes for project selection and design; and
- cost-effectiveness.

Comprehensive Plan “The Path Forward” Goals

1. Restore and Conserve Habitat;

a. Ratings are based upon the scale of habitat restored; *i.e.*, acres of marsh created or sustained over time as measured against future without project; linear miles of oyster reef and the cascade of ecosystem services provided over time; cubic yards of sediment moved for barrier island and marsh restoration coupled with long term sustainability of the project in the face of future conditions. Ancillary effects of projects are also evaluated, *i.e.*, was material obtained through natural processes; is the borrow source for dredge projects renewable and to what extent borrow removal causes ecosystem harm or beneficially offsets harm that might otherwise occur.

2. Restore Water Quality;

a. These projects will affect highly productive estuaries first, and the northern gulf thereafter. Generally, filtering Mississippi River water through wetlands will reduce nutrient loading in the near shore Gulf, and thereby reduce the Gulf Hypoxic Zone that forms annually in the Mississippi River navigation channels' plume through nutrient retention and uptake. Estuarine water quality parameters include offsetting saltwater intrusion from anthropogenic changes to system hydrology; achieving favorable salinity gradients calculated to benefit wetland vegetation, plant growth, soil accretion, marsh sustainability, and estuarine productivity measured against future without project. Some offsetting factors include potential effects on fisheries, pathogens, and temporary eutrophication in receiving water bodies.

3. Replenish and Protect Living Coastal and Marine Resources;

a. The Mississippi River Delta and coastal Louisiana support the highest biological productivity of any Gulf Coast ecosystem because the river brings 85 percent of the freshwater and 90 percent of the sediment that enters the Gulf. As a consequence, 97 percent of Gulf and 40 percent of national seafood production

in the lower 48 states is directly supported. Between five and ten million ducks and geese winter annually, millions of neotropical migrants re-fuel on their way to and from the tropics, and the area supports large colonies of nesting wading and colonial seabirds, among many, many other living resources. Projects are rated for their scale (acres of habitat created or sustained against future without project) and their ability to directly benefit living resources by creating or sustaining breeding and foraging habitat.

4. *Enhance Community Resilience*

a. Coastal Louisiana includes large metropolitan areas (Greater New Orleans), mid-size cities and small towns, villages where the economy is dependent primarily on commercial exploitation of natural resources, and traditional communities where subsistence on natural resources is important to well-being of community members. Projects are rated for their effectiveness in protecting communities from storm surge and on enhancing natural resources that provide the widest range of economic, traditional, and recreational opportunities for coastal residents. All projects are measured for sustainability and for net value against *future without* conditions.

GULF COAST ECOSYSTEM RESTORATION COUNCIL
Washington, DC, July 14, 2013

Dear Council Members,

On behalf of our millions of members and supporters, thank you for the ongoing opportunity to comment on the development of a plan to restore the Gulf Coast region. The attached comments on the Draft Initial Comprehensive Plan build upon and are within the framework of our prior recommendations, dated May 1, 2013, to advance restoration of the Mississippi River Delta.

We were pleased that the Draft Initial Comprehensive Plan maintains and affirms the RESTORE Act's statutory requirement that the Council-selected Restoration Component be dedicated solely to ecosystem restoration projects. This approach is absolutely essential to protect the delicate balance between varying interests that Congress considered in constructing the RESTORE Act, and we strongly urge that it be strictly maintained, as required by the Act, in the Final Initial Comprehensive Plan.

The recommendations below, which reflect that and other central tenets of the legislation, include modifications and refinements to the Draft Initial Comprehensive Plan that will help optimize the Council's ongoing restoration decisions and actions.

We again urge the Council to take full advantage of the unprecedented opportunity the RESTORE Act presents to repair the Gulf ecosystem and restore its natural resilience. The Council can effectuate meaningful, sustainable environmental restoration. Our organizations are prepared to continue serving as a resource to the Council and look forward to further discussion of our comments and recommendations. We have also attached our May 1 recommendations, which are more expansive than the scope of the Draft Initial Comprehensive Plan, for the record and continued consideration as the Council moves forward, particularly in creating a three-year priority project and program list.

Sincerely,

NATIONAL AUDUBON SOCIETY
COALITION TO RESTORE COASTAL LOUISIANA
ENVIRONMENTAL DEFENSE FUND
LAKE PONTCHARTRAIN BASIN FOUNDATION
NATIONAL WILDLIFE FEDERATION

Council-selected Restoration Component. The RESTORE Act mandates that the Comprehensive Plan focus on *ecosystem* restoration and requires that all decisions, including projects funded by the State Expenditure Plan component, must be prioritized based on the best available science. As confirmed by the Senate Environment and Public Works Committee report (pages 10 and 11), the Council-selected Restoration Component shall be disbursed to the Council for projects to "restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region." *We were pleased that the Draft Initial Comprehensive Plan maintains and affirms this statutory focus on ecosystem restoration projects, which underlies many of our recommendations below,*

and we urge the Council to strictly adhere to this focus in the Final Initial Comprehensive Plan.

Specified Contents and Previously-authorized Projects. Under section (t)(2)(D)(ii)(IV), the initial Comprehensive Plan must contain certain specified contents to generate project lists to be screened through the statutory restoration priorities; including a list of “authorized” Federal projects and programs that advance the RESTORE Act goals; a three year project and program list; and a table showing the distribution of projects and programs in all five Gulf Coast States. We believe that subsection (bb) of that section, which calls for the list of projects and programs “*authorized* prior to the date of enactment,” refers only to projects included in previously enacted *federal* authorizing legislation, and not to state or other projects simply *approved* outside the Federal authorization process. By so limiting the language, we believe Congress specifically intended to restrict this list to projects that have received prior Congressional approval. For example, the State of Louisiana and Federal partners have worked for nearly a decade developing federally authorized Louisiana Coastal Area projects, through the Water Resources Development Act of 2007.

Congress provided for other mechanisms through which state-approved projects could be considered, including explicit direction, in the project selection criteria, that projects contained in Gulf Coast State comprehensive plans can be evaluated for possible inclusion on the three-year priority project and program list.

Appendix A to the Draft Initial Comprehensive Plan, subtitled “Background Information,” is referenced as a preliminary version of the required list of authorized but not yet commenced projects. *For reasons stated above, we recommend that the Council confine the appendix list only to projects **authorized** by Congress. As discussed below, projects on this revised list, along with state-approved projects and all other projects considered by the Council, need to be evaluated by the Council based on the restoration priorities criteria outlined in the legislation.*

Time-span of Priority Project-selection Criteria. Under section (t)(2)(D)(iii), the Council must establish priorities for funding based on the best available science according to four required restoration priorities criteria. Those are, in summary, (1) Projects that are projected to make the greatest contribution to the Gulf ecosystem; (2) Large-scale projects and programs that are projected to substantially contribute to the Gulf ecosystem; (3) Projects contained in existing Gulf Coast State comprehensive ecosystem plans; and (4) Projects that restore long-term resiliency of Gulf natural resources. The Draft Initial Comprehensive Plan suggests that the RESTORE Act criteria and the requirement of best available science might only bind the Council for the first three years. We find no reference in the statute or the legislative history to indicate this temporal limitation. *We believe the Council must adhere to the express statutory requirement to use the best available science and the four prioritization criteria throughout implementation of the Act, and we recommend that any language suggesting otherwise be removed from the Comprehensive Plan.*

Prioritization Criteria. We strongly recommend against adoption of additional criteria not specifically provided for in the statute. The RESTORE Act legislates the criteria to be used for project selection. We believe it is beyond the scope of the implementation process to alter that statutory framework by developing “other criteria as necessary to refine the selection process” as considered on page 14 of the Draft Initial Comprehensive Plan. We also believe that an effective, implementable three-year priority project and program list can be developed without the addition of new criteria. *To ensure optimal results using the existing legislated criteria, we do support further explanation of how the existing statutory criteria will be implemented and provide our recommendations below.*

1. “Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.” We recommend that the Council interpret this criterion to include ecosystem restoration projects or programs that:
 - Provide systemic restoration benefits to highest-priority Gulf ecosystem resources,
 - Restore, protect, or improve shared or common resources across the Gulf region, irrespective of state lines, or
 - Deliver multiple ecological benefits.
- Restoration of the Mississippi River Delta will deliver multiple ecological benefits to shared highest-priority resources by restoring degrading coastal wet-

lands of Mississippi and Louisiana, while also providing water quality benefits to the Gulf of Mexico.

2. *“Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.”* We recommend that the Council interpret this criterion to include ecosystem restoration projects or programs that:
 - Significantly increase important Gulf Coast habitat,
 - Increase net wetland acres compared to a no action alternative, or
 - Address deltaic land loss.
- The Louisiana Coastal Master Plan ecosystem restoration projects were developed specifically to halt deltaic land loss and increase wetland acres. Implementation of Mississippi River diversions consistent with the Master Plan will have the effect of significantly increasing Gulf Coast habitat.
3. *“Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.”*
 - Consistent with this legislative direction, we recommend that the Council fully consider and place high priority on the ecosystem restoration components of the existing Louisiana Coastal Master Plan, unanimously adopted by the state legislature in 2012. The Comprehensive Everglades Restoration Plan and the Mississippi Coastal Improvements Program are also relevant ecosystem restoration plans for purposes of this criterion.
4. *“Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands most impacted by the Deepwater Horizon oil spill.”* This statutory criterion sets the RESTORE Act Comprehensive Plan apart from other restoration plans because it prioritizes increased resilience for the future. We recommend that the Council interpret this criterion to include ecosystem restoration projects or programs that:
 - Increase the health and lessen vulnerability of the types of resources, habitat, fish and wildlife that were impacted by the Deepwater Horizon disaster,
 - Preserve or restore natural processes or functionality,
 - Reduce recovery time from disturbance events with minimal human intervention or maintenance requirements, or
 - Continue to produce long-term results in the face of sea level rise.
- The Louisiana Coastal Master Plan was crafted specifically to stabilize and ensure a more resilient and sustainable Gulf Coast and Mississippi River Delta.

Geographic Scope of the Gulf Coast Region. The RESTORE Act geographically restricts spending from the Gulf Coast Restoration Trust Fund to: (1) the coastal zones (including Federal land) of the Gulf states (2) adjacent land, water, and watersheds within 25 miles of the coastal zones and (3) Federal waters. The Act does not define “adjacent land, water, and watersheds.” *We recommend that the Council define those terms, and provide for public consideration, a map depicting the areas that fall under these definitions.*

Objectives. The Draft Initial Comprehensive Plan included seven objectives to further define the types of projects and programs the Council intends to select for funding. We support the Council’s efforts to meet the full spectrum of natural resource, science, and community needs outlined in these objectives. We also recognize that each of these objectives, like the broader goals carried over from the Council’s earlier *Path Forward* document, can be fully addressed through strict adherence to the four statutory criteria for Council-selected Restoration Component projects and programs, and through development of effective State Restoration Expenditure Plans as discussed below.

The criteria mandated in the RESTORE Act for the Council-selected Restoration Component are based solely on meeting environmental restoration needs. This statutory directive recognizes that the components of the Gulf ecosystem are intrinsically linked; that instituting a comprehensive ecosystem restoration plan will create jobs and sustain a robust economy; and that using economic or other non-environmental screens to select ecosystem projects would undermine the holistic environmental and economic goals of the Act. By excluding economic considerations from

the Restoration Component criteria, the Act ensures an appropriate Council focus on individual restoration projects that may in themselves have varying impacts on community and economic needs, but taken together will have the greatest impact on the natural systems on which those communities and economies depend.

We recommend that the Plan clarify that the stated objectives support and do not supersede the project selection criteria; that the Council will meet these objectives in the Restoration Component through projects selected solely on the basis of those criteria; and that the objectives are not intended, and will not be used, to factor economic or other non-environmental implications into the selection of Restoration Component projects or programs.

We appreciate the acknowledgement that efforts funded under the Council-selected allocation may achieve multiple objectives at once; and also may not (and should not) be equally distributed among objectives. *We recommend that the Council refine the Objectives in the Plan as follows:*

Primary Objectives. Any project or program that meets the restoration priorities project selection criteria and is subsequently selected by the Council for funding should accomplish at least one of the following primary objectives:

1. Restore, Enhance, and Protect Habitats
2. Restore, Improve, and Protect Water Quality
3. Protect and Restore Living Coastal and Marine Resources
4. Restore and Enhance Natural Processes and Shorelines

Secondary Objectives. Secondary objectives, though important, must be viewed as co-occurring objectives that may be integrated in projects that achieve the primary objectives first. Any project or program that meets restoration priorities project selection criteria, is selected by the Council for funding, and accomplishes at least one primary restoration objective may include the following secondary objectives:

5. Promote Community Resilience
6. Promote Natural Resource Stewardship and Environmental Education

We recommend that Objective 7 in the Draft Initial Plan “Improve Science-Based Decision-Making Processes” *be a fully integrated and required overarching component both of plan development and project and program selection rather than an Objective.* We believe this is supported by the statutory requirement that projects and programs be selected based on the best available science. We also believe that this statutory requirement merits both project and Gulf-wide monitoring to inform and improve science-based decision-making and adaptive management, and evaluate effectiveness and measure progress towards restoration goals.

State Expenditure Plans are required to be “consistent with the goals and objectives” of the Comprehensive Plan (t)(3)(B)(i)(III). The Plan should clarify that any State Expenditure Plan that undermines or is inconsistent with either primary or secondary objectives will be ineligible for funding by the Council.

Council Role in State-specific Restoration Expenditure Plans. As the Draft Initial Comprehensive Plan notes, the RESTORE Act also requires the Council to oversee and approve development of state-specific restoration expenditure plans, which will guide 30 percent of the spending from the Gulf Coast Restoration Trust Fund, determined according to an impact formula. State Restoration Expenditure Plans must be consistent with the goals and objectives of the Comprehensive Plan.

Congress intended that the various allocations from the Gulf Coast Restoration Trust Fund be invested in the region for distinct, but not inconsistent, purposes by various coordinated local, state, and Federal Government entities. In requiring Council oversight of the Spill Impact Component, Congress intended that State Restoration Expenditure Plans protect and enhance the ecosystem restoration objectives of the Council-selected allocation. The Act confirms this nexus between the state plans and the Council plan by limiting spending on infrastructure in state plans. A state plan may only exceed the infrastructure spending limitation if there are no remaining environmental restoration needs.

The Draft Initial Comprehensive Plan outlines permissive elements that *may* be included in a State Restoration Expenditure Plan. The Council is required to evaluate each State Restoration Expenditure Plan for consistency with the goals and objectives of the Comprehensive Plan. While we agree that each Gulf Coast state is unique, there must be a solid base set of requirements for State Restoration Expenditure Plans.

We recommend that the Council revise the Draft Initial Comprehensive Plan to more clearly delineate required elements of state plans, criteria and process for a con-

sistency determination, and the method for evaluating sufficiency of a state-certification of environmental health.

Specifically, the following elements should be mandatory:

- The amount of funding needed for each project, program, and activity selected by the State for planning and implementation; the proposed start and completion dates; and specific mechanisms that will be used to monitor and evaluate the outcomes and impacts of each project, program, and activity.
- A description of how the best available science, as applicable, informed the State's project, program, and activity selection.
- A justification statement of how all included projects, programs, and activities are eligible activities under the RESTORE Act.
- A description of how each included project, program, and activity contributes to the overall economic or ecosystem recovery of the Gulf Coast.
- A certification that all included projects, programs, and activities do not exceed the 25 percent funding limit for infrastructure.
 - If the state intends to claim an exception to this limitation in accordance with the RESTORE Act, the state must provide the percentage to be spent on infrastructure, evidence that the environmental restoration needs of the state have been met, and whether the state has provided public notice of its intent to claim an exception.
- A description of how each project, program, and activity is consistent with the Goals and Objectives of this Plan. The Council views "consistent" to mean
 - Each eligible project, program, and activity will further one or more of the five Goals; *and*
 - will not negatively impact the Gulf Coast ecosystem.
- A description of the process the State will use or has used to ensure appropriate public and tribal participation and transparency in the project, program, and activity selection process.
- A description of the financial controls and other financial integrity mechanisms to be used to assure the public and Congress that funds have been managed appropriately to further the purposes of the RESTORE Act.
- A description of the methods the State will use to measure, monitor, and evaluate the outcomes and impacts of funded projects, programs, and activities.

The following elements may be included and will be useful to the Council in evaluation and approval or disapproval of State Restoration Expenditure Plans:

- To the extent known, a description of any certain or prospective collaborations or partnerships to be used or created through the selection process.
- To the extent known, a description of any additional resources that will be leveraged to meet the goals of the State Expenditure Plan.

Additionally, the Council should delineate a process by which it will evaluate the sufficiency of a submitted State Restoration Expenditure Plan, including guidelines for which elements that the Council will consider favorably and unfavorably.

Project Recommendations. We previously provided specific, detailed project recommendations for inclusion in a three-year priority project and program list. Though we acknowledge the Council's reasons for not producing the three-year priority project and program list on the timeline set forth in the statute, *we recommend that the Draft Initial Comprehensive Plan acknowledge that an early start on a major Mississippi River diversion and acceleration of barrier island renewal in the Delta are necessary cornerstones of an effective Gulf-wide response to which we can all commit. As the Council develops the three-year priority project and program list, we urge the Council to incorporate our project recommendations.*

Project Sponsorship. We appreciate that the Draft Initial Comprehensive Plan specifies a process for Council members to sponsor projects and programs. While we recognize that many decisions will be project-specific, *we recommend that the Council further define the roles and responsibilities of the sponsor agencies tasked with implementing restoration projects. We also recommend that the Council develop a process to ensure coordination between sponsoring entities and projects.*

We recommend that future project lists identify the sponsor agency or entity for public consideration, transparency, and accountability.

In addition, we recommend that the Council retain and provide guidance and oversight during planning, design, construction, completion, and management of sponsored projects.

Advisory Committees. The Draft Initial Comprehensive Plan lists establishment of one or more advisory committees as a near-term next-step. We believe the RESTORE Act contemplates that the Council will establish advisory committees on an as-needed basis. *We recommend, however, that the advisory council process be structured in a way that ensures no interference or undue delay to restoring the ecosystem.*

Science must guide Comprehensive Plan development; project selection, prioritization, implementation, monitoring, and adaptive management; and State-specific Restoration Plan evaluation. *We recommend that the Council establish an external, independent Science Advisory Committee as soon as practicable to review restoration plans after providing the public an opportunity to consider and comment on the charge and makeup of such a Committee. We also recommend that the Council further establish procedures and methods for ensuring that implementation decisions are made based on the best available science. We encourage the Council to develop framework for the scientific process for project and program selection and provide the public an opportunity to consider, commend, and expand upon the framework.*

Science Integration. To inform the development of the Comprehensive Plan and assist the Council with responsibilities under the State Restoration Expenditure Plan Component, the Council must “collect and consider scientific and other research associated with restoration of the Gulf Coast Ecosystem.” *We support the provisions in the Draft Initial Comprehensive Plan indicating the inclusion of science-based decision making to select projects and programs based on the best-available science.*

As the restoration projects and programs are implemented, it will be critical that scientists are engaged throughout project planning and design with project engineers and managers to ensure that projects succeed and goals are met. We previously provided specific science integration recommendations and urge that they be adopted as the Council moves forward.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
LOIS SCHIFFER

Question 1. Apalachicola Bay Oyster Fishery Collapse—The Apalachicola Bay oyster fishery collapsed in 2012 as a result of the long-term drought and illegal harvesting, and over 2,500 jobs were impacted as a result of this disaster.

It is my understanding that NOAA needs additional information to document a fishery failure before it can declare an emergency. Can you update me on the status of this declaration? Would a declaration make oyster recovery projects a higher priority for RESTORE or Natural Resources Damages funding?

Answer. On September 6, 2012, Florida Governor Scott asked the Secretary of Commerce to determine whether the Florida oyster fishery suffered a commercial fishery failure in response to excessive drought conditions in Apalachicola Bay and elsewhere in the Florida Panhandle. On August 5, 2013, the state of Florida provided NOAA with a report that included landings and revenue data from the 2012–2013 winter fishing season, which showed that within the last year, landings on the Florida west coast oyster fishery had declined nearly 60 percent, with a 44 percent reduction in revenues. This decline in revenues was an unusual occurrence in this fishery and is not part of a cyclical downturn in revenues. On August 12, 2013, Secretary Pritzker declared a commercial fishery failure for the oyster fishery along the west coast of Florida. The fishery resource disaster resulted from excessive drought conditions in Apalachicola Bay and elsewhere in the Florida panhandle during the 2012–2013 winter fishing season.

The Trustees continue to evaluate injuries to oysters as a result of the *Deepwater Horizon* oil spill and the appropriate restoration approaches to restore for those injuries. Depending on the outcomes of these OPA evaluations, NOAA and our co-Trustees will assess which oyster recovery projects can compensate the public for those injuries. Since NOAA and our co-Trustees must make NRDA project selection decisions based on OPA and the NRDA regulations, a declaration for a commercial fishery failure does not by itself make oyster recovery projects a higher priority for *Deepwater Horizon* NRDA funding.

Question 2. Florida Centers of Excellence—The RESTORE Act allows 2.5 percent of the funds to be awarded for research, which we named the Centers of Excellence. It was the intent of the RESTORE Act to define Florida’s Center of Excellence as the Florida Institute of Oceanography. Here is how it is described in statute:

“a consortium of public and private research institutions within the state, which shall include the Florida Department of Environmental Protection and the Flor-

ida Fish and Wildlife Conservation Commission, for that Gulf Coast State (§ 1605 (b)).

Is it your understanding the statute define FIO as Florida's Center of Excellence? Answer. In Section 1605, the RESTORE Act states that "the duties of a Gulf Coast State under this section shall be carried out . . . for the State of Florida, a consortium of public and private research institutions within the state, which shall include the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission, for that Gulf Coast State." NOAA does not have a role in the selection of Centers of Excellence under Section 1605. Once the Treasury regulations are finalized, it is NOAA's understanding that an announcement will be made regarding which Florida institution will ultimately receive funding for the Center of Excellence.

Question 3. Fisheries Data Enhancement—How is NOAA currently contemplating using funds from either the RESTORE Act or Natural Resources Damages payments to enhance and expand fisheries data collection and fisheries science in the Gulf?

Answer. NOAA is restricted from using the RESTORE Science Program funds to support any current or planned research led by NOAA, unless agreed to by the grant recipient. Consultations with the Gulf of Mexico Fishery Management Council and the Gulf States Marine Fisheries Commission and other key constituents will help determine if exceptions to this are appropriate; however, NOAA will continue to support its fisheries stock assessment activities through annual appropriations. NOAA recognizes the need to advance our current understanding of fisheries in the Gulf of Mexico. The Program is shaped such that it considers the ecosystem in a holistic manner, of which fisheries are considered an integral component.

In addition to the draft goals described for the program, which include supporting healthy, diverse and sustainable living coastal and marine resources, the Program's focus areas will incorporate elements that will address unique fisheries needs:

- Conducting periodic "state of health" assessments for the Gulf will require development, monitoring, and modeling of ecosystem indicators, including those specifically related to fisheries in both state and Federal waters, to inform regular assessment activities and evaluate success of restoration project.
- Studies examining ecosystem processes, functioning and connectivity a combination of laboratory and at sea approaches will help provide foundational information to support fisheries science as well as restoration activities.
- Investment in the next generation of observing and monitoring technologies, and data integration tools will support development of tools to monitor resources, including fisheries and protected species, and enhance and improve fishery management in the Gulf.

In accordance with the Oil Pollution Act (OPA) and NRDA regulations, NOAA and our co-Trustees will need to carefully evaluate the extent to which enhancing and expanding fisheries data collection and fisheries science in the Gulf can compensate the public for specific oil spill injuries. The NRDA process for the *Deepwater Horizon* oil spill is ongoing, and, as such, the Trustees continue to evaluate the nature and extent of the injuries to natural resources from the release of the oil, quantify injuries, including those to marine fish, and identify possible approaches to restore for those injuries. OPA gives the Trustees a mandate to restore, rehabilitate, replace, or acquire the equivalent of the damaged natural resources. To meet this mandate, the Trustees seek to restore injured resources and services to the condition they would have been in had the spill not occurred, and to compensate the public for the losses that occur during the time it takes the resources to recover to conditions at the time of the spill. The Trustees must select projects that produce benefits that are related, or have a nexus, to natural resources injured, and associated service losses resulting from the oil spill.

Through the Trustee's solicitation of public input, we have received a range of proposals to address injuries to marine fish. Those proposals range from funding for modified gear, to temporary fishing responses, to marine protected areas, to expanded science to support management decisions. Some of these proposals are more complex than others and have various levels of benefits to injured natural resources. The Trustees continue to evaluate injuries to fish and their habitats and the appropriate restoration approaches to restore for those injuries. Depending on the outcomes of these OPA evaluations, NOAA and our co-Trustees will assess the extent to which enhanced or expanded fisheries data collection and fisheries science in the Gulf can compensate the public for those injuries.

Question 4. Restoration Project Selection Process—The Gulf Restoration Council recently released its plan for ecosystem restoration. However, the plan does not indicate how projects will be selected. Can you describe how the selection process will work and how priorities will be weighted?

Answer. The Gulf Restoration Council adopted its Initial Comprehensive Plan on August 28, 2013. The Plan sets out a project and program selection process for the Council-Selected Restoration Component. The Plan outlines the following process:

The Council will periodically request proposals from its eleven State and Federal members. Individual Council Members may solicit and then choose to submit projects and/or programs to the Council for consideration. The Council will provide opportunities for the public to offer ecosystem restoration ideas through its website and public meetings, and Council Members will consider these ideas when developing their proposals. The Council will encourage coordination and collaboration with other regional efforts.

Proposals submitted to the Council from its Members will be evaluated according to a three-step process:

- a. Eligibility Verification—The Council will verify the eligibility of each proposal (*i.e.*, determine whether the proposal is complete and meets the minimum set of requirements under applicable law).
- b. Coordination Review—In order to avoid duplication and maximize benefits from collaboration, the Council will review eligible proposals for potential coordination opportunities, both within other RESTORE Act components and across the other Gulf Coast restoration efforts.
- c. Evaluation—The Council Members will cooperatively evaluate proposals against the Evaluation Criteria and will draw on experts as needed. Following this evaluation, recommended proposals will be forwarded to the full Council for further consideration.

The Council will review the recommendations made through the evaluation process and select proposals for funding—the Funded Priorities List. The Council will publish the Funded Priorities List as an addendum to the Plan and provide opportunity for public comment. This list will assign primary authority and responsibility for each of the projects and programs to one of the eleven Council Members.

Question 5. Bluewater Ecosystem Restoration—NOAA is actively involved in the NRDA process, and has supported a number of coastal restoration projects using early restoration funds. However, the spill impacted a large amount of the open Gulf, or bluewater, ecosystem.

What is NOAA doing to improve bluewater ecosystem health, specifically valuable commercial and recreational species like tunas, swordfish, and billfish and their habitats?

Answer. The NRDA process for the *Deepwater Horizon* oil spill is ongoing, and, as such, the Trustees continue to evaluate the oil spill injuries, including those to bluewater resources, and possible approaches to restore for those injuries. The NRDA injury assessment is evaluating injuries to bluewater resources like marine fish, invertebrates, marine mammals, sea turtles, deepwater corals, and others. The results of the injury assessment for these bluewater resources will help guide the selection of appropriate restoration projects to restore for these injuries. The OPA gives the Trustees a mandate to restore, rehabilitate, replace, or acquire the equivalent of the damaged natural resources. To meet this mandate, the Trustees seek to restore injured resources and services to the condition they would have been had the spill not occurred and to compensate the public for the losses that occur during the time it takes the resources to recover to conditions at the time of the spill.

Over the course of the NRDA process, the Trustees assess the nature and extent of the injuries to natural resources from the release of the oil, quantify injuries, and identify possible restoration projects. The Trustees must select projects that produce benefits that are related, or have a nexus, to natural resources injured and associated service losses resulting from the oil spill.

Through the Trustee's solicitation of public input, we have received a range of proposals to address injuries to bluewater resources, including marine fish like tunas, swordfish, and billfish. Those proposals range from funding for modified gear, to temporary fishing repores, to marine protected areas, to expanded science to support management decisions. Some of these proposals are more complex than others and have various levels of benefits to injured natural resources. The Trustees continue to evaluate injuries to fish and their habitats and the appropriate restoration approaches to restore for those injuries. Depending on the outcomes of these OPA evaluations, NOAA and our co-Trustees will assess which bluewater restoration projects can compensate the public for those injuries.

Question 6. Pilot Program Funding—I have learned of an innovative pilot program to test alternatives to surface longlines in the Gulf that could help preserve iconic Atlantic Bluefin tuna while allowing continued fishing for other tunas and swordfish. If funded by NOAA through the NRDA process, this type of project could provide immediate ecosystem benefits to the Gulf of Mexico and help recover depleted bluefin tuna and billfish populations.

Can you comment on this pilot project, in particular how it could produce a win-win solution that would restore these depleted species while allowing coastal businesses to prosper?

Answer. Outside of the *Deepwater Horizon* NRDA, NOAA is cooperating with researchers working with the Pew Environmental Group, National Fish and Wildlife Foundation, NOVA Southeastern University, and others to demonstrate the effectiveness of fishing gears such as greenstick (used for tunas) and buoy gear (used for swordfish) in the Gulf of Mexico. NOAA is also collaborating with the Louisiana Department of Wildlife and Fisheries on similar research, funded under the Bycatch Reduction Engineering Program, to investigate the effectiveness of greenstick gear. Both greenstick and buoy gear may be legally used by fishermen under current regulations; however, the gears have not “caught on” with fishermen in the Gulf of Mexico. A purpose of the research projects is to demonstrate to fishermen that the gears can be effective and how to use them. Word about these projects has spread among Gulf of Mexico fishermen generating additional interest in using the gears, especially if monetary assistance is available to fishermen.

One of the potential benefits of fishing with greenstick and buoy gear is that there is lower bycatch mortality when compared to pelagic longline fishing, meaning that fish that are not kept are more likely to be released alive when fishing with greenstick and buoy gear.

The Trustees continue to evaluate the oil spill injuries to pelagic finfish, including bluefin tuna, and possible approaches to restore for those injuries. Projects which include gear alternatives to surface longlines have been submitted to the Gulf Spill Restoration Project Database, which solicits NRDA projects from the public to help restore the Gulf of Mexico from damages that occurred due to the *Deepwater Horizon* oil spill. These projects are being evaluated for applicability for NRDA funding, including Early Restoration, and are subject to review and vetting by all NRDA Trustees. Restoration projects must be consistent with criteria included in Section 1006 of the OPA (33 U.S.C. §2706) and the OPA NRDA Regulations (15 CFR §§990 et seq.) to ensure projects adequately restore for injuries caused by the DWH oil spill in a cost effective manner. Projects advanced for Early Restoration consideration must be negotiated with BP for approval of project scope, costs, and crediting of injury. NOAA considers the advancement of alternative gear in the Gulf of Mexico to be important for evaluation for NRDA funding applicability and continues to work to develop and refine potential alternative gear efforts.

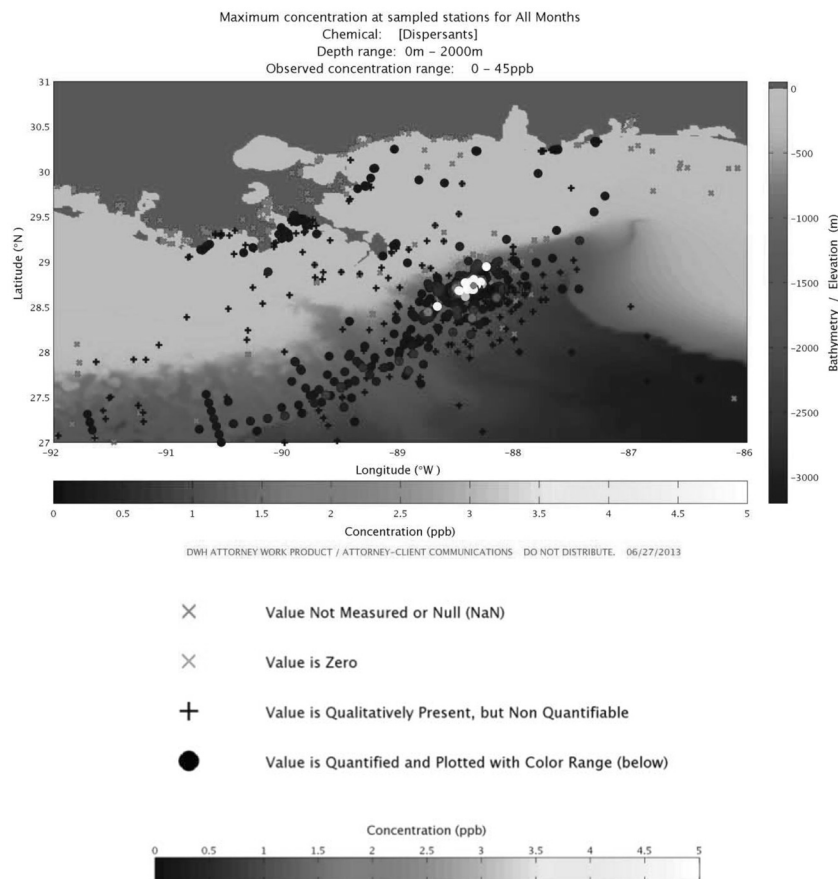
RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. ROGER F. WICKER TO
LOIS SCHIFFER

Question. Based on the progress to date on the natural resources damage assessment, what has NOAA learned about the environmental impacts of the dispersant used in response to the *Deepwater Horizon* spill?

Answer. In order to determine the environmental impacts of the dispersant used in response to the *Deepwater Horizon* oil spill, the Natural Resource Trustees have engaged a combination of field, laboratory, and numerical modeling approaches as a critical part of the *Deepwater Horizon* Oil Spill Natural Resource Damage Assessment (NRDA). Field studies were performed to document environmental conditions, evaluate exposure by measuring *in situ* contaminant concentrations, and assess the condition of biological resources through a comprehensive biota sampling program that included multiple life stages of fish and crustaceans, phytoplankton, and zooplankton. Combining these field studies with controlled laboratory studies designed to assess the effects of oil and dispersants on Gulf of Mexico biota allow the Trustees to interpret and quantify injury impacts at the broad spatial and ecological scale necessary for this assessment. In addition, the Trustees are evaluating and incorporating relevant environmental and exposure data from non-NRDA sources including data from other agencies and academic research.

Immediately following the spill, the Trustees collected and evaluated over 6,000 samples throughout the water column for presence and concentration of dispersants. These data were collected to characterize the extent of the dispersant contamination across the Gulf of Mexico, and results of this NRDA effort are displayed in the figure below. The vast majority of the dispersants applied at depth (at the blowout)

remained at depth in a plume between 900–1,300 m, that extended for up to or beyond 300 km to the SW of the wellhead, with limited data demonstrating it extending 10–15 km to the N–NE. Dispersant components were also detected in sediments up to 50 miles away from the wellhead. Some of the dispersants applied at the surface were transported across the Gulf of Mexico into the nearshore environment, but those concentrations are considerably lower than those in the offshore environment (largely at depth) as shown in the figure.



The Trustees have also undertaken a comprehensive toxicity testing program designed to evaluate the adverse effects of both the oil and dispersants on marine organisms in the Gulf of Mexico. These toxicity tests involved exposing test organisms to samples of the released oil, dispersants, and dispersed oil, alone and in various combinations, across a range of concentrations. A wide variety of representative marine and estuarine species have been tested as part of this program. To date, this portion of the testing program includes 10 species of fish, invertebrates, and shellfish (eastern oyster, blue crab, fiddler crab, grass shrimp, gulf killifish, inland silverside, mahi-mahi, red drum, sheepshead minnow, and speckled sea trout), a wide range of life stages (gametes, larvae, juveniles, and adults) and as many as 10 different private, government and university laboratories. The dispersant Corexit 9500 has been tested alone and in combination with *Deepwater Horizon* oils ranging from “neat” unweathered oil to highly weathered slick oil.

In addition to toxicity testing, Trustees have also conducted extensive chemical and physical characterizations of dispersant and dispersed oil mixtures to determine chemical composition and droplet size and/or frequency in the exposure solutions or water accommodated fractions used in these tests. Finally, Trustees are also inves-

tigating the toxicity of dispersant and dispersed oil in the presence of ultraviolet light (sunlight).

Preliminary results from toxicity testing with dispersant alone indicates that the dispersants themselves are less toxic than the oils they are dispersing. For many of the tests, the Trustees have tested the effects of oil without dispersant and chemically dispersed oil on the same species and life stage. Generally, the dispersant causes the oil to break into small droplets, which theoretically results in enhanced dissolution of polycyclic aromatic hydrocarbons (PAHs) from the oil droplets into the water. This can result in increased exposure of the organisms to the toxic components of the oil. Our preliminary results indicate that the effects of the dispersant are not consistent across different species, life stages, and oils. In some tests, adding dispersant to the oil results in no apparent increase in the toxicity. In others, oil toxicity increases as much as 10-fold when it is dispersed. Tests are ongoing to determine the variables controlling toxicity and to determine the likelihood that the application of dispersant will increase the toxicity of the oil.

Overall, the results of the ongoing toxicity testing program provide a means to infer the nature and extent of different types of adverse impacts to aquatic organisms based on measured and modeled concentrations of oil and dispersants in the water column. Because of the enormous spatial scale affected by the presence of oil and dispersants, and over which studies were performed, detecting changes in natural resources by observing or counting organisms in the field is extremely difficult and often impractical. To effectively deal with this issue, the Trustees are using numerical models that combine results of these field and laboratory studies, using estimated and measured water column concentrations in comparison to laboratory and field toxicity test results to quantify the extent of toxicity and resultant effects on the natural resources found throughout the northern Gulf of Mexico. Using computer modeling enables interpretation and quantification of injuries at the broader spatial and ecological scale necessary for this extensive NRDA.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARCO RUBIO TO
LOIS SCHIFFER

Question 1. When will the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology Program be fully established?

Answer. As required by the RESTORE Act, NOAA established a Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology Program, commonly known as the NOAA RESTORE Act Science Program, in January 2013. Since January, NOAA has established an Executive Oversight Board, selected a Gulf of Mexico-based Director for the Program, and established a cross-NOAA science support team, with U.S. Fish and Wildlife Service representatives. This team is working diligently on developing and implementing engagement opportunities for Gulf of Mexico partners and developing a science plan for the Program. Initial input to the science plan will inform the first Request for Proposals, anticipated this fall, pending completion of the Treasury regulations for the RESTORE Act and the release of funds. In the meantime, NOAA continues to build internal operating policies and procedures to manage the program.

Question 2. What is NOAA currently contemplating in terms of using funds from either the RESTORE Act or NRDA to enhance and expand fisheries data collection and fisheries science in the Gulf?

Answer. Per the RESTORE Act, NOAA is restricted from using the RESTORE Act Science Program funds to support any current or planned research unless agreed to in writing by the grant recipient; however, NOAA will continue to support its fisheries stock assessment activities through annual appropriations.

NOAA recognizes the need to advance our current understanding of fisheries in the Gulf of Mexico. The RESTORE Act Science Program is shaped such that it considers the ecosystem in a holistic manner, of which fisheries are considered an integral component. In addition to the draft goals described for the program, which include supporting healthy, diverse, and sustainable living coastal and marine resources, the Program's focus areas will incorporate elements that will address unique fisheries needs. For example, conducting periodic "state of health" assessments for the Gulf will require development, monitoring, and modeling of ecosystem indicators, including those specifically related to fisheries in both state and Federal waters, to inform regular assessment activities and evaluate success of restoration projects.

In accordance with the Oil Pollution Act (OPA) and NRDA regulations, NOAA and our co-Trustees will need to carefully evaluate the extent to which enhancing and expanding fisheries data collection and fisheries science in the Gulf can compensate

the public for specific oil spill injuries. The NRDA process for the *Deepwater Horizon* oil spill is ongoing, and, as such, the Trustees continue to evaluate the nature and extent of the injuries to natural resources from the release of the oil, quantify injuries, including those to marine fish, and identify possible approaches to restore for those injuries. OPA gives the Trustees a mandate to restore, rehabilitate, replace, or acquire the equivalent of the damaged natural resources. To meet this mandate, the Trustees seek to restore injured resources and services to the condition they would have been in had the spill not occurred, and to compensate the public for the losses that occur during the time it takes the resources to recover to conditions at the time of the spill. The Trustees must select projects that produce benefits that are related, or have a nexus, to natural resources injured, and associated service losses resulting from the oil spill.

Through the solicitation of public input, the Trustees have received a range of proposals to address injuries to marine fish. Those proposals range from funding for modified gear, to temporary fishing repeses, to marine protected areas, to expanded science to support management decisions. Some of these proposals are more complex than others and have various levels of benefits to injured natural resources. The Trustees continue to evaluate injuries to fish and their habitats and the appropriate restoration approaches to restore for those injuries. Depending on the outcomes of these OPA evaluations, NOAA and our co-Trustees will assess the extent to which enhanced or expanded fisheries data collection and fisheries science in the Gulf can compensate the public for those injuries.

Question 3. Fisheries biologists in the Gulf have said it is difficult for them to judge the difference in Gulf fish from before the spill with fish after the spill because they had so little fishery data when the spill happened. What kind of investments is NOAA prepared to make in fisheries research in the Gulf to help establish better baseline data on fish with spill recovery funds?

Answer. For the RESTORE Act Science Program, we anticipate supporting studies examining ecosystem processes, functioning, and connectivity using integrative field and laboratory efforts, which will help provide foundational information to support fisheries science as well as restoration activities. Additionally, conducting periodic “state of health” assessments for the Gulf of Mexico will require development, monitoring, and modeling of ecosystem indicators, including those specifically related to fisheries in both state and Federal waters, and will help inform regular assessment activities.

NOAA recognizes the need to enhance its “rapid response” capability and enable computer-intensive analyses, which depend on data from a variety of platforms, including satellites, planes, ships, and buoys. NOAA is committed to improving its capability to detect, track, and measure the impact of unexpected, episodic disturbances, especially large oil spills. This capability requires that: (1) each disturbance location of origin is pinpointed and its subsequent path and potency are monitored over time; and (2) water conditions (*e.g.*, contaminant levels) and organism health and abundance are measured before (baseline), during and after the disturbance.

Question 4. NOAA collects most of its data on fish stocks by analyzing what a very small percentage of fishermen are catching. Biologists say that is giving us an extremely limited picture of the fish stocks in the Gulf and that more “fisheries independent” data is needed. Is NOAA planning to use oil spill recovery money to expand analysis of fish stocks by examining where the fish live rather than just relying on what fishermen are catching?

Answer. NOAA recognizes that more fishery-independent surveys and studies are needed and plans to pursue these activities, to the extent allowed under our RESTORE Act and OPA authorities, as described in question (3) above.

NOAA, in partnership with other federal, state, and academic entities has a Gulf of Mexico fishery-independent sampling program that has been in operation for over 30 years. NOAA is keenly aware of the strengths and weaknesses of fishery-dependent and fishery-independent data and the challenges associated with their collection. For example, to be useful in stock assessments, the latter are typically far more expensive than the former. Simultaneous collection of fish and habitat information is optimal, regardless of whether data are derived from fishing vessels or gathered by fishery scientists using their own equipment.

NOAA anticipates supporting studies examining ecosystem processes, functioning, and connectivity using a combination of laboratory and at sea approaches, which will help provide foundational information to support fisheries science as well as restoration activities. Furthermore, investing in the next generation of observing and monitoring technologies will enhance our ability to monitor resources, including fisheries and protected species.

Question 5. What steps are being taken to expedite project construction and to make sure these projects don't get caught up in unnecessary delays?

Answer. The Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act require NOAA to evaluate the impacts of restoration projects on protected species and essential fish habitat. In future years, we expect substantial increases in consultation requests as a result of restoration projects initiated through the RESTORE Act, the NRDA process, and criminal settlements with the responsible parties, and we are actively working to develop guidelines and processes aimed at frontloading and streamlining such consultations so they can be completed in a timely manner. Specifically, we are looking for ways to provide more transparency and predictability about our protected species and habitat conservation needs so project applicants can strategically avoid proposing projects in important conservation areas or during times that may be unnecessarily harmful to our trust resources. For example, we aim to provide project applicants and permitting agencies a standardized process to address consultation requirements and best management practices for each project type, and will identify conservation priority areas, mitigation, and criteria for ESA determinations. Also, we are looking for ways to increase our efficiency in conducting consultations; for example, by evaluating multiple related projects in single, programmatic-level consultations and/or by developing a framework for expediting project-specific consultations if appropriate.

NOAA is proactively engaged in state-specific RESTORE Act regulatory planning work groups, in which state and Federal regulatory agencies are discussing project types and potential sites for restoration projects. During this early planning stage, we are providing technical assistance and advising of issues that should be considered in project design to help ensure the project construction application is as complete as possible to initiate ESA and essential fish habitat consultations, as appropriate. These issues include what NOAA trust species may be in the project area, what types of habitat may be impacted, best management practices, potential mitigation options, and adaptive management and monitoring recommendations.

NOAA is currently evaluating the workforce requirements to be able to engage fully with the states, Federal permitting agencies, and other partners to implement these streamlining measures. With the anticipated number and complexity of projects to be proposed under the RESTORE Act, NRDA, criminal settlement funding, and other existing programs targeted for coastal restoration.

Question 6. What are the fishery data collection projects the agency is considering under NRDA?

Answer. As described in the response to Question 3 (above), NRDA Trustees continue to evaluate injuries to fish and their habitats and the appropriate restoration approaches to restore for those injuries. Depending on the outcomes of these OPA evaluations, NOAA and our co-Trustees will assess the extent to which fisheries data collection projects can compensate the public for those injuries.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
HON. RACHEL JACOBSON

Question 1. Coordinating Restoration Efforts—The Natural Resources Damages Assessment (NRDA) process, RESTORE Act, and the criminal settlement are all happening concurrently. In addition, there are other ecosystem restoration efforts in these states that began long before the disaster. How are your respective entities coordinating to avoid duplication?

Answer. The Department of the Interior, along with NOAA, EPA, USDA and Alabama, Florida, Louisiana, Mississippi and Texas are members of both the RESTORE Council and the Trustee Council, which is established pursuant to the Oil Pollution Act to conduct the NRDA for the *Deepwater Horizon* oil spill. As a result, there is shared knowledge and close coordination among the members of the RESTORE Council and the Trustee Council on the work that is being undertaken in these two forums to address the restoration needs of the Gulf of Mexico. Many scientists from these agencies who have worked on the BP Oil Spill NRDA process are also engaged at some level with RESTORE Act restoration efforts. Overall, there is a high degree of coordination among the Gulf Coast States and the Federal agencies to coordinate the work so as to avoid duplication and ensure that we achieve maximum benefits from the fiscal resources that are allocated to the restoration of the Gulf from among the various funding sources.

Question 2. Restoration Project Selection Process—For the RESTORE Act, the draft comprehensive plan lists over 60 pages of potential projects, but the planning document says that “this list does not represent a list of projects and programs that

the Council will prioritize or necessarily fund.” How can we ensure the project selection process is transparent and is open to the public?

Answer. The Department of the Interior is working within the RESTORE Council to ensure that the projects and programs that are funded by the Council will be selected through a transparent process with opportunities for public input. The RESTORE Act requires the Initial Comprehensive Plan (Plan) to include “a list of projects and programs authorized prior to the date of enactment of [the Act] but not yet commenced, the completion of which would further the purposes and goals of [the Act].” In accordance with the Act, Council Members have developed a list of projects and programs. In general, Council Members put forward projects and programs that have either been federally authorized by Congress or approved under a State program, plan, or action. This information will enable the Council and the public to have better awareness of projects and programs that have already been authorized in the region. The list does not represent a list of projects and programs that the Council will prioritize or necessarily fund.

Question 3. Will we have to have another public comment period?

Answer. Yes. Consistent with the Council’s commitment and efforts to date in ensuring robust public input throughout the entire Plan development process, the Department of the Interior fully supports the Council’s commitment to ensure that all projects that the Council proposes to fund be subject to extensive public review and comment.

Question 4. What will the RESTORE Council be looking for when evaluating State-specific Restoration Plans?

Answer. The Council is in the process of establishing the criteria that it will use to evaluate state plans. Interior will recommend that the Council ensure consistency between State-specific Restoration Plans and the overall goals and objectives of the Council’s Initial Comprehensive Plan. In our view, we would look to see if the proposals and projects in the State-specific Restoration Plans further the achievement of the goals of the Council’s Initial Comprehensive Plan. As set forth in the Council’s Draft Initial Comprehensive Plan, these goals include:

- Restore and Conserve Habitat
- Restore Water Quality
- Replenish and Protect Living Coastal and Marine Resources
- Enhance Community Resilience
- Restore and Revitalize the Gulf Economy

Question 5. Assessing Ecosystem Restoration Progress—As you know, the National Academy of Sciences (NAS) convenes an Independent Science Review Panel composed of experts in restoration science for Everglades Restoration. The panel produces reports to Congress every 2 years, which will include an assessment of ecosystem health and other measures of progress in restoration of the Everglades. These reports are integral in selecting future restoration projects because scientists examine changes to the ecosystem based on progress and changes in the ecosystem. Do you think the RESTORE Council should adopt a similar reporting mechanism that updates the status of restoration with the new developments within the ecosystem?

Answer. The Department of the Interior places considerable value on the biannual review conducted by the National Academy of Sciences (NAS) of the Everglades restoration program. The NAS review has assisted Federal and state restoration managers in adaptively managing the Everglades restoration program and in addressing some of the highest priority resource needs. Interior would support Council consideration a similar approach in the Gulf Coast restoration effort as an NAS review could provide independent scientific review of the restoration of the Gulf of Mexico ecosystem.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. AMY KLOBUCHAR TO
HON. RACHEL JACOBSON

Question. Restoration of Public Waters and Lands—Coming from Minnesota, where tourism is our 5th largest industry and the source of nearly 11 percent of our total private sector employment, I’ve seen first-hand the positive economic impact of this industry. The Boundary Waters Canoe Area and Voyageurs National Park in Minnesota draw visitors from across the country and around the world, both are protected waterways and lands.

The Department of the Interior maintains many scenic areas, including the National Seashores on the Gulf Coast which were affected by the Gulf oil spill, many

of which are tourist destinations supporting local economies. Could you talk about the progress of the restoration and the importance of our public waters and lands to local tourism economies?

Answer. The Department of the Interior manages 3.5 million acres in the Gulf region, on 45 national wildlife refuges and nine national parks in all five Gulf Coast States that are critical to the long-term health, economy and resiliency of Gulf Coast communities, including local tourism. The lands we manage support an array of culturally and biologically diverse habitats, including barrier islands, coastal marshes and estuaries, wetlands and beaches which collectively provide important habitat, as well as recreational and tourism opportunities. Hunting, fishing, bird watching and other wildlife-dependent recreation contribute more than \$25 billion annually to the Gulf Coast region's economy. According to the Bureau of Labor Statistics, the leisure and hospitality sector of the region's economy provides 8 percent of all the region's jobs. Beach visitors, campers, and day visitors to National Parks and National Wildlife Refuges throughout the Gulf of Mexico contribute tourism dollars. On any given day, hundreds of boats are recorded visiting Gulf Islands National Seashore also contributing to local economies in terms of launch fees, boat fuel, food and beverages purchased.

In the three years since the *Deepwater Horizon* oil spill, Interior, together with our *Deepwater Horizon* Natural Resource Damage Assessment (DWH NRDA) co-trustee agencies in the Federal and state governments, has made significant progress to address injuries to the natural resources resulting from the spill.

A NRDA requires that as the DWH NRDA trustees seek to make the public whole after an oil spill, that they assess both the type and quantity of natural resources lost as well as the lost use of those resources. Via early restoration, which was made possible by an unprecedented agreement through which BP is providing \$1 billion for restoration projects *prior* to completion of the injury assessment, many of the first NRDA-derived restoration projects will enhance tourism and provide a boost to the Gulf Region's economy.

The Trustees have approved ten early restoration projects, a number of which address lost use or will indirectly enhance tourism and other recreational activities. For example, the Department of the Interior has partnered with the state of Alabama to implement a dune restoration project that extends along Bon Secour National Wildlife Refuge and other publicly and privately-owned land in Alabama. The Department has also partnered with Florida, Alabama and Mississippi to implement projects that restore and/or enhance habitat for beach-nesting birds and sea turtles. Functional dunes and wildlife nesting areas help preserve tracts and habitat that are important not only to wildlife but also to tourists and other recreationalist who engage in wildlife watching and other nature-based activities.

Most recently, the DWH NRDA Trustees have announced a list of projects to be considered in future phases of early restoration. This list includes two National Park Service projects that will directly and significantly improve visitor use at Gulf Islands National Seashore. The Beach Enhancement Project at Gulf Islands National Seashore would remove tens of thousands of cubic yards of asphalt fragments and road base material that has been scattered over hundreds of acres and approximately eleven miles of the park. The Ferry Boat Access to Ft. Pickens, Gulf Island National Seashore project would provide new ferry service from downtown Pensacola, Florida to Fort Pickens. Both the asphalt removal project and the ferry projects would significantly enhance visitor access and the quality of the visitor experience within the parks. Other tourism and recreation-oriented projects have been proposed by each of the five Gulf States. Examples of these projects include boat ramp, boardwalk, and pier construction and restoration in Florida; and in Mississippi construction of a science education center, ferry and beach-front promenade.

The Department of the Interior is working with its co-trustees to ensure restoration of the natural resources we are responsible for managing as well as restoration of the lost use of those resources caused by the oil spill.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. MARCO RUBIO TO
HON. RACHEL JACOBSON

Question. What are the priorities that your agency and NOAA have identified under the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Program?

Answer. The Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Program (Program) team recently produced a Science Plan Framework document which is built upon the research priorities identified in section 1604 of the RESTORE Act. The Framework lays out the vision, goals, guiding principles,

and focus areas to guide the development of a Science Plan. The Science Plan Framework document is available at <http://restoreactscienceprogram.noaa.gov/>. Building upon the Framework Plan, the Program team will consult with the Regional Gulf of Mexico Fishery Management Council and Gulf State Marine Fisheries Commission and seek input from the public, universities, and various other relevant organizations to produce a detailed Science Plan. This Plan will be the basis upon which Gulf science research proposals will be evaluated and recommended for funding. To support the Plan, we are building upon extensive research, monitoring and modeling plans that exist for the Gulf of Mexico and coordinating with nascent science efforts, including the State Centers of Excellence and other science components of RESTORE, the National Academies of Science Gulf Program, NRDA, and existing Federal and state science and technology programs. As new science refines our understanding of the Gulf, these priorities are expected to evolve to lead the agencies closer to our vision—the long-term sustainability of the Gulf of Mexico ecosystem and the communities that depend on it.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
JEFF TRANDAH

Question 1. Restoration Project Funding—The criminal settlement agreements with BP and Transocean clearly indicated that states will receive a certain percentage of funding for restoration projects. But, it's unclear how NFWF will meet the project funding needs that benefit the Gulf as a whole. More specifically, what are you anticipating trying to do by way of addressing habitat and fish and wildlife impacts offshore?

Answer. Under the BP and Transocean criminal plea agreements, payments to NFWF (into what NFWF calls its “Gulf Environmental Benefit Fund” or “GEBF”) are allocated by a formula established within the plea agreements and may only be used to support projects benefitting natural resources in the Gulf Coast states and waters. While NFWF must adhere strictly to the terms of the plea, doing so does not preclude supporting projects that contribute to Gulf-wide ecosystem restoration efforts. NFWF is required to consult with State resource agencies and with NOAA and FWS in identifying projects to receive funding. Through this consultation process, and based on the agencies’ respective roles on both the RESTORE Council and *Deepwater Horizon* Natural Resource Damage (NRD) Trustee Council, the agencies may recommend projects that advance emerging natural resource priorities for the Gulf as a whole. As and when the agencies recommend these types of projects, NFWF will be amenable to considering them for funding from the GEBF.

Question 2. At NFWF are you seeing ideas for blue water projects that will deal with damage in the deep water?

Answer. NOAA is the lead Federal agency with regulatory and programmatic authority offshore in the Gulf. Thus it is expected that NOAA, as part of its consultation with NFWF, will be recommending certain projects that remedy harm to resources adversely affected by the *Deepwater Horizon* oil spill in these environments. NOAA will likely focus on projects that provide both direct and indirect benefit to marine species (e.g., marine fish, sea turtles) throughout their lifecycle.

Question 3. Restoration Project Selection—How is NFWF coordinating project selection with other funds, state, and local governments?

Answer. Under the plea agreements, NFWF is required to consult with the appropriate resource agencies in each state and with NOAA and FWS in identifying projects. This required consultation is the primary means by which NFWF will coordinate its funding decisions with other related activities such as funding decisions made in accordance with the RESTORE Act and those made by the NRD Trustee Council. NFWF itself does not have a formal role under the RESTORE Act or the NRD Trustee Council and therefore must necessarily rely for purposes of coordination on the state and Federal agencies with authority under these programs. The natural resource management plans required under RESTORE and NRD, which will be developed with significant public input and communicated to NFWF by the agencies that created them, will inform NFWF project decisions under the GEBF.

Question 4. Alternative Fishing Gear Pilot Program—NFWF is funding a pilot program to test alternative fishing gears to long lining in the Gulf of Mexico. Based on your evaluation of this project, could it be scaled up so that it could become an alternative to surface longline fishing to protect spawning bluefin tuna?

Answer. NFWF has initiated a cooperative fisheries research project to use four current commercial fishing vessels in three locations around the northern and eastern Gulf of Mexico to evaluate green stick and swordfish buoy gears as potential

environmentally-friendly alternatives to the current pelagic longline fishery, potentially maximizing net economic returns in local waters while reducing bycatch of depleted species such as bluefin tuna. To date, these technologies have shown significant progress in reducing unwanted bycatch in the bluefin tuna fishery. NFWF has recently awarded additional funding to continue this potentially important gear alternative to further test its effectiveness in reducing bycatch.

Preliminary bycatch and economic results from the study fleet suggest that this has potential to be scaled up to become an alternative to surface longline fishing. The economic viability of this gear is dependent on the experience of the captain and the cost of fuel per fishing trip. The cost of fuel is a function of the size of the vessel and, therefore, the economic performance is improved on smaller vessels.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. ROGER F. WICKER TO
JEFF TRANDAH

Question. How is the National Fish and Wildlife Foundation planning to manage financing for larger multi-year projects that will depend on year 4 and 5 payments from BP, given that the Foundation cannot award grants for funds that are not in hand?

Answer. As noted in the question, the National Fish and Wildlife Foundation (NFWF) will only obligate funds to projects once funds have been actually received from either BP or Transocean in accordance with the payment schedule set forth in the plea agreements. This payment schedule will not preclude NFWF from supporting larger, multi-year projects, however. For such projects, NFWF anticipates awarding funds for discrete phases of these projects as funds become available, with payments tied to the achievement of project milestones.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARCO RUBIO TO
JEFF TRANDAH

Question 1. Will you be obligating funds on annual basis? If so, why?

Answer. The plea agreements set forth an annual payment schedule from BP over a five-year period and from Transocean over a two-year period. NFWF will not obligate funds to projects until those funds have actually been received. However, NFWF seeks to obligate funds in a timely manner once they have been received to satisfy the terms of the plea that these funds help remedy harm to Gulf Coast natural resources that were impacted by the *Deepwater Horizon* spill. NFWF anticipates obligating funds on a rolling and project-by-project basis, which will vary as appropriate based on conservation need and opportunity, and to reflect different project types. All recipients awarded project funds through NFWF's Gulf Environmental Benefit Fund will adhere to strict reporting requirements and monitoring and oversight by NFWF to ensure all funds are spent in an expeditious and effective manner and to provide certainty that conservation milestones are being achieved on schedule.

Question 2. For folks or organizations interested in submitting projects for funding, what is the best way for them to offer their projects for funding consideration by NFWF?

Answer. Under the plea agreements, NFWF is required to consult with state resource agencies of the Gulf Coast states, as well as with NOAA and FWS, in identifying projects that meet the terms of the plea agreements. As part of the consultation requirement, each state has agreed to establish a process to individually solicit project ideas, and public input to the extent desired or required, directly through newly-established websites. These sites are being designed to accept project ideas from local governments and other public agencies, non-governmental organizations, and others. Individual state project portals can be found at www/nfwf.org/gulf.

Question 3. How does your organization plan to coordinate with the other activities occurring for example under the Council or in the states? Do you feel confident that the proper coordination will occur?

Answer. To the extent practical, NFWF will coordinate projects under the Gulf Environmental Benefit Fund with emerging priorities and identified needs under RESTORE and the NRD Assessment. The representatives from the state and Federal resource agencies with whom NFWF is required to consult under the plea are in most cases the same individuals appointed by their respective Governors or agency directors to serve on both the RESTORE Council and NRD Trustee Council. In this regard, NFWF is confident that its activities under the Gulf Environmental Benefit Fund will be sufficiently coordinated with and informed by other important

Gulf restoration efforts. That said, because NFWF itself does not have a formal role under the RESTORE Act or the NRD Trustee Council, NFWF must necessarily rely for purposes of coordination on the state and Federal agencies with authority under these programs.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. ROGER F. WICKER TO
TRUDY D. FISHER

Question. What assistance do the state agencies need from Federal entities to ensure that state needs are met?

Answer. Thank you for the opportunity to share our ideas about the states need to ensure that restoration activities in the aftermath of the *Deepwater Horizon* oil spill are executed in an effective and timely manner. As you know, the Oil Pollution Act, which governs the Natural Resources Damage Assessment (NRDA) process following an oil spill, has never been used in circumstances of the magnitude the Gulf States face. We are learning firsthand how Federal agencies' procedures and approaches, considered routine for them, can be cumbersome hurdle s that threaten the success of our timely restoration efforts.

One example is how the Federal National Environmental Policy Act (NEPA) is being interpreted. When project s are exclusively within state borders, we believe that State laws more than adequately protect the environment and address the same issues as NEPA but without the cumbersome Federal steps. In fact, if the Federal NEPA requirements for state projects were removed, Mississippi would have numerous inland projects already underway. At the very least there could be a categorical exclusion for restoration projects under the Oil Pollution Act. These projects are directly related to environmental restoration and are thus inherently beneficial to the environment, not adverse impacts.

Thank you again for seeking our input about the challenges the states face in completing our restoration duties. The *Deepwater Horizon* spill was an unprecedented event and offers us all, both Federal and state entities, an opportunity to improve how we get our jobs done.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
HON. GEORGE NEUGENT

Question 1. Restore Implementation—How can the Federal Government be more helpful to Florida's counties for RESTORE implementation?

Answer. The witness did not respond.

Question 2. State Role in Project Selection—In your testimony you spoke about the Memorandum of Understanding with the state government. Can you please describe the state's role in the Consortium for project selection?

Answer. The witness did not respond.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARCO RUBIO TO
HON. GEORGE NEUGENT

Question 1. Has the consortium created auditing procedures for the money they will be responsible for disbursing?

Answer. The Consortium has not created formal rules and procedures such auditing yet. The Florida Auditor General has developed Draft rules for auditing procedures related to the distribution of funds from the *Deepwater Horizon* Oil spill. The deadline for comments on these rules is August 26, 2013. See *Chapter 10.550, F.A.C. Proposed Rules*.¹ An example of what these rules address includes:

- A requirement for a statement of compliance with relevant State and Federal rules and laws as well as consistency with any relevant grant agreement.
- These rules also define this type of reporting to be related to funds received directly by BP or state/local grants.
- Describing any additional activities necessary for preparing financial audit reports.
- For any year *Deepwater* funds are received or expended, an opinion that those receipts and expenditures are presented fairly.

¹ Rules can be found at: www.myflorida.com/audgen/pages/whatsnew.htm

- A schedule of receipts and expenditures that are not Federal awards or State financial assistance.

As the Consortium progresses, it will adhere to, develop or adopt any necessary rules that fully comply with appropriate Federal and State laws, rules and regulations (many of which are likely forthcoming).

Question 2. Recently, the Council released their draft implementation plan. Did you have any thoughts or comments on their draft?

Answer. Monroe County, as well as several other local governments and the Consortium, submitted formal comments on the Council's Draft Comprehensive Plan.² The Consortium's comments explained the role of the Consortium and additionally raised the following issues:

- Establish the comprehensive plan based on sound science.
- Recognize the benefits of regionalism in project selection.
- Identify economic restoration as a clearly stated plan Objective.
- Prioritize the Objectives consistent with the RESTORE Act.
- Clarify the Council's decision-making process for evaluating, prioritizing and selecting ecosystem restoration projects.
- Clarify the weighting for each criterion identified within the Priority Criteria.
- Streamline Federal regulatory requirements to ensure unhindered planning, project and program implementation; Clarify National Environmental Policy Act (NEPA) analysis requirements.
- For Appendix A, define "authorized but not yet commenced."
- Work with State and local officials to coordinate project selection and refine Appendix A.
- Allow for infrastructure projects and structural enhancements to mitigate risks to coastal resiliency.
- Provide for Administrative and Planning Expense Reimbursement
- Revise the Draft Initial Plan to allow expenditures from Florida's allocation of the Spill Impact Component for the Consortium's administrative and planning costs associated with the development of the State Expenditure Plan.

In addition to many of these same points, Monroe County's comments highlighted the following comments:

- Outline project submittal and assignment procedures.
- Create one set of streamlined project documentation requirements.
- Establish a multi-disciplined Project Review Team for review of Council projects.
- Clarify and establish rolling timeframes for project submittals (example quarterly or twice per year).
- Define how responsible parties for Council projects will be accountable for their implementation.
- Develop timeline for Council Comprehensive Plan Update and the update of the 3-Year Prioritized Project List.
 - For the first 3-Year pipeline of projects rely on the certainty of funding amounts already available.
 - Build upon previous project submittals.
 - Sort projects by type.
- Clarify approach to NEPA analysis at the project and program levels.
- Develop clear time-oriented reimbursement and advance payment procedures.
- Explain the timeline and process for planning consistency determinations (amongst the Council, State and local planning processes).
- Provide more guidance on the State Expenditure Plan development and approval process by the Council.

It will be difficult to embark on those planning efforts expediently without knowing what projects and process the Council will be following. Finalizing a clear Council Comprehensive Plan is extremely important because the State Expenditure Plans

² Consortium comments can be found at: www.fl-counties.com/advocacy/gulf-consortium

and the local government multi-year implementation plans will be required to be consistent with it.

Question 3. For folks or organizations interested in submitting projects for funding, who is the best point of contact at the consortium?

Answer. While the Consortium is not yet at the point that is accepting project submissions directly, the Florida Department of Environmental Protection is actively accepting project submittals through their website. The Consortium's contact is Doug Darling.

Question 4. At this point, do you see any roadblocks in the implementation process? If so, what are they?

Answer. While it is early in the implementation process after the passage of the RESTORE Act, there is the potential for some challenges. We have shared some of these concerns with the Department of Commerce staff and Senator Nelson's office on a recent visit to Washington D.C. For local governments, several aspects of RESTORE Act implementation have the potential to be complex, convoluted, and ultimately, costly to local governments in terms of staff time, local government resources and administrative costs. Several of these "roadblocks" were outlined in our comments on the Council's Draft Comprehensive Plan, but in summary our concerns largely relate to the following:

- *Process for projects and plans.* Processes that are to developed for project approval including multi-year implementation plan development (and approval of them), NEPA review and analysis (and categorical exclusions from NEPA), requirements of the "certification" process for local plans outlined in the RESTORE Act, requirements for funding "previously approved projects and programs";
- *Reimbursement and project documentation.* Expense reimbursement issues including wage and procurement requirements, timeframes and review process for either advance payments or reimbursement, better defining planning assistance and administrative expenses outlined in the RESTORE Act; and,
- *Post-project requirements.* Requirements for post project monitoring, performance measures or milestones and reporting of pre and post project benefits.

We anticipate that many of these issues may be resolved in the Treasury Regulations, which were just released and which we are still digesting. Our view is that the process to be established must be sensitive to the fiscal and staffing constraints that local governments have, and that the easier the process is, the more expeditiously we will be able to start restoring the Gulf of Mexico.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. BILL NELSON TO
ERIC DRAPER

Question 1. Early Restoration Funding—Former Senator Bob Graham and William Riley wrote an op-ed in the *Washington Post* where they criticized the rate at which early restoration money is being spent. Since you have been awarded monies for early restoration projects, can you speak to how they early money is being spent?

Answer. The witness did not respond.

Question 2. State Restoration Plans—In your testimony you say that the state plans should promote restoration and long-term health and sustainability to the maximum extent possible. Determining the maximum extent will require sound science. How is the environmental community working to ensure the best possible science is involved in the state restoration plans?

Answer. The witness did not respond.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. HON. BILL NELSON TO
DR. STEPHEN POLASKY

Question. Restoration Project Prioritization—Can you provide us with recommendations on how the Council should prioritize investments for ecosystem restoration and the long-term health of the gulf?

Answer. The witness did not respond.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. ROGER F. WICKER TO
DR. STEPHEN POLASKY

Question. What specific resiliency efforts do you think would benefit states such as Mississippi?

Answer. Coastal communities are subject to many types of disturbances, both natural (tropical storms and hurricanes), as well as human-caused (economic recessions and oil spills). Resilience of communities refers to how quickly and how completely communities recover from disturbances.

When the specific type of disturbance facing a community is well known, such as when communities are known to face the risk of flooding from storm surge association with hurricanes, there often are specific measures that can be taken to increase community resilience. In the face of risk of damage from waves or flooding from tropical storms and hurricanes, a coastal community can increase resilience by:

- Protecting oyster reefs, coastal marshes, mangroves, and other ecosystems that can absorb wave energy and reduce flood height;
- Investing in infrastructure such as seawalls or levees;
- Redesign and relocate infrastructure and buildings to reduce the risk of wave damage or flooding;
- Improving communications and early warning systems to provide information to people of impending danger;
- Investing in disaster preparedness and planning that allow for more rapid recovery following a damaging storm event.

Similarly, if the risk arises from an oil spill, the resilience of a coastal community can be enhanced by:

- Investing in safety procedures and engineering to reduce the risk of catastrophic accidents;
- Investing in oil spill emergency response capabilities so that both equipment and trained personnel are readily available to quickly respond to any spill that does occur in order to reduce the amount of oil that reaches shore;
- Maintaining healthy coastal ecosystems that recover from oil spills more quickly and completely;
- Investing in disaster preparedness and planning that allow for more rapid recovery following a spill.

In some cases, a disturbance to a coastal community will come as more of a “surprise” (an unexpected event that is difficult to foresee ahead of time). Certain attributes of coastal communities can increase resilience in a wide range of potential disturbances:

- *Maintaining diversity:* financial investors know that diversification of their portfolio reduces risk. Coastal communities that have more diverse economies not reliant on one or two industries will typically be more resilient to economic downturns or disturbances to a particular industry (e.g., a disruption of transportation that affects tourism). Similarly, greater biodiversity in ecosystems typically makes such ecosystems more resilient.
- *Investing in general emergency response capability:* having highly trained and professional police, fire, and medical personnel allows more rapid response to disasters. Having savings to build up adequate financial resources allows ability to respond to many unexpected events.
- *Investing in adaptive capacity and ability to learn:* effectively responding to some disturbances may require gaining knowledge of the disturbance prior to crafting an effective response. For example, emergence of a new disease requires understanding the bacteria or virus that causes the disease before methods to prevent its spread, treat victims, and develop a vaccine, can occur.
- *Improving governance and social cohesion:* help to coastal communities from state and Federal Government is often essential to provide relief in the immediate aftermath of a disaster. Long-term recovery depends on the resourcefulness of the local community affected by the disaster. Communities where people share a sense of commitment and local pride, and have trust in their neighbors and local institutions, typically recover more quickly and more completely to disasters.