



Thousands of miles of oil and gas canals have altered fragile Gulf marshes and allowed saltwater to penetrate coastal wetlands. A football field-size chunk of wetlands vanishes into open water almost every hour.



Restoring the Gulf Coast

In a strange twist of fate, the biggest oil spill in U.S. history may end up saving the South's wetlands and coastlines—if we make the right choices.

By Scott Weidensaul
Photography by Michel Varisco

For more than 15 years I've gone to the Alabama coast every spring to study birds crossing the Gulf of Mexico on their hemispheric migrations. By day the beaches swarm with vacationers, while fishing boats ply the blue-green water beyond the surf line.

Near dusk you hear little more than the sound of waves and the rolling *peeda-weet-weedit, peeda-weet-weedit* cries of willets flashing by on black-and-white wings. Cadres of sanderlings, semipalmated sandpipers, and Wilson's plovers scurry down the beach like the bow wave of a boat. Brown pelicans and least terns wheel in the ocean breeze, and flocks of teal fly in tight forma-

tions beyond the breakers. Farther offshore, the white lances of hunting gannets plunge, arrowlike, into the water for fish. Then, as darkness settles over the coast, dozens of oil- and gas-drilling rigs illuminate the horizon like waterborne cities.

In 2010 I had scarcely returned home from our field season on the Gulf when the horrific news broke: an explosion on a huge oil rig named the Deepwater Horizon, 11 workers dead, and, it soon became clear, the worst ocean oil spill in the nation's history. More than 205 million gallons would spew into the Gulf from a seemingly unstoppable gusher a mile below the surface (along with, largely unseen, 2 million gallons of potentially toxic

	2010				
A SHORT HISTORY OF THE BP OIL SPILL	January 31 The Deepwater Horizon oil rig arrives at the Macondo well site and replaces another drilling rig.	April 20 Deepwater Horizon explodes. Eleven workers die.	April 22 The rig sinks.	April 24 A leak is discovered; an estimated 5,000 barrels of oil a day are being released into the Gulf.	May 2 BP's chairman defends the company's safety record.



Booms are used to keep oil from reaching sensitive bird rookeries. Unfortunately, waves can move the oil behind the booms, trapping it there.

chemical dispersant used to control the oil).

Responders tallied more than 8,000 birds and 1,100 sea turtles, along with more than 100 marine mammals, that were devastated by the oil—a small fraction, experts believe, of the disaster's true toll. "This story has a long way to go," said Christopher F. D'Elia, dean of Louisiana State University's School of the Coast and Environment. "Sometimes the effects of a major spill are somewhat subtle, but over the years they can be larger than the immediate effects."

The Deepwater Horizon spill was just the latest and most blatant assault on this region, which for decades has been beset by wetlands loss, overfishing, barrier island erosion, and hypoxic "dead zones" created by agricultural runoff. Yet the spill could—paradoxically—mark a turning point. In 2012 legislation known as the RESTORE Act was signed into law, creating a federal-state oversight council and mandating that the billions of dollars from penalties levied against BP and its contractors under the Clean Water Act be spent on environmental and economic restoration in the five Gulf states: Texas, Louisiana, Mississippi, Alabama, and Florida. Roughly \$2.5 billion stemming from a separate plea agreement will flow to fish and wildlife conservation in the region, while billions more in fines under the federal Oil Pollution Act will be available to address damage from the spill to natural resources.

"This is our one chance to give the Gulf something it's never had—a focused ecosystem restoration plan, with billions of dollars to make it work," said Chris Canfield, who oversees Audubon's operations on the Gulf Coast and the Mississippi Flyway. "And when you restore the environment along the coast of the Gulf, you also are restoring huge parts of the economy," he explains—be-

Sarasota County gets more economic impact from tourists interested in wildlife viewing than from those wielding nine irons and putters—even with more than 70 golf courses within 15 miles of the city.

cause more than almost anywhere else in the country, the Gulf's economic vitality is inextricably tied to its coastal ecology.

The Gulf is the engine of the region's economy, and the environment lies at its core. Tourism—dependent on clean beaches, healthy oceans, and lots of wildlife—produces five times the number of jobs as the oil and gas, commercial fishing, and shipping industries combined, according to federal statistics. In the 53 counties and parishes that line the coast, tourism accounts for 25,000 businesses, half a million jobs, and up to a third of all private-sector employment, says a new report by Datu Research for the Environmental Defense Fund. Wildlife tourism alone accounts for some \$19.4 billion a year spent by birders, kayakers, hunters, and anglers. Add to that the Gulf's storied seafood industry, which had an annual economic value of \$10.5 billion before the spill, and you get a sense of how central the environment is to the regional economy.

Everyone agrees that the BP spill settlements represent the best—and possibly last—opportunity to reverse a decades-long decline in one of the richest marine environments in the world. But exactly how to realize that goal—how best to allocate the funds, which of the boatload of potential projects to fund, how to balance environmental and economic priorities—is the tricky part.

The signals so far have been mixed. Conservationists were both surprised and relieved in November 2012 when the U.S.



Commercial fishing, energy, and shipping are vital to the Gulf Coast. Still, tourism accounts for five times as many jobs as those industries combined.

Department of Justice announced that the criminal penalties from BP, along with civil settlements from one contractor, Transocean, totaling almost \$2.45 billion would be directed to the National Fish and Wildlife Foundation (NFWF), a government-chartered nonprofit with a long history of funding solid, science-driven management and research. No one expected that such an extraordinary sum—more than the foundation had disseminated in its entire 28-year history—would go to a single entity, much less one with such a strong, purely environmental track record. In July another contractor, Halliburton, made a \$55 million contribution to the NFWF after admitting it had destroyed evidence related to the spill.

The foundation will dole out the money over the next five years. "Those funds are pretty much guaranteed to go to wildlife, habitat, water-quality work, and not to purely economic or economically motivated projects," Canfield said. "This was exciting news given the competition that we know there will be for the other funds potentially coming to the Gulf."

Experts say BP will eventually be liable for billions under the federal Natural Resource Damage Assessment (NRDA) program, which penalizes companies responsible for hazardous spills for the damage they've done to wildlife and ecosystems. That process could take years, so the company has ponied up \$1 billion as a sort of down payment on its expected obligations. But with each of the Gulf states allowed to spend \$100 million more or less as they see fit, some of this early windfall is being diverted to some downright ecologically incorrect uses. Alabama, for example, hopes to take \$85.5 million of its share to build a huge hotel and conference center at Gulf Shores State Park

(instead of spending the money there to restore beaches and marshes affected by oil), while Mississippi has pledged \$15 million from its cut of this early BP money to help build a new minor-league baseball stadium in Biloxi.

"Under NRDA, there is a 'human use' category that can be funded, including improved recreation and cultural services," Canfield said, although the hotel proposal and others will have to survive an environmental review and public comment period. "And let's be honest—there is some old-fashioned political horse trading that is going to go on with some of these decisions," he said. "We certainly hope they will keep that to a minimum and maximize the direct benefits to the natural ecosystems [that were] damaged."

Fortunately, some of the \$1 billion put up already by BP is going toward solid ecological projects, not boondoggles. In Alabama some 20 miles of critical dunes will be restored with native plants; in Mississippi and Louisiana thousands of acres of oyster reefs will be reestablished. Street lamps and beachside building lighting in eight Florida and Alabama counties will be modified to create dark beaches—essential for nesting loggerhead turtles.

In Florida the state has asked Audubon to take the lead on a five-year project, using some of its share, to safeguard beach-nesting birds like snowy plovers and least terns; it is part of a multi-state effort encompassing 32 sites west into Mississippi. "It's a model that has been really successful elsewhere in the state, and we're excited to be able to expand it to the Panhandle," said Julie Wraithmell, Audubon Florida's director of bird conservation. "We don't usually get an opportunity to work on this kind of geographic scale. It's a sea change in the way we manage coastal birds."

The pot of money that the RESTORE Act will divvy up is likely to be much, much larger. Under the law, 80 percent of all

May 3
BP says it will pay for the cleanup.

May 9
The slick reaches Louisiana's Chandeleur Islands. Tar balls wash up on Alabama's Dauphin Island.

May 11
BP, Transocean, and Halliburton testify at Senate hearings.

May 31
BP begins its third attempt to cap the oil leak.

June 2
The oil slick continues to spread, nearing beaches in Florida's western Panhandle.

June 14-15
President Obama's first Oval Office address on the spill: "We will make BP pay for the damage their company has caused."

June 29
Hurricane Alex postpones cleanup efforts, pushing oil toward Louisiana's Grand Isle and Elmer's Island.

July 5
Tar balls wash up on several state beaches in Texas.

July 15-18
BP completes an operation to cap the leak, and announces that oil has stopped flowing into the Gulf.

July 28
100 days after the spill, more than 205 million gallons of oil has leaked into the Gulf.

September 19
The government says that the well is permanently sealed.

2012

June 29
Congress passes the RESTORE Act.

finances and civil settlements under the Clean Water Act are to be used to “restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, coastal wetlands, and economy of the Gulf Coast region.” How the funds will be allocated will be up to the Gulf Coast Ecosystem Restoration Council (known less formally as the Restore Council), made up of representatives appointed by the five Gulf state governors; the secretaries of the federal departments of Interior, Commerce, Agriculture, and Homeland Security, along with the Army; and the administrator of the U.S. Environmental Protection Agency.

No one knows exactly how much money they will have at their disposal. If BP is found to have been “grossly negligent” and receives the maximum fines, it could be on the hook for up to \$21 billion. The legal wrangling may take years, but everyone assumes the result will be many, many billions of dollars, and an unprecedented chance to change the Gulf’s fate for the better.

“Conservationists along the coast have been picking up the scraps and trying to do the very most with very little for decade upon decade,” said Richard Gibbons, director of conservation for Houston Audubon. “Now we’re being asked to pick up our heads and look at the big horizon and say, all right, what are our real priorities?”

There is no shortage of ideas. David Muth, who leads the National Wildlife Federation’s Mississippi River Delta Restora-

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tion Program, is focusing on that impossibly rich ecosystem that has been vanishing as sea-level rise and sediment loss rob the delta of its natural ability to build new land.

“We are essentially in a collapsing landscape,” Muth said. “We’ve lost 1,900 square miles of land since the 1930s, and we’re projected to lose—depending on sea-level rise rates over the next 50 years—anywhere from 700 to 1,700 square miles more.”

That’s why the federation, partnering with Audubon, the Environmental Defense Fund, and other groups, has been pushing to replumb the Mississippi to allow the river to once more build the delta. “There are a lot of ecological tragedies unfolding out there, and most of them don’t have a ready-made solution that is attainable,” Muth said. “In some ways, this one does.”

It would also be incredibly expensive. Louisiana has just approved a master plan for delta restoration and hurricane protection that calls for spending \$25 billion for restoration, an average of \$500 million a year for the next 50 years—far beyond what anyone expects the BP settlements to provide, even if every penny were devoted to the delta.

For a lot less money, Ben Raines argues, we could safeguard the coastal marshes we already have. The executive director of the Weeks Bay Foundation on Alabama’s Mobile Bay, Raines has proposed dedicating a nickel out of every dollar spent by the Restore Council to buy and protect vulnerable coastal habitat.

“At a nickel a dollar, if they got \$5 billion, we’d have about \$250 million—and if we’re talking about marshes and coastal forests,

you could buy a tremendous amount of land for that money,” Raines said. “I think we could be talking hundreds of thousands of acres in each state. And the only way we’re going to insure we have those places going forward is to buy and protect them.” If the settlement ends up approaching the \$21 billion high end, the total available for coastal marshes could be more than \$1 billion.

Although the main RESTORE Act funds are still well off in the future, the council overseeing them will, in the coming months, be setting its priorities for how to spend the funds. One of the trust fund’s mandates, “economic” restoration, worries many conservation experts, who wonder if more hotels and baseball stadiums are in the offing.

But a different sort of economics is playing out in the Gulf. Waterbird, seabird, and shorebird populations are both living indicators of the region’s health and important magnets for wildlife-hungry tourists, which is why Audubon is banking heavily on restoration programs that benefit birds, Wraithmell and other Audubon experts said. Money invested in revitalized Gulf habitat pays enormous dividends for local communities. In Florida, for example, two proposed projects would use \$2.5 million to rein in erosion on islands in Tampa and Hillsborough bays that support immense colonies of wading birds.

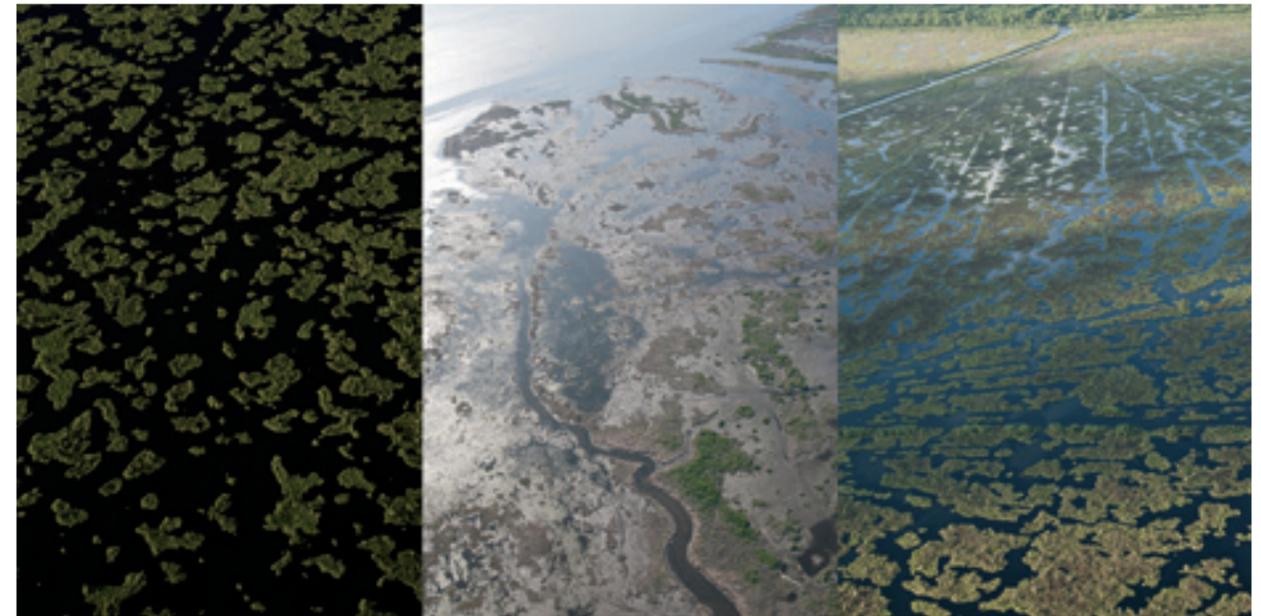
“We’re talking massive, massive, massive waterbird rookeries that have been there for decades—18 species, and tens of thousands of pairs of brown pelicans, roseate spoonbills, reddish egrets, white ibis, American oystercatchers, and the list goes on and on,” Wraithmell said. “Those islands, they’re like the hub on

a wheel—you see the birds coming and going from them all day. The reddish egrets and roseate spoonbills that you see throughout the Tampa Bay area, and which are very desirable targets for wildlife viewers, are raised up on those islands.”

I’ve spent many happy hours watching and photographing waders from those very colonies, and I’m hardly alone; the Florida Gulf Coast has always attracted a lot of birders. Still, I was shocked when Erin Duggan of the Visit Sarasota County tourism bureau told me her county gets more economic impact from tourists interested in wildlife viewing than from those wielding nine irons and putters—even with more than 70 golf courses within 15 miles of the city. Nor does Sarasota County include hunting and fishing in that total, she said, though these lucrative pastimes also depend on healthy, robust ecosystems, which makes the overall impact of nature tourism even greater.

Keith D. Overton agrees that investments in the Gulf’s ecological health, like those the spill settlements will make possible, are a critical investment in the region’s economy. What makes Overton’s opinion so persuasive is that, like Duggan, he’s speaking as someone sitting firmly on the equation’s business side.

Overton, president of the high-end TradeWinds Resort near St. Petersburg, Florida, is the former chair of the Florida Restaurant and Lodging Association’s board, and he’s the first to admit he’s not a birder. But, he notes, “every person who comes to Florida has a list of multiple things that they want to do, and almost always, something to do with the wildlife is on that list. For more



Marsh restoration often means adding dredged material to open water and using structures to trap the sediment, so marsh plants can take root.

than a hundred years, Florida’s brand was built on blue skies, warm sunshine, pure white-sand beaches, and the incredible wildlife. Florida’s reputation is still built on its natural resources. I worry at times that we haven’t been reinvesting into that enough.”

The last big oil spill happened in 1989, when the *Exxon Valdez* went aground in Alaska, and for one conservationist with a unique perspective on the issue, there’s a growing fear that in the Gulf we’re not applying the lessons learned from that previous disaster.

Stan Senner, a former director of Audubon Alaska and now with the Ocean Conservancy, served seven years as Alaska’s chief restoration planner and science coordinator following that catastrophe. In that case, the state and the federal government set aside their differences and agreed to jointly carry out all aspects of restoration. They also agreed to use about 20 percent of all the restoration money—almost \$158 million—for science and monitoring, based on an exhaustively vetted plan for ecological restoration.

“Those investments in science are still paying off today,” Senner said. “If the *Exxon Valdez* trustees had not funded a substantial, extended science program, we would not know that essentially unweathered crude oil can be found on some Prince William Sound beaches nearly 25 years after the spill. We would not know that exposure to oil, combined with a natural virus, likely caused the collapse of the herring fishery four years after the spill; that exposure to just a few parts per billion of oil can kill salmon embryos; that social disruption of killer whale pods can be essentially permanent; and that adult female harlequin ducks experienced reduced overwinter survival in oiled areas as long as 10 years after the spill.”

In Alaska the spill fund trustees invested in new techniques to mark hatchery salmon to better manage wild stocks, and

they continue to monitor the herring population, which never recovered from its post-spill collapse, Senner said. “We would be missing an enormous opportunity if we don’t track injury and recovery in the Gulf. Such information is critical to inform future oil spill responses around the world, and given the huge importance of fisheries in the Gulf of Mexico, there is a tremendous opportunity to make similar strides in that region.”

Senner’s biggest hope is that the Restore Council comes up with a truly comprehensive plan for Gulf restoration—one based on wide public input, focused on ecological interests, and in which proposals are evaluated through an external, peer-reviewed process. While he feels the initial plan adopted in August was a step in the right direction, he and representatives from other groups, including Audubon, say it lacks a solid scientific foundation, and they have urged the council to hire a chief scientist and establish a scientific advisory committee.

It’s critical, he and other regional experts agree, that the public strongly encourage the Restore Council and its state representatives to think big, and to work on Gulf recovery at an ecosystem level.

The stakes couldn’t be higher. “There’s an opportunity with RESTORE to address the more systemic degradation in the Gulf in a comprehensive approach, from Texas to Florida and from the coastline out to the blue water,” Senner said. “This is serious business, and if restoration decision makers can’t find a way to rise above politics as usual, the nation will have squandered a once-in-a-lifetime opportunity to set the Gulf ecosystem on the pathway to a sustainable future.” ■

Contributing editor Scott Weidensaul has written dozens of books on natural history, including Living on the Wind: Across the Hemisphere with Migratory Birds, a finalist for the Pulitzer Prize.

Speak Up!

Let the Restore Council and its state representatives know that you want them to think big and work on Gulf recovery at an ecosystem level. Write directly to the Council (restorecouncil@doc.gov), especially during upcoming comment periods. Let the National Audubon Society know about your support for the RESTORE Act by copying audubonaction@audubon.org on correspondence to legislators. Many decisions will be made at the state level, so influencing proposals from the start, before they get to the full council level, is very important. If you have particular concerns about an individual state project, or want to support one in a Gulf state, write directly to the state-level council member. Find your state’s representative at restorethegulf.gov/council/about-gulf-council.

2013

July 6 President Obama signs the act into law.	November 15 BP pleads guilty to felony misconduct and agrees to pay a \$4.5 billion fine.	January 3 Transocean Ltd., the owner of Deepwater Horizon, agrees to pay \$1.4 billion for civil and criminal claims.	July 25 Halliburton agrees to plead guilty to destroying evidence and pay a \$200,000 fine, and says it will donate \$55 million to the National Fish and Wildlife Foundation.	November To get updates on the restoration, go to restorethegulf.gov .
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