



Spill Over?

FIVE YEARS AFTER THE DEEPWATER HORIZON DISASTER, WE WANTED TO KNOW WHETHER THE GULF HAD RECOVERED—AND HOW MUCH REMAINS TO BE DONE

by Kim Cross

EVERYONE REMEMBERS how it started: on April 20, 2010, the Deepwater Horizon drilling platform exploded off the coast of Louisiana, rupturing the Macondo well below it. Over the next 87 days, as much as four million barrels of oil surged into the Gulf of Mexico—the worst marine spill in history.

Over the ensuing weeks, BP, which operated the rig, launched a massive cleanup campaign: 810,000 barrels of oil were skimmed off the surface or captured from the wellhead, 1.8 million gallons of chemical dispersant were pumped into the waters, 411 surface fires were lit, miles of floating booms were deployed, and tens of thousands of workers cleaned beaches. Whether you turned on Fox News or the *Today* show, the Gulf was the story.

This year, what few headlines have appeared have focused on the third and final phase of a federal trial in Louisiana to determine how much BP can be fined under the Clean Water Act. (A judge ruled that it should fall between \$3 billion and \$14 billion.) Combined with previous fines and forthcoming penalties for damage to wildlife, the company will have

spent nearly \$40 billion in restitution. (See “Show Me the Money,” page 38.)

“No company has done more to respond to an industrial accident,” says BP spokesman Jason Ryan.

These days you’re more likely to see an ad for Louisiana tourism (paid for, in part, by BP) than any coverage of the lingering recovery effort. I lived on this coast for years, first on the Florida Panhandle and then in New Orleans. I’ve swum in its waters and eaten its seafood more times than I can remember. So last December, I decided to return to the area and check on the progress myself.

What Happened to the Oil?

BY THE NUMBERS

1.2
MILLION

GALLONS OF OIL
ESTIMATED TO
HAVE LEAKED EACH
DAY BEFORE BP
CAPPED THE WELL.

There’s one thing that almost everyone agrees on: it’s not as bad as it could have been. In large part, this is due to bacteria that appear to have evolved to feed on the million or so barrels’ worth of oil that naturally seeps from the Gulf floor each year. When the spill happened, that bacteria quickly consumed many of the alkanes found in the crude. By 2011, six months after the well was capped, the plume had disappeared. But other

hydrocarbons were left behind.

According to Chris Reddy, a senior scientist at Woods Hole Oceanographic Institute, “Oil is a complex mixture; it’s like a buffet. The prime rib is gone, and now the crusted-over coleslaw”—the part the bacteria didn’t consume—is still there.”

How much coleslaw depends on who you ask—one of many contentious issues surrounding the event. In 2010, BP committed \$500 million in funding for the Gulf of Mexico Research Institute to examine the leak’s long-term impact. BP also went on a hiring spree. The company paid hundreds of scientists to study the spill in preparation for litigation, but they were bound by a gag order. The first time many of them spoke was when they testified—on BP’s behalf—at the trial in Louisiana.

Today, no one’s really sure how much oil is still out there. In 2010, the White House released a report claiming that only 26 percent of the spill remained in the Gulf. Scientists torpedoed the findings for not being peer reviewed. Furthermore, the only known quantity, according to Samantha Joye, a marine scientist at the University of Georgia, was how much oil was skimmed off the surface or captured at the wellhead—every other number is at best an estimate.

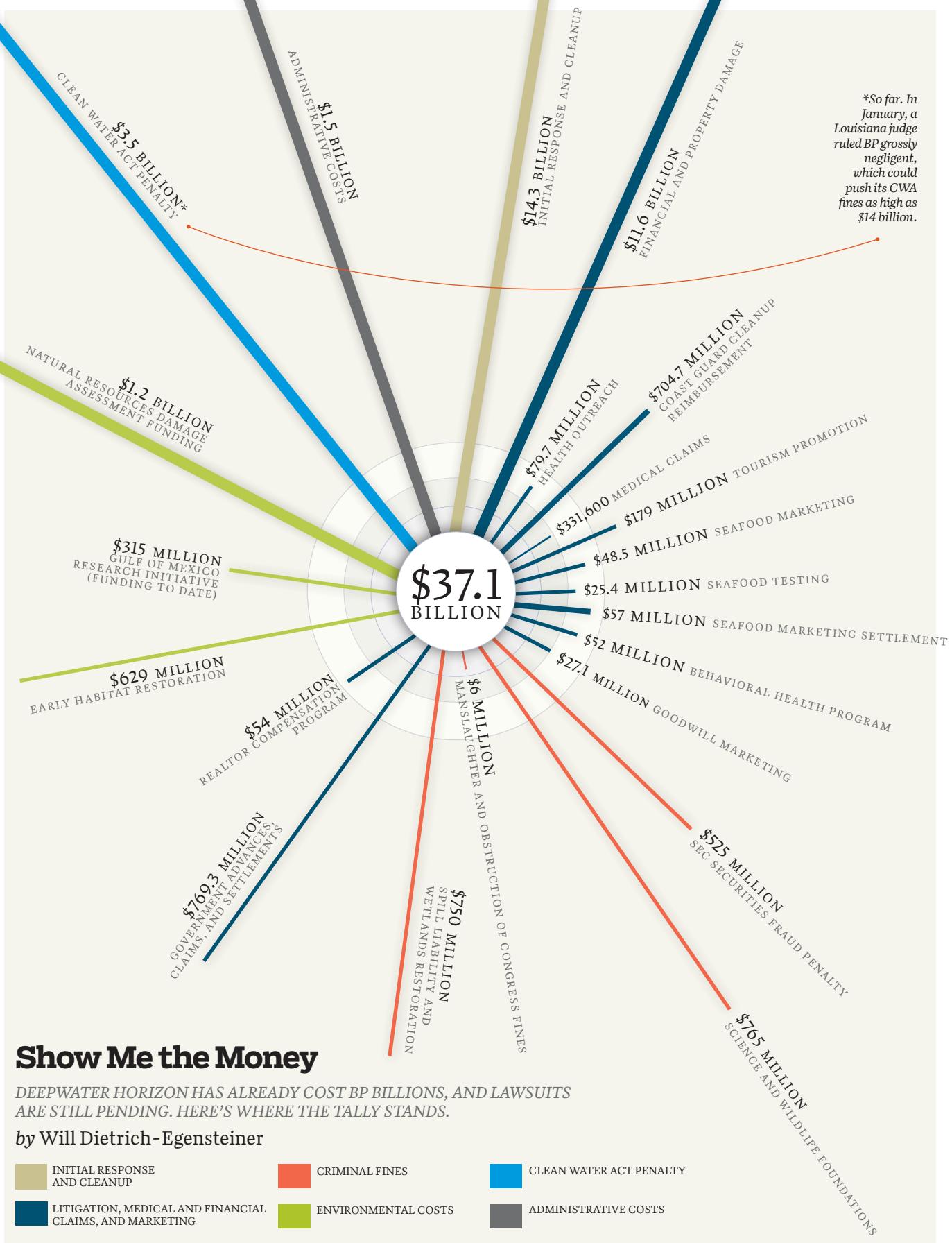
This much is certain: there’s still a big mess on the seafloor. Joye saw it first in 2010, when she began studying the effects of the spill, and again in April 2014. On both occasions, she descended 5,000 feet in a submarine and found a layer of mud mixed with oil near the blowout site. “The mysterious caramel brown layer that we discovered in 2010 remains,” she noted in 2014. “It is about the same thickness as it was in 2010 [between five and seven centimeters], and it is widespread—we drove around for over 2.5 km [1.5 miles] and saw the feature everywhere.” That lines up with Reddy’s October 2014 report that there was a “bathtub ring” of crude the size of Rhode Island on the seafloor.

Perhaps more disconcerting is what we’ve since learned about Corexit, the dispersant pumped into the water. Corexit was supposed to break down the oil but also made it more edible to fish and plankton, which otherwise don’t consume it. Even worse, there’s some evidence that the chemical actually hindered degradation, allowing more hydrocarbons to remain in the Gulf.

What Happened to the Fish?

How the oil will affect marine life over time remains to be seen. In the year following the spill, nearly 7,000 animals were found dead: more than 6,000 birds, *continued on page 40*

*So far. In January, a Louisiana judge ruled BP grossly negligent, which could push its CWA fines as high as \$14 billion.



Show Me the Money

DEEPWATER HORIZON HAS ALREADY COST BP BILLIONS, AND LAWSUITS ARE STILL PENDING. HERE'S WHERE THE TALLY STANDS.

by Will Dietrich-Egensteiner

 INITIAL RESPONSE AND CLEANUP

 CRIMINAL FINES

 CLEAN WATER ACT PENALTY

 LITIGATION, MEDICAL AND FINANCIAL CLAIMS, AND MARKETING

 ENVIRONMENTAL COSTS

 ADMINISTRATIVE COSTS

600 sea turtles, and 150 marine mammals, including dolphins and sperm whales.

Since then, however, there have been signs that populations are bouncing back. During her 2014 dive, Joye observed a multitude of fish, squid, and eels—a marked contrast to 2010, when she saw one crab in seven hours. A recent study found that brown and white shrimp were more abundant in estuaries heavily affected by the spill. Shortly after the explosion, 37 percent of the Gulf was closed to fishing, for safety reasons and to allow populations to rebound. By April 2011, most closures were lifted, though a few areas remained off-limits until 2014. Today, commercial catches of shrimp, crabs, and yellowfin tuna remain lower than before the

"The Gulf is undergoing a robust recovery," says BP's Ryan.

"It's still beautiful," says Phillip McDonald, executive chef at Bud and Alley's Pizza Bar in Seaside, Florida. "I just went surfing yesterday. There are nickel-size tar balls here and there, but those were there before the oil spill, occasionally."

There are, after all, roughly 2,400 oil platforms in the Gulf. While observers predicted tough times for energy companies after the explosion, those never came to pass. Production is down 27 percent across the Gulf, but that looks to change as more leases become available on prime real estate. In 2012, President Obama opened 39 million new acres to drilling; in 2014, he approved offshore

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explosion in eight of the region's most significant fisheries (though revenues as a whole have grown by 50 percent).

As populations struggle to recover, the scientific focus has shifted to how toxins work their way up the food chain. Of particular concern are polycyclic aromatic hydrocarbons (PAHs, the carcinogens associated with charred meat), which comprise between 2 and 10 percent of crude oil. The livers of vertebrates—fish, birds, humans—filter PAHs readily, but they can build up in the invertebrates, like lobsters and clams, fed on by larger fish. And because the spill struck during breeding season, the embryos and larvae of many species may have been harmed.

"Those creatures influence the species they feed on and also the species that feed on them," says Peter Hodson, an emeritus environmental-studies professor at Queen's University in Kingston, Ontario. "If you knock out those embryos, the effects on fish populations could take years to see."

One species already struggling is oysters, populations of which have plummeted in Louisiana, Mississippi, and Alabama. "My production is down 93 percent," says George Barisich, an oyster farmer and shrimper from Louisiana's St. Bernard Parish. "They're not contaminated to where it'll make you sick, but there are no babies."

What Happened to the People?

If you visit the Gulf shore today, you'll see the same Caribbean-blue water and sugar-white sand that have enchanted generations.

a former EPA adviser who now assists the Louisiana Environmental Action Network.

"We're seeing a lot of respiratory problems but also cardiovascular issues, memory loss, and degradation of organs."

Proving that those symptoms are oil related requires longitudinal studies that can take years. Two big ones are under way: The National Institute of Environmental Health Sciences is conducting a ten-year study on the health effects of a spill, monitoring 33,000 cleanup workers and coastal residents. (It's the largest such study in history.) And a five-year project by a consortium of five universities is measuring PAH levels in subsistence-fishing communities.

Then there are the 115 men and women who survived the explosion itself, many of whom, like Stephen Stone, suffer from post-traumatic stress. "It's not over," his wife, Sara, told me in December. "These are not incidents that happen and have an ending."

That's precisely the trouble with the situation in the Gulf. BP will someday move on, but scientists are likely to remain busy for decades to come. How the Gulf will look in 20 years is anyone's guess.

Over the past few years, I've caught glimpses of the achingly beautiful Gulf of my childhood, and I've found myself in awe of its resilience. But I can't shake the fear that some unseen danger is still out there threatening to upset the balance.

"You can't put the Gulf in an MRI and find specific problems in an ecosystem this diverse and complex," says Chris Reddy. "We're going to have to live with large uncertainties for a very long time."

RECOVERY MEALS

OYSTER HARVESTS ARE WAY DOWN, AND OTHER POPULATIONS ARE STILL RECOVERING, BUT THAT DOESN'T MEAN YOU CAN'T FIND GOOD SEAFOOD. "THERE'S LESS OF IT, SO IT'S MORE EXPENSIVE, BUT THE QUALITY IS VERY HIGH," SAYS JAMES BEARD AWARD-WINNING CHEF JOHN BESH. WHERE TO START? HERE ARE HIS RECOMMENDATIONS. —MARTIN FRITZ HUBER



DOC'S SEAFOOD AND STEAKS
CORPUS CHRISTI, TEXAS

THE ORDER:
Black drum with roasted crawfish and poblano cream sauce



THE GRAND MARLIN
PENSACOLA BEACH, FLORIDA

THE ORDER:
Grouper picatta with whipped potatoes and sautéed spinach



MIDDENDORF'S SEAFOOD
AKERS, LOUISIANA

THE ORDER:
Middendorf's Special—thin fried catfish



MARKET BY THE BAY
DAPHNE, ALABAMA

THE ORDER:
Large seafood platter, with shrimp, oysters, and fish. Get a side of hush puppies, too.



CASAMENTO'S NEW ORLEANS, LOUISIANA

THE ORDER:
Oyster loaf—pan bread, butter, and oysters