

## Lessons from the BP Oil Spill

### Lições do derramamento de óleo da plataforma Deepwater Horizon

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#### **Abstract**

The BP Oil Spill of 2010 was one of the largest in history. Although the lessons of the BP Spill are most immediately relevant to the United States, they have broader implications for Brazil and other countries. It is no secret that the regulatory system functioned poorly in the era before the spill, providing little incentive for industry to exercise care. Post-spill reforms should be an improvement. The U.S. government took the spill seriously and sought major penalties. These penalties are measured in billions of dollars. In the meantime, a multi-billion dollar class action settlement has also resulted from the spill. Actions to recover for harm to natural resources and ecosystems are still in preparation. Hopefully, the lessons learned from this deplorable event will be instructive not only for the United States but for other nations such as Brazil that are involved in deepwater oil drilling.

**Keywords:** Environmental Law, Disaster Law, oil drilling.

#### **Resumo**

O derramamento de óleo da BP de 2010 foi um dos maiores na história. Embora as lições desse derramamento sejam mais imediatamente relevantes para os Estados Unidos, elas possuem implicações mais amplas para o Brasil e outros países. Não é nenhum segredo que o sistema regulador funcionava mal na época precedente ao vazamento, proporcionando pouco incentivo para que a indústria adotasse os devidos cuidados. As reformas realizadas pós-derrame devem apresentar melhorias no sistema. O governo dos EUA considerou o derrame um fato grave e procurou aplicar grandes penalidades. Tais sanções são medidas em bilhões de dólares. Nesse meio tempo, um multibilionário acordo judicial também resultou do derramamento. Ações para a recuperação dos danos aos recursos naturais e ecossistemas estão ainda em preparação. Esperemos que as lições tiradas deste evento deplorável se tornem instrutivas não só para os Estados Unidos, mas para outras nações, como o Brasil, que estão envolvidas na exploração de petróleo em águas profundas.

**Palavras-chave:** Direito Ambiental, Direito dos Desastres, perfuração de óleo.

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## Introduction

The BP Oil Spill of 2010 was one of the largest in history. It has already given rise to an extensive legal literature and, as we will see, extensive litigation.<sup>2</sup> The post-spill developments have useful implications about how to structure risk regulation to prevent future spills as much as possible. The litigation also sheds light on the question of how to compensate spill victims efficiently and fairly. Although the lessons of the BP Spill are most immediately relevant to the United States, they have broader implications.

Oil spills are obviously not a uniquely U.S. phenomenon. For instance, Brazil also suffered a major oil spill not long after the BP Spill, although the spill was fortunately less drastic than the American spill. On November 7, 2011, a pressure spike occurred during the drilling of an exploratory well at a depth of 1000 meters about 120 kilometers offshore. According to Chevron, although the well was immediately sealed, leakage began from the seabed nearby and continued for four days. Chevron was fined 50 million reais, and it was reported that authorities were considering indictments against employees who were involved in the leak (Carroll and Spinetto, 2011). In addition, a federal prosecutor filed a lawsuit for \$11 billion in damages against Chevron alleging that “Chevron and Transocean were not capable of controlling the damages caused by the leakage” and that there was “evidence of a lack of planning and environmental management by the companies” (Reuters, 2011)<sup>3</sup>. Criminal charges were later dropped, and Chevron entered into a settlement to pay \$175 million to settle civil damage claims (Reuters, 2013)<sup>4</sup>. Concerns have also been expressed about the risk assessments used for drilling operations offshore of Brazil.<sup>5</sup> Notably, the Brazilian coastal zone has similarities with the U.S. Gulf Coast in terms of tourism and fishing industries, making similar kinds of harm foreseeable (Sousa, 2011).

In the aftermath of the BP Spill, “Brazil’s environmental agency and navy drafted a national contingency plan for responding to offshore oil spills to complement a federal law enacted in 2000 that made operators on

Brazil’s offshore platforms responsible for spill prevention and clean-up” (Weaver, 2014b, p. 194). As in the U.S., Brazilian law provides for penalties and liability in the event of a spill:

Importantly, all concession agreements make clear that the producer “will be fully responsible for all damages and losses to the environment that arise, directly or indirectly, from the execution of their operations.” Fines for violating environmental law appear to be ordered through IBAMA, a lead federal environmental agency. The Environmental Crimes Act of 1998 bolstered the environmental agencies’ enforcement powers and increased the potential fine amounts (Sousa, 2011, p. 87).

Like the U.S., Brazil also has a class action mechanism that could be used by spill victims, although Brazilian law apparently does not provide for a private claim-settlement system, and the litigation process seems to be even slower than in the U.S. (Sousa, 2011). Thus, the two legal schemes have common elements.

Yet, as the post-spill developments have unfolded in the United States, there may be additional lessons for Brazil from the U.S. experience.<sup>6</sup> Fortunately, Brazil has not yet had to cope with a mega-spill like the BP Deepwater Horizon blowout. The sheer scale of such events presents unique challenges in terms of post-disaster legal consequences, and the potential for such a mega-spill may require a thorough reconsideration of the adequacy of regulatory safety measures.

After this introduction, this article begins in Part II by describing the BP spill and its impact on the U.S. Gulf Coast. The spill had widespread economic impacts that went well beyond the obvious damage to beaches and fisheries. It also had ecological impacts that scientists are still seeking to understand.

The article then considers the regulatory lessons of the spill in Part III. It is no secret that the regulatory system functioned poorly in the era before the spill, providing little incentive for industry to exercise care. The temptation to skimp on safety in order to maximize profits is, unfortunately, a universal one. Regula-

<sup>2</sup> For some particularly useful articles, see Aldy (2011); Gilles (2012); Issacharoff and Rave (2014); Osofsky et al. (2012); Randle et al. (2013); Uhlmann (2011); Viscusi and Zeckhauser (2011); Weaver (2014a, 2014b). For a useful update on matters relating to the spill, see Ramseur and Hagerty (2014). For English language materials on relevant Brazilian law, see Sousa (2011).

<sup>3</sup> For a discussion of the contrasting roles of environmental criminal law in the United States and Brazil, see Blomquist, (2011); McAllister (2008).

<sup>4</sup> Chevron also paid \$14 million to settle fines in a later spill that did not reach shore (Forbes, 2012).

<sup>5</sup> John Vidal (2010) states that: “The platform is now operating 125km off the coast of Brazil in 1,798 metres (5,900 feet) of water—deeper than BP’s Deepwater rig that exploded in April and led to the disastrous oil spill in the Gulf of Mexico [T]he 14-page environment report prepared by the [bank financing the drilling operations] makes no mention of blowouts or the equipment needed to prevent them. Ministers have edited out all ECDG’s comments assessing the risks involved in deep-sea drilling in the Atlantic.”

<sup>6</sup> A very useful comparison of U.S. and Brazilian efforts is provided by Sousa (2011).

tors must instead foster the development of a culture of safety within the industry. This presents particular challenges because the wealth and political power of the oil industry, plus the complacency that results from the infrequency of major accidents, can create powerful resistance to vigorous government oversight.

The remainder of the article considers the massive legal liabilities created by the spill, mostly on the part of BP. Part IV considers the criminal and civil penalties imposed on BP. The U.S. government took the spill seriously and sought major penalties. These penalties are measured in billions of dollars. Notably, they have been used to help finance scientific work and recovery measures in the affected area. Compensation to victims is also an issue. Part V considers the multi-billion dollar settlement covering economic loss and the forthcoming actions to recover for ecological damage. Although major oil companies have tremendous resources, these financial liabilities should be large enough to focus industry attention on the need for safety.

In the post-spill period, much has been learned about the accident itself and the regulatory failures that contributed to it. We have also had the opportunity to observe reform of regulation in the U.S., and the ways that the legal system can contribute to deterrence of risky behavior and compensation for victims. Hopefully, the lessons learned from this deplorable event will be instructive not only for the United States but for other nations such as Brazil that are involved in deepwater oil drilling.

## The BP Oil Spill and Its Aftermath

The Gulf of Mexico received national and even international headlines for many weeks during the BP Deepwater Horizon Oil Spill. The spill is described in Part A of this section, while its direct human impacts are discussed in Part B and its ecosystem impacts are discussed in Part C. Despite the intensive investigations that have already taken place, it may be years before we fully understand the dynamics of the accident and its consequences.

### The Spill

It is best to begin with the spill itself. On April 20, 2010, while drilling at the Macondo Prospect about 52 miles southeast of Venice, Louisiana, an explosion on the Deepwater Horizon caused by a blowout killed 11 of 126 crewmen (Associated Press, 2010a). Workers who

were shutting down the exploratory well were unaware that it was leaking natural gas, perhaps because they were distracted by a test they were performing. The gas rushed to surface, ignited, and exploded (Uhlmann, 2011, p. 1422-1423). Two days later, despite efforts to put out the blaze on the oilrig, the Deepwater Horizon sank in 5000 feet of water (Associated Press, 2010b)<sup>7</sup>.

The blowout was an accident, but it was also the foreseeable result of inattention to important safety issues. BP simply had not given sufficient attention to safety before the accident:

BP chose a single-tube well design that [...] provided fewer barriers to contain gas within the well than other well designs. BP decided to use a single cement plug and fewer centralizers than Haliburton [an expert sub-contractor] had recommended. BP cancelled a bond cement test that might have revealed problems with the cement seal. These problems were compounded by other errors, including the failure to circulate drilling mud adequately, which helps the cement cure; the replacement of drilling mud with seawater, which made it easier for gas to escape, and the misreading of pressure tests conducted hours before the blowout, which should have revealed the instability of the cement seal (Uhlmann, 2011, p. 1440).

Safety problems with other BP operations confirmed that the problem was widespread throughout the organization: “BP stressed production and efficiency over safety and failed to address systemic problems in its environmental compliance programs even after criminal (and civil) violations occurred at BP facilities” (Uhlmann, 2011, p. 1432).

The seriousness of the event was initially underestimated. On April 23, the Department of Homeland Security stated the incident “poses a negligible risk to regional oil supply markets and will not cause significant national economic impacts” (Goldenberg, 2010). White House Press Secretary Robert Gibbs, too, minimized the nature of the incident, announcing, “I doubt this is the first accident that has happened and I doubt it will be the last” (Goldenberg, 2010). However, on this same date, President Obama issued a statement identifying the blowout as a “number one” priority, and BP officials acknowledged the threat of catastrophic environmental consequences (Goldenberg, 2010).

After the initial accident, attention turned to the leakage of oil from the well. On April 24, oil was confirmed to be leaking from the well, and the next day the U.S. Coast Guard announced its intention to use re-

<sup>7</sup> For a detailed discussion of the events leading up to the spill, see National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (2010, p. 89-122).

mote underwater vehicles to stop the leak. Throughout the end of April, May, and June, estimates of the flow of oil increased from 1,000 barrels of crude per day (bpd), to 5000 bpd, to as many as 60,000 bpd (Gillis, 2010). For perspective, this could mean that an amount of oil equal to the entire Exxon Valdez spill could have been gushing into the Gulf of Mexico every four days (Gillis, 2010). At least one expert predicted the spill flow was even higher than 60,000 bpd (Harris, 2010).

In May, Congress learned that BP, Halliburton, and Transocean ignored safety warnings in the hours before the Deepwater explosion, and a group of Minerals Management Service scientists claimed they were pressured to change the findings of internal studies if they predicted a substantial danger of an accident or harm to the Gulf ecosystem. On May 16, BP began to draw some of the spewing oil up to the surface using a tube inserted into the leaking pipe; however, this strategy proved largely ineffective at recovering a substantial portion of the oil (Harris, 2010). The oil posed an immediate threat to the safety of seafood from the area. On May 18, the no fishing zone covered nineteen percent or about 90,000 square miles of the Gulf of Mexico (Harris, 2010). BP announced on June 6 that a containment cap was capturing 10,000 bpd (Harris, 2010). On July 7, the Associated Press released an investigation indicating that there are 27,000 abandoned oil wells in the Gulf, some dating back to the 1940s, and many badly sealed (Harris, 2010). This investigation thus forced the public to confront the possibility that other major leaks were possible. On July 15, BP finally stopped the flow of oil for the first time in nearly three months (Harris, 2010). And about three weeks later on August 4, BP executed a successful 'static kill', and a cement plug introduced on September 19 left the well effectively dead and the crisis officially over (Harris, 2010).

BP and others also engaged in extensive activities to recover oil, break up oil slicks, and respond to coastal impacts on the over-1000 miles of affected seashore. BP spent \$14 billion on such activities, and at its peak, almost 50,000 people were employed in the response effort (Ramseur and Haggerty, 2014, p. 2). As we will see, these direct expenditures were only the beginning of the company's financial liability, which has included criminal fines, voluntary damage payments, a class action settlement, and pending civil penalties – each of which was measured in billions of dollars.

### **Direct Human Impacts**

Columbia University's National Center for Disaster Preparedness interviewed 1,200 adults on the

Gulf Coast during the oil spill and found that the spill had seriously impacted economic viability of Gulf Coast communities (Columbia University's Mailman School of Public Health, 2010). The most direct impacts fell on the fishing industry. But the follow-on impacts were also severe on such industries as tourism, real estate, restaurants, seafood processors, and communities dependent on those industries. Moreover, the impacts did not fall evenly, raising issues of environmental justice.

African Americans, Southeast Asians, and Native Americans in the region are often heavily dependent on the seafood industry for jobs. After the spill, Environmental Justice advocates called attention to the plight of communities of color and Native Americans, groups that have historically been overlooked (McGinnis, 2010). In response to concerns that the oil spill was having disproportionate effects on minority communities, EPA Administrator Lisa Jackson added staff to incorporate environmental justice concerns, including access to better consultation with government and environmental testing information (Schleifstein, 2010). "People of the Gulf Coast need our support today more than ever before", EPA Administrator Lisa Jackson said (Schleifstein, 2010). "The people who are most vulnerable to the impacts of this spill must be empowered during our response and the long-term recovery", Jackson concluded (Schleifstein, 2010).

Before oil and gas development, the Gulf Coast was primarily used for fishing, trapping, and transportation (Verchick, 2010, p. 16). Even today, it is home to fishing communities with unique history and cultures. The earliest non-native inhabitants of the coast were refugee Acadians (Cajuns) from Canada. The Cajuns are the descendants of the Acadians expelled from modern day Nova Scotia and resettled in the marshes of Louisiana. Cajuns settled on the coast because other cultures had already laid claim to much of the inland territory, but they found that there was little agricultural land available among the marsh and swamp lands (Padgett, 1968). Traditionally farmers, the displaced Acadians were forced to adapt to a lifestyle focused on fishing. From these unique marshland beginnings, the Cajuns of Louisiana developed a distinct and complex cultural identity, expressed in language, food, dance, folklore, and other traditions. Cajun culture is not unitary; rather, "Cajun identity is so distinct that each town often has its own cuisine, musical style, and dialect" (Guarino, 2010).

The oil spill threatened Cajun culture because it challenges traditional fishing livelihoods, and threatens to undermine the Cajun tradition of self-reliance. Many of the small fishing communities in the Louisiana coast-

al zone have been in existence for 200 years or more (Guarino, 2010). These communities turned to capturing “fish, crawfish, frogs, and the collection of Spanish moss (used for mattress filler),” and selling these products to nearby New Orleans (Guarino, 2010). As fishing technology developed, in the 1950s and ‘60s, these communities increasingly relied on saltwater fisheries and shellfisheries for their livelihood (Guarino, 2010).

The Vietnamese community in the Gulf provides a powerful example of how certain minority groups faced particular dangers after the oil spill. Many Vietnamese in the Gulf are refugees whose families have fished for generations before coming to the Gulf (Guarino, 2010). Many Vietnamese in the region do not possess other job skills. Furthermore, many in this Vietnamese community have poor English language skills, and adjusting to depleted fisheries will thus involve this additional language hurdle (Guarino, 2010). During the oil spill crisis, the federal government also did not do well at communicating the details of the fishing closures to non-English speakers (Guarino, 2010). Some older Vietnamese fishermen were stopped and fined because they did not know that areas were closed to fishing (Guarino, 2010).<sup>8</sup>

Perhaps the greatest cause for concern in the environmental justice community has been the disposal of oil-related debris in communities of color. BP has been relying on landfills in neighborhoods where mainly blacks, Latinos, and Asians live (Bullard, 2010). BP’s federally approved waste disposal plan ships oil spill garbage to nine dump sites in the South (Bullard, 2010). In five out of nine of the facilities, minorities comprise a majority of residents living near the disposal facilities (Bullard, 2010). People of color comprise about 26% of the population in coastal counties (Bullard, 2010).<sup>9</sup> The disproportionate environmental burden BP’s dumping plan places on minority communities compounds the burden these communities already bear: the Hurricane Katrina recovery, economic paralysis, and racial inequality (Chen, 2010).

Although some groups may have been especially vulnerable to the impacts of the spill, the impacts were also felt more broadly. Tourism immediately suffered because of fears that beaches and coastal waters would be fouled. Because the spill occurred in the middle of a

severe recession, many of those who suffered economic harm found it difficult to recover.

## Environmental Impacts

The Gulf of Mexico is a unique and valuable ecosystem. Although the oil leak has long since ended, there are continued disputes over the environmental impacts of the spill. For example, it is unclear to what extent oil will continue to wash up on the Gulf coast, whether species such as the dwarf seahorse can overcome the loss of so much of its habitat, and whether dispersants used during cleanup efforts may have unforeseen consequences on the environment (Chen, 2010)<sup>10</sup>.

The Gulf is home to twenty-eight species of marine mammals, including six which are listed under the Endangered Species Act (“ESA”) as endangered. Five species of turtles in the region are listed under the ESA. These animals are focused in areas that provide shelter, feedings, and places suitable for reproduction. In addition, the Gulf’s coastal wetlands provide many ecological services:

In addition to storm protection services, the Louisiana coastal plain provides many other benefits. It offers habitat for countless species, including commercially significant sea life and waterfowl. Fisheries in the Gulf of Mexico provide about 20 percent of all seafood consumed in the United States. Nearly all of that catch is dependent, in some way, on the universe of microscopic plant and animal life first nurtured in the coastal plain. With more than five million birds wintering in Louisiana, the Louisiana coastal plain provides crucial rest stops to migrating birds. Finally, Louisiana’s coastal marshes provide services that are vital to water quality. [...] The coast’s storm protection, habitat, and water treatment services, while impossible to precisely quantify, surely amount to billions of dollars of commercial benefit per year (Verchick, 2010, p. 18-19)<sup>11</sup>.

The environmental impacts of the spill are still not fully understood, though they seem to have been less than many observers had feared:

- “In many regards, we were fortunate”, said Oregon State University marine biologist Jane Lubchenco, director of the National Oceanic

<sup>8</sup> Roughly one-fifth of the Southeast Asian immigrants on the Gulf Coast are fishermen (National Commission, 2010, p. 193).

<sup>9</sup> For more extensive discussion of this and other environmental issues, see Osofsky et al. (2012).

<sup>10</sup> The difficulties encountered in closing the well are discussed in National Commission (2010, p. 129-170).

<sup>11</sup> According to the National Commission (2010, p. 186-187), the Gulf Coast produces more than one-third of domestic seafood supply, diverse fish nursery and feeding grounds, and “some of the best beaches and waters in the United States for recreation and tourism”. According to Chen (2010, p. 187), “Coastal tourism and commercial fisheries generate more than \$40 billion of economic activity annually in the five Gulf States”.



and Atmospheric Administration at the time of the spill. “Much of the oil disappeared relatively quickly, thanks to the existence of bacteria (in the Gulf of Mexico), many of which we didn’t know about, the warm water of the Gulf, and the bathtub sloshing circulation of the Gulf, all of which contributed to its quick consumption by those bacteria.

- “But there were likely acute impacts (to organisms) before the oil disappeared, and, in fact, some of the oil did indeed come ashore, and continues to be suspended in the environment”, she said.
- “So, it could have been much worse, but the caution is that we still don’t fully know the true nature, the true extent of the damage, which is why it’s so important that the ongoing damage assessment efforts continue” (Schleifstein, 2014).

Nonetheless, there are disturbing indications of long-term impacts on some coastal areas where oil may have persisted and in terms of effects on some marine animals (Schleifstein, 2014).

It is important to place the incremental impacts in the context of the Gulf’s existing environmental problems. When the BP Oil Spill began, the Gulf of Mexico was already suffering the effects of a century of environmental neglect. The spill was simply the latest blow to a damaged ecosystem. Since the 1930s, one-third of Louisiana’s wetlands have disappeared (Wells, 2010). Data from a U.S. Fish and Wildlife Service wetlands survey conducted every ten years shows that, though the rate of loss has slowed, Louisiana is still losing 32,000 acres of wetland every year (EPA, 2010). At the current rate of wetland loss, by the year 2040, Louisiana will have lost more than one million acres of coastal wetlands since 1978. As a result, fisheries could decline by 30% and wildlife dependent on the marshes would suffer (Coastal Wetlands, Protection and Restoration Act Managing Agencies, 1997). Louisiana’s wetlands account for 40% of total wetlands in the continental United States, and the state also accounts for 80% of wetlands lost (Perhay, 2000, p. 155). Thus, any oil damage to remaining wetlands may be especially significant given the increasing value of preserving the shrinking wetland area. Like the environmental impact of the spill, the economic impact was amplified because of preexisting vulnerabilities.

After the end of the spill, the government was faced with several major questions: Why did the spill occur, and how could future spills be avoided? What

sanctions should be imposed to deter future spills? How should the victims of the spill be compensated? We consider these questions in the next three sections of the article.

## Regulatory Lessons from the Spill

There is always a temptation, after a serious disaster, to focus on the time after the events – the emergency response and the efforts to compensate victims and allow them to rebuild. To the extent that the causes are considered, it is easy to fashion blame on some of the workers on the scene for making imperfect decisions. But this focus on individuals is often misleading. When mistakes are made on the scene, they are often due to poor training, bad incentives, failed oversight, or organizational flaws that go beyond particular individuals. The BP Spill illustrates this principle. The spill was by no means caused by circumstances beyond human control. Specific failures by government and industry were to blame.

After a thorough investigation into the causes of the spill, a Presidential Commission identified the “root causes” as management failures by industry and a dysfunctional regulatory system (National Commission, 2010, p. 122-127). The accident “resulted from clear mistakes made in the first instance by BP, Halliburton, and Transocean, and by government officials who, relying too much on industry’s assertions of the safety of their operations, failed to create and apply a program of regulatory oversight that would have properly minimized the risks of deepwater drilling” (National Commission, 2010, p. 127). As one commentator has said, “One theme that runs through the many reports on the Macondo disaster is that the individual workers on the rig, BP as a company, and the offshore industry as a whole had become complacent about the safety of drilling in deepwater where high pressure-high temperature (HPHT) wells are common” (Weaver, 2014a, p. 161). In terms of regulation, as another commentator has observed, “[a]n under-resourced regulator, subject to the political winds of Congressional and Executive funding and oversight, could not prevail against a pro-industry ideology that treated additional regulation as a nuisance”, especially in the absence of a large spill in over 25 years (Weaver, 2014b, p. 381). Inspections by the regulatory agency were virtually a joke (Weaver, 2014b, p. 383). For instance, of over 2000 inspections, only 50 had follow-up inspections to see if violations had been corrected (Weaver, 2014b, p. 384). A report by independent experts soon after the spill reported that the agency had

failed almost completely as a safety regulator (Weaver, 2014b, p. 385).

In response to the accident and the findings of these experts, the regulatory landscape shifted quickly:

Industry professionals who knew the many gaps that existed in the U.S regulatory framework for offshore safety presented the Obama administration with a list of immediately actionable recommendations to enact into requirements. In a nanosecond compared to years past, the newly restructured federal safety regulator passed requirement after requirement, many based on industry recommended practices and standards that it had not been able to implement before crude oil started washing ashore in Louisiana. International industry trade associations, notably the IADC and the OGP, were agents of change in all three areas, pushing the United States to move to Europe's higher standards while also strengthening Europe's safety framework (Weaver, 2014a, p. 205).

Important changes resulted. The government agency was restructured, and a new approach to achieving safety was adopted in order to reduce conflicts of interest. Conflicts of interest, according to one observer, may be a particular concern in Brazil since Petrobras is majority-owned by the government (Sousa, 2011), so it is important to ensure that regulators are as free as possible from political pressures to cut corners in the interests of profit.

In the United States, the new regulatory approach relies primarily on what is called the Safety Case approach, which is "basically a self-regulatory system" (Weaver, 2014b, p. 402). The Safety Case is a written demonstration that the facility and the operation are "capable of providing a safe working environment for personnel and that there are sufficient barriers to reduce identified hazards and risks to 'as low as reasonably practicable' or 'ALARP', the common European standard for environmental and safety risk reduction" (Weaver, 2014a, p. 191). Indeed, as one commentator reports:

The most important effect of Macondo was the rapid importation into the Gulf of lessons learned from the North Sea to better assure that well failure would not occur in the future. Virtually overnight, a safety management system, often likened to the "Safety Case" regime used in the North Sea, was transported from European waters to the Gulf of Mexico. While differing significantly from the Safety Case regime actually used in Norway and the United Kingdom, the new American "Workplace Safety Rule," also called the "SEMS rule" (for Safety and Environment Management Sys-

tem), requires offshore operators, for the first time, to have in place a "comprehensive management program for identifying, addressing and managing operational safety hazards and impacts" (Weaver, 2014a, p. 191).

The industry was also required to create a semi-independent expert group to monitor safety and make recommendations (Weaver, 2014b, p. 403-406). The agency's main goal is to ensure that industry members are doing rigorous safety audits and implementing corrections (Weaver, 2014b, p. 403-406). Without the BP Spill, it is doubtful that industry members would have taken their self-regulatory roles very seriously. But the financial repercussions of the spill on BP have been large enough so that even a major oil company would regard them as non-trivial. Even more importantly, the spill resulted in a moratorium on drilling in the Gulf that was very costly for industry (Weaver, 2014b, p. 414). Consequently, the industry members now have an interest in taking safety more seriously, and in making sure other industry members do so as well to avoid the possibility of another moratorium.

In any event, more remains to be done. The industry needs a system for reporting "near misses" that would help inform safety measures (Weaver, 2014b, p. 485). Equally importantly, the government has a pressing need to increase its own expertise as a regulator to provide "robust oversight" of private safety measures (Weaver, 2014b, p. 494). It also needs much fuller data than it currently receives along with this expertise, if it is to become as successful as the Norwegian and British regulators (Weaver, 2014b, p. 483).

Safety regulation is especially difficult when an industry is using a cutting edge technology, requiring great expertise to understand. Insuring safety through detailed rules and frequent inspection is likely to be ineffective when the industry is large, regulatory budgets are limited, and the relevant expertise is mostly held by the industry. Yet industry cannot be expected to regulate itself. Even the threat of large liability may be ineffective when key members of an organization have short time horizons or have convinced themselves that there is no chance of an accident. All of this proved to be true in the BP situation. The problem is compounded because governments often have a financial interest in expansion of offshore drilling.

The Safety Case approach is probably not fool-proof, but it seems to be the best available option. There is always a risk that industry will not take the Safety Case exercise seriously enough and that government oversight will be lax. But creating a regulatory agency with enough expertise, independence, and manpower

for intensive inspection and constant updating of regulations is probably even more difficult as a practical matter. In order to ensure that all parties attend vigorously to safety, it is important for them to realize that major safety failures will result in very serious consequences. Thus, the issues of criminal and civil liability discussed in the next sections help motivate serious engagement by industry with the Safety Case approach.

## Criminal Liability

Because of the extent of industry safety violations, the federal government brought criminal charges against BP and others. BP agreed to plead guilty and pay a \$4 billion dollar fine for various criminal offenses, some arising from the loss of life on the oil rig:

- BP agreed to plead guilty to 11 felony counts of “misconduct or neglect of ships’ officers.” Jane Barrett, an environmental law professor at the University of Maryland, said the seaman’s manslaughter statute, first passed in 1838 in response to steamboat accidents, has a lower threshold for guilt including “misconduct, negligence or inattention to duties.”
- BP also agreed to plead guilty to one misdemeanor count under the Clean Water Act; one misdemeanor count under the Migratory Bird Treaty Act; and one felony count of obstruction of Congress (Mufson, 2013).

Of the \$4 billion, \$1.2 billion was the criminal fine, nearly all of it under the Clean Water Act (Randle *et al.*, 2013, p. 10311). The company also agreed to probation, which involved close government monitoring of BP’s operations (Randle *et al.*, 2013, p. 10311). The Clean Water Act provides several criminal penalties for violation. Under section 309(c), negligent violations of the statute can be punished with a fine of \$2,500-25,000 per day of violation and up to one year in prison. The fine doubles and the prison sentence goes up to six years for knowing violations. Moreover, under a relatively obscure statutory provision, fines can be increased up to the amount of the victim’s economic loss, which in the case of BP was much larger (Randle *et al.*, 2013, p. 10312). Moreover, a side effect of the agreement was to suspend BP’s rights to bid on contracts with the federal government, a major financial issue (Randle *et al.*, 2013, p. 10317).

There is considerable debate about the proper role of criminal punishment in environmental law (Uhl-

mann, 2011, p. 1448). In the BP case, arguments for criminal liability include the possibility that the company was actually reckless and so deserving of punishment, that punishment will incentivize future care by BP and other companies, and because criminal charges express the seriousness of the misconduct in dealing with such a potentially harmful technology (Uhlmann, 2011, p. 1448-1455).

Of the \$4 billion paid by BP to settle the criminal case, \$2.7 billion was paid in the form of penalties to support scientific research (Randle *et al.*, 2013, p. 10311).

Specifically, the funds were distributed as follows:

- (i) \$2.394 billion to the National Fish and Wildlife Foundation (NFWF) to support restoration efforts in the Gulf states.
- (ii) \$1.15 billion to the Oil Spill Liability Trust Fund to help fund compensation for future spills.
- (iii) \$350 million to the National Academy of Sciences for oil spill prevention and response research.
- (iv) \$100 million to the North American Wetlands Conservation Fund.
- (v) \$6 million to the General Treasury (Ramseur and Haggerty, 2014, p. 8). Notably, this was less than one percent of the total amount, even though criminal fines would typically be sent to the Treasury.

Thus, the fines were not used to help balance the government’s budget. Instead, they were almost entirely used to address the effects of this particular spill, prevention or compensation measures relating to future spills, or other environmental issues in coastal areas.

In addition to criminal penalties, section 309 of the Clean Water Act provides for civil penalties to be assessed by EPA of up to \$10,000 per day. The amount of the penalty is set based on “the nature, circumstances, extent, and gravity of the violation, or violations, and with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit, or savings (if any) resulting from the violation, and such other matters as justice may require” (CWA § 319(g)(3), 33 U.S.C. § 1319(g)(3)). Section 311(b)(7) provides civil penalties of up to \$25,000 per day of violation – or more significantly for BP, up to \$1,000 per barrel of oil or \$3000 if the spill was willfully negligent or due to gross misconduct.

The culpability issue is obviously crucial, since it would raise the cap by a factor of three. It would also influence the extent of the penalty within the cap (Randle



et al., 2013, p. 10316). The issue is whether the violations were “knowing” as opposed to simply being negligent. According to one expert:

The courts of appeals have uniformly held that ‘knowingly’ requires proof that the defendant had knowledge of the facts that constitute the violation: knowledge of the law is not required. For example, in a hazardous waste disposal case, courts have required the government to show that the defendant knew that (1) the material involved was waste; (2) the waste had the substantial potential to be harmful to public health or the environment; and (3) the waste was disposed (Uhlmann, 2011, p. 1455).

A special statute passed by Congress, called the RESTORE Act, dedicates the civil fines in the BP case to restoration of the Gulf Coast. Under RESTORE, 80% of civil penalties go into a fund, with about 65% going to the state governments under their control, 30% going to states for use in implementing a comprehensive plan for restoration, and the remainder going to the federal government for scientific research (Randle et al., 2013, p. 10313).

Thus, although the main purpose of penalties is to punish past conduct and provide an incentive for future behavior, the penalties were also used in this case for constructive purposes. They provided the opportunity for a major influx of cash to address the long-neglected problems of the Gulf area as well as the specific harms caused by the spill.

## Compensation for Harm

The framework for compensation from the BP spill was shaped by an earlier oil spill. In 1989, the *Exxon Valdez* oil tanker struck a reef near Alaska, resulting in an 11 million gallon spill and damaging over a thousand miles of shoreline (Sole, 2011, p. 249). The resulting litigation lasted over twenty years, ending when the Supreme Court set the level of punitive damages at \$500 million; by then, almost 20% of the original 32,000 plaintiffs had died during the course of the litigation (Sole, 2011, p. 249). Hopefully, the BP case will not last such an extended time. As a result of *Exxon Valdez*, Congress passed the Oil Pollution Act of 1990, which amended the Clean Water Act with new provisions for compensating victims (Sole, 2011, p. 249-250).

## Administrative Compensation

The Oil Pollution Act (OPA) requires “responsible parties” such as BP to establish an administrative

compensation system in order to ensure speedy payment to claimants (33 U.S.C. §§ 2712-13). In order to promote speedy payment and discourage litigation, the statute requires that claimants first seek compensation from the fund before they can go to court (33 U.S.C. § 2713). This provision was the basis for BP’s administrative compensation system:

It voluntarily (well, with a little prodding from President Obama) set up an administrative program, the Gulf Coast Claims Facility (GCCF), that aimed to fully compensate all of the victims of the spill. The GCCF’s funding was uncapped. BP brought in the nation’s preeminent independent claims administrator, Kenneth Feinberg, to run the program, free from BP’s interference. BP paid all of the expenses. And it backed up all of this by setting aside \$20 billion in a trust fund, with an open-ended commitment should that amount prove insufficient (Issacharoff and Rave, 2014, p. 398).

In a year and a half of operation, the fund paid over \$6 billion to 220,000 claimants (Issacharoff and Rave, 2014, p. 400). It provided interim payments for past harm including lost earnings and business profits, removal and cleanup costs, physical damage, and injury (Sole, 2011, p. 250). In returning for signing a release, claimants with small claims could obtain \$5000 (for individuals) or \$25,000 (for businesses) as Quick Payments (Sole, 2011, p. 251).

Final Payments were another option, and they included a multiplier (called a recovery factor) to estimate future losses based on past losses; these payments also required a release for all liability, unlike the interim payments (Sole, 2011, p. 251). Initially, the multiplier was two for all claims except for the oyster industry, where it was four, but later the multiplier of four was extended to the rest of the shellfish industry (Issacharoff and Rave, 2014, p. 405). The GCCF estimated business losses by comparing the claimant’s revenue from the remainder of 2010 to either its projected revenue in the remainder of 2010 or its best eight months in 2008 or 2009, with an offset for avoided expenses after the spill (Issacharoff and Rave, 2014, p. 407).

The great advantage of this claim procedure is that it can provide immediate help for victims, who often cannot afford to wait years for litigation in court to come to a conclusion. Yet there is also the risk that desperate victims will be forced to give up their rights in exchange for inadequate compensation. But a claims facility of this kind, if properly designed, can avoid hardship to local residents and help an impacted area recover from the economic effects of a spill.

## Judicial Compensation for Economic Loss

Tort law in the United States is mainly a matter of state law, and in the forty-nine states with common law traditions<sup>12</sup> it is largely judge-made. Liability for offshore oil spills is an exception on both counts: it is largely federal rather than state, and largely statutory rather than judge-made.

Several federal laws impose liability for oil spills. Outer Continental Shelf Lands Act (OCSLA) amendments of 1978 established liability for cleanup costs and damages resulting from OCS activities and created the Offshore Oil Spill Pollution Fund. The amendments apply to offshore facilities and to vessels carrying oil from such facilities. Strict liability for cleanup costs and damages is imposed jointly and severally on the owner and operator, subject to monetary caps. These caps, however, are not applicable if an incident is caused by willful misconduct or gross negligence, or by knowing violation of federal safety regulations. The Fund, which is derived from a fee of three cents per barrel imposed on the owner of oil obtained from the OCS, is liable for all losses not otherwise compensated.

Until 1990, the broadest liability for spills was imposed by § 311 of the Clean Water Act. It made vessels strictly liable for cleanup costs incurred by the government unless the owner proved that the spill was solely a result of an act of God, an act of war, an act or omission of a third party, or negligence by the federal government. These exceptions from liability were narrowly construed. Section 311 also placed limits on damages.

The risk of environmental disaster in coastal waters became utterly unmistakable on March 24, 1989, when the Exxon Valdez ran into a reef, creating the worst oil spill in U.S. history. Over 240,000 barrels of oil were released, with environmental effects lasting for years. For the Exxon Valdez, the limit would have come to \$32 million. However, the limits were not applicable if the government could show that the discharge was due to “willful negligence or willful misconduct within the privity and knowledge of the owner.”

More than a hundred law firms were involved in over 200 suits, involving more than 30,000 claims. The total damage claims exceeded \$50 billion. Although some of these claims were settled or dismissed, over 10,000 remained and resulted in hundreds of millions of dollars in damages. There was also a large award of punitive damages. But there was dissatisfaction about the outcome:

Based on the vast extent of litigation and multi-billion-dollar judgments awarded against Exxon, a casual observer might acquire an impression that the legal system fully compensated the losses suffered by those impacted by the spill. However, the legal system in fact denied redress to many plaintiffs who lost most of their livelihoods as a result of damage to natural resources. Many plaintiffs also did not receive compensation for non-market-based, intangible values that the resources had given them (Bardwick, 2000, p. 259).

The Oil Pollution Act of 1990 (33 U.S.C.A. § 2701 *et seq.*) replaced the liability provisions of § 311. Section 1002 imposes liability on “each responsible party” for removal costs, damage to natural resources, damages “for injury to, or economic losses, resulting from destruction of, real or personal property,” and lost profits “due to the injury, destruction, or loss of any real property, personal property, or natural resources, which shall be recoverable by any claimant.” “Responsible parties” are defined in § 1001(32) to include the owners and operators of vessels, on-shore facilities, or pipelines. The statute provides for unlimited liability if the spill is caused by gross negligence, willful misconduct, or a safety violation.

There are strong arguments for using a strict liability standard for oil spills:

A negligence standard requires both a determination of the standard of care used to judge negligence and a determination of whether the oil firm met that standard. Either of these determinations would be a challenging task. Oil-drilling operations are extremely complex and require specialized expertise – and even with such expertise, fully understanding the appropriate levels of care is extremely difficult for outside observers (Viscusi and Zeckhauser, 2011, p. 1745).

The current statutory scheme is a hybrid, providing strict liability up to a cap, but requiring a showing of serious fault thereafter.

Multiple lawsuits were filed against BP for economic loss. Hundreds of cases, involving thousands of individual claimants plus class actions, were consolidated in front of a federal district judge in Louisiana (Issacharoff and Rave, 2014, p. 400). The proceedings involved “scores of expert reports, hundreds of depositions, and more than 90 million pages of discovery documents” (Issacharoff and Rave, 2014, p. 401). BP changed its emphasis from the administrative fund (the GCCF) to litigation settlement:

<sup>12</sup>The state of Louisiana’s legal system has French rather than English roots.

As the claims by numerous private and public parties were heading to trial, BP decided to shift strategies away from the GCCF model. Instead of the one-by-one offer and acceptance model of the GCCF, BP and the private lawyers organized as the Plaintiffs' Steering Committee [...] reached an agreement on a plan to settle the economic and property damage claims, as well as claims for medical injury for individuals who were not on the Deepwater Horizon drilling platform (e.g., clean-up workers exposed to oil or chemical dispersants) on a comprehensive basis. The parties negotiated two class action settlements that, after notice to class members and court approval, replaced the GCCF with a court-supervised claims resolution facility that, like the GCCF, also aimed to fully compensate victims of the spill (Issacharoff and Rave, 2014, p. 401-402).

Intriguingly, the settlements were overall more favorable to the injured parties than the claims administration. Specifically, the settlements provided more generous mechanisms for estimating future economic harm based on lost revenue immediately after the spill (Issacharoff and Rave, 2014, p. 404-412). These mechanisms were necessarily approximations because of the need to avoid litigating the extent of future lost profits in every individual case. BP's willingness to agree to such generous terms was probably attributable to the greater degree of finality provided by class action settlements, which gave it finality in terms of potential future claims (Issacharoff and Rave, 2014, p. 426-427). Despite congressional hopes that the administrative mechanism would benefit all parties because of its lower transaction costs, the class action had some superior qualities that it could not replicate: "[t]he GCCF, for all its efforts to rapidly provide compensation to an astounding number of claimants in a streamlined, low-cost process, could not measure up to the class action settlement's ability to deliver finality—even at a greater cost—in a fair and equitable manner" (Issacharoff and Rave, 2014, p. 431). Apparently, in order to get the finality resulting from a settlement of the class action, BP was willing to show more generosity in the amounts of the recoveries.

The class action involved an enormous number of claims for economic loss due to the spill. As to some subsets of those claims, the settlement provides that claimants in some particular industries and areas need only prove that they suffered an economic loss and certify (under pain of perjury) that the losses were caused by BP.

The reason for streamlining evidence of causation in this way is simply that it can be enormously complex to determine how a disaster impacted a business's profits. Doing so requires that we reconstruct what the

business's profits would have been in the absence of a disaster. Even in a case where a business was clearly facing other problems, a disaster may have prevented the business from responding effectively to those challenges, to an extent that may be difficult to establish after the fact. By reducing proof of causation to a bare minimum in regions and business sectors where causation was most likely to have existed, the settlement made the processing of claims much more efficient. The side-effect, however, was to increase the likelihood that some claimants would receive more compensation than they would have gotten if there had been a full inquiry into the facts of their cases.

Tort law generally does not provide compensation for economic harms from a wrongful act in the absence of some physical harm to the plaintiff. Thus, at common law, lost profits resulting from an oil spill could be recovered only by plaintiffs whose property experienced physical contact with the oil. That would mean that the oil company would escape liability for much of the harm caused by the spill. Federal law expands the scope of oil company liability, but as a result can open the door to difficult questions regarding proof of causation and measurement of damages. The settlement was designed to avoid costly disputes about these matters in the areas and industries where the claimants were mostly likely to have been harmed by the spill.

BP argued that the settlement (as implemented) required payment even in cases where the claim form itself raises questions about causation. It complained that it might have to make payments in cases where a business would have closed for some obvious reason apart from the spill. One element of standing is that an injury be "fairly traceable" to the defendant's actions. Hence, according to BP, those class members lack standing, and since standing is jurisdictional, even BP's agreement to pay them cannot make them part of the case.

In theory, issues relating to Article III jurisdiction cannot be waived. The Supreme Court has held that the kind of showing to be made regarding standing depends on the procedural stage of the case. In order to allow the settlement process to function, the burden of proof on members of the class must be light. Otherwise, it would be impossible to settle a mass tort case since the court would have to conduct a hearing about injury, causation and the existence of at least some legally compensable damage for every member of the class to ensure that it had jurisdiction. So the only question in this particular case is whether the bar is quite as low as simply stating causation under penalty of perjury (even when other portions of the form raise questions about

causation). The courts have ruled against BP on this issue: *In re Deepwater Horizon*, 744 F.3d 370 (5<sup>th</sup> Cir. 2014) *reh'g denied*, 13-30315, 2014 WL 2118983 (5<sup>th</sup> Cir. May 19, 2014). As a matter of common sense, it is hard to see why BP should be released from its own voluntary settlement agreement.

### **Judicial Compensation for Harm to Natural Resources**

The statute also provides compensation for harm to natural resources in suits by public entities. It requires the President to issue regulations governing the measurement of damages for injury to natural resources. Measuring damages for injuries to natural areas poses interesting issues. Section 100 6(d) (1) of the 1990 Oil Pollution Act provides that the measure of natural resource damages is:

- (a) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources;
- (b) the diminution in value of those natural resources pending restoration; plus
- (c) the reasonable cost of assessing those damages.

These costs are to be assessed with respect to the restoration plans promulgated by federal or state trustees. Section 106(e) requires the President to issue damage assessment regulations; damage determinations pursuant to those regulations enjoy a rebuttable presumption of correctness (Viscusi and Zeckhauser, 2011, p. 1746).

In theory, valuation should include the amount people are willing to pay for the continued existence of a natural resource that they do not currently use and have no immediate plans to use. A method known as “contingent valuation” has been used to assess this “nonuse value” through survey questions. There is considerable controversy about the reliability of this methodology. In *Ohio v. Lujan* (880 F.2d 432 [D.C.Cir.1989]), the court held that the regulations must cover “non-use values,” which can only be measured presently using contingent valuation. The Secretary of the Interior issued new and more flexible valuation rules for assessing natural resource damages from toxic wastes. The National Oceanic and Atmospheric Administration (NOAA) developed parallel rules under the Oil Pollution Act of 1990. These rules were upheld in *General Electric Co. v. United States Dept. of Commerce*, (128 F.3d

767 [D.C.Cir.1997]). The court found the *Ohio* ruling decisive regarding the general legitimacy of contingent valuation. Any claims that a particular contingent valuation was performed without adequate safeguards could be addressed in a later enforcement proceeding.

In the BP case, BP agreed to pay an early restoration fee of \$1 billion before the extent of the natural resources claim was determined (Randle *et al.*, 2013, p. 10313). The government will then request that BP take part in a “cooperative assessment” of the damage and the cost of restoration (Randle *et al.*, 2013, p. 10314).

One of the components of damages under § 1006 is the cost of restoration. Arguably, only restoration can fully compensate the public for loss of a natural area (Wendel, 1991). But restoration may not always be practical, or at least may be delayed or incomplete. This possibility requires the court to assess damages based on the inherent value of the natural resources, which can be difficult since many ecological benefits are not traded in markets. At that point, contingent valuation comes into play.

### **Conclusion**

The BP Oil Spill established three things beyond doubt. First, deep water oil drilling poses substantial risks, including widespread economic harm if a massive spill occurs. Second, the industry cannot be relied upon to police itself without government oversight. Third, compensating the victims of a spill can be an extremely large and difficult task, placing heavy demands upon the legal system.

In the case of the BP Oil Spill, the United States legal system has done a credible job of compensating victims and stands ready to assess additional damages for ecological harm. This outcome is due in no small part to the statutory reforms enacted after the previous major spill in 1989 (Exxon Valdez). It is also due to the adroit use of administrative compensation and settlement procedures, with no small credit to the force of public opinion and government pressure on BP to show its goodwill.

On the regulatory side, there seems to be a conscientious effort to upgrade safety measures in the industry. It remains to be seen whether the “safety case” approach, which does count on some degree of cooperation by industry, will be successful after the initial pressure on the industry following the BP Spill subsides over time. A more conventional regulatory approach would clearly require a major investment of resources to maintain a large staff of government experts and inspectors, which



does not seem to be available at this time. We can only hope that the BP Spill represents a turning point for the industry internationally, and that other countries such as Brazil are able to profit from the U.S. experience.

The era of deep water oil drilling will eventually come to an end, due to technical limitations, restricted reserves, or global concerns about climate change. In the meantime, however, it will remain a lucrative, large-scale activity. It must be a priority to ensure that the damage from this activity is minimized. When accidents do happen, the costs of accidents must fall on the recipients of those large profits rather than on coastal residents and ocean ecosystems.

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