

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

Brandon Sousa*

ABSTRACT: This article provides an overview of the American and Brazilian liability system triggered when chance or human error allows an oil spill to occur. Section II of the article discusses the factual background to the Deepwater Horizon spill and the present state of all claims brought against British Petroleum. Section III then describes the private claims against British Petroleum, outlining the legal analysis of responsible parties under the Oil Pollution Act, limitation of liability, circumvention of the pure economic loss doctrine, private claims sounding in state law rather than the federal OPA, and finally discusses the Gulf Coast Claims Facility. Section IV delves into the nature of claims brought by the public sector against British Petroleum, both civil penalties and natural resource damages. Section V moves into the Brazilian legal environment and the potential for damages there. The section discusses background law, the regulatory environment, and mentions some previous spills of significant effect in Brazil. Section VI discusses the potential for private torts in Brazil. Section VII then outlines Brazilian public claims against an oil spill polluter and the calculation of natural resource damages. The article concludes in Section VIII with a brief comparison of the systems in action.

KEYWORDS: Oil Spill, Liability, Deepwater Horizon, Tupi, Environmental Law.

* Knauss Marine Policy Fellow, NOAA Office of Protected Resources. J.D., Tulane University Law School, class of 2011. I would like to thank Professor Colin Crawford for giving me the opportunity to visit Brazil, a beautiful nation that I hope is never tarnished by a disaster like the Deepwater Horizon spill. I deeply appreciate the research help of Marianna Monjardim Barbosa. I also wish to thank Professor Amy Stein for serving as my advisor.

I. INTRODUCTION

The catastrophe of British Petroleum's Deepwater Horizon oil spill in the Gulf of Mexico drew global attention. The dramatic images of the burning rig, the eleven deceased workers and their grieving families, the massive scale of the environmental degradation caused by the oil's release, and the extent of the cleanup task¹ triggered by that spill gave important press and publicity to the risks of an offshore oil rig blowout. The silver lining to this disaster is that, hopefully, legislators, governors, environmental advocates, and local businessmen around the world will kick the tires on their oil spill response and compensation schemes. The EXXON VALDEZ spill finally convinced the American legislature that spills are an unavoidable fact of oil production that must be foreseen and prepared for, leading to the passage of the Oil Pollution Act of 1990 (OPA 90). The Deepwater Horizon blowout, through its sheer size and devoted coverage by the global media, may serve as an "EXXON VALDEZ" for the world at large.

History demonstrates that oil spills have served repeatedly as the catalyst for enhanced government regulation of oil extraction. A foundation for understanding the development of oil spill liability law is this history of oil spills serving as burning red flags to draw the attention of the public and the government to oil extraction. In the United States, the EXXON VALDEZ spill was an essential catalyst to the passage of OPA 90 (Sump 2011). The Santa Barbara oil spill has been credited with galvanizing Congress into passage of some of the major U.S. environmental laws, along with other famous environmental disasters like the burning of the Cuyahoga River (Corwin 1989). In fact, these catastrophic events are critical to get around the human tendency to ignore the incremental. Every decade, standard oil extraction activities result in an small spills equivalent to an estimated 40 million gallon spill—nearly four times as large as the EXXON VALDEZ spill—yet this raises little attention (Houck 2010).

The need to reexamine oil spill liability and compensation schemes is enhanced by the world's increasing dependence on offshore drilling like the Deepwater Horizon to provide new oil production. The old, onshore, pressure-driven style of extraction is becoming rarer as the global thirst for oil exhausts this low-hanging fruit (Bengali 2010).

¹ The government estimates that 4.9 million barrels of oil, or 205.8 million gallons, were released into the Gulf from the oil spill (Achenbach & Fahrenthold 2010).

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

In the past decade, demand has outpaced supply, resulting in higher prices, which in turn encourage the colossal effort it takes to mine for “deepwater” reserves—an offshore oil supply hidden beneath more than 500 feet of water (Johnson 2011).² This newly-tapped source of oil holds vast reserves. It is the future of oil production.

In the United States, deepwater drilling occurs mostly in the Gulf of Mexico, and the Gulf’s offshore drilling comprises approximately 30% of total domestic U.S. production (Ibid.). Thus, the Gulf possesses a wealth of petroleum resources that, despite the risks of the extraction process, is clearly too valuable to our society to forego. One example of this is the furor raised over the temporary moratorium on new drilling, despite the damage from the Deepwater Horizon spill.³ The Energy Information Administration “estimates ‘a vast majority’ of projected increases in U.S. production in the near term will come from Gulf deepwater fields similar to the site of the Deepwater Horizon spill” (Johnson 2010).

Like the United States, Brazil is beginning to exploit its offshore production capacity, and in a big way. In 2007, Brazil announced the largest new oil field find since 2000 (What Lies Beneath 2008). The Tupi oil field off the coast of Rio de Janeiro and Espirito Santos is estimated to hold between five and eight billion barrels of oil, a number that increases Brazil’s known reserves by half. Other fields in the area are also potential giants, including the Jupiter field and the Carioca-Sugar Loaf field. This year, the Tupi field is projected to reach the first stages of production, with roughly 70,000 barrels produced from its first wells each day (de Oliveira 2010). The field lies under deepwater, with the reserves existing as a pre-salt layer thousands of meters further below the seafloor. While proper production from the field will be an economic boon to the nation the precarious nature of deepwater drilling in general raises concern about the possibility of a blowout or other disasters, and whether the liability and compensation scheme will be a ready and resilient one.

Because of the gathering importance of deepwater drilling for world energy resources, combined with the possibility and probability of eventual accidents, it is

² Also, while 500 feet of water is the border that marks “deepwater”, it is important to note that the Deepwater Horizon was in roughly 5,000 feet of water, and “ultradeepwater” reserves are sought in greater than 5,000 feet of water.

³ The uproar included an aggressively fought, successful judicial challenge to the moratorium (Hornbeck Offshore Servs., LLC v. Salazar, 696 F. Supp. 2d 627 (E.D. La. 2010)).

important to examine national liability and compensation plans thoroughly before a spill occurs, searching out the weak points and comparing strong points. This paper seeks to take part in this process of kicking the tires by comparing the U.S. and Brazilian oil spill liability and compensation schemes. The United States has just had its system “kicked”, and hard, producing a wealth of knowledge about the result. Brazil should seek to learn from American mistakes, and the American history of oil spill compensation and liability, to protect its people in the eventuality of a spill. Given the vast reserves to be developed off the coast of Brazil and the United States, proper preparation for the impacts of a spill is critical to a responsible use of the resource.

II. FACTUAL BACKGROUND AND THE CLAIMS PROCESS

On April 20, 2010, a complex series of mechanical and human failures led to an explosion on the Deepwater Horizon mobile oil drilling rig in the Gulf of Mexico and the catastrophic release of oil from the Macondo well. The operator had intended to shut down the well and move on, and was in the process of sealing the well with cement. Most likely because of nitrogen breakout, the cement was porous—it allowed pressurized hydrocarbons to pass through it. Cement and the “float collar” in the wellbore also failed to contain the hydrocarbons. These mechanical failures were not noticed by rig staff until after the hydrocarbons had entered the riser and were on their way to the platform. The crew diverted the hydrocarbons into a mud gas separator system, which released gas into the air. The ventilation system likely carried this gas into the engine room, where ignition occurred, causing an explosion and fire that killed eleven of the rig’s workers and injured seventeen.⁴ The explosion, fed by hydrocarbons coming up the drill pipe, resulted in an enormous fire that eventually sunk the Deepwater Horizon.

While the devastation caused by the spilling oil could have been prevented by the blowout preventer device on the sea floor, it failed repeatedly to respond to the operator’s attempts to use the blowout preventer to seal the well. A faulty valve and insufficient

⁴ The deaths and injuries to these maritime workers trigger a special legal regime applicable to workers classified as seamen or longshore workers. These laws fall within the admiralty powers of the federal government, excluding state control. Because of their complexity (and relatively low judgment amounts compared to the damage to the environment caused by the spill), they will not be treated here. A capable treatment of these issues is available in John W. deGravelles and J. Neale deGravelles, *The Deepwater Horizon Rig Disaster: Issues of Personal Injury and Death*, *Tul. L. Rev.*, vol. 85.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

battery charge prevented automatic shut-off, 33 hours after the explosion, when the operator attempted to force the blowout preventer to operate by using a robot to initiate closing, the “blind shear ram” which seals the well failed to deploy effectively, allowing oil to continue to flow (British Petroleum, Deepwater Horizon Accident Investigation Report). Interestingly, the Brazilian National Petroleum Agency has called for the use of an acoustic trigger backup, a remote control device that could be used by a lifeboat or other vessel to trigger a failed blowout preventer. This device was not required by the United States, removing a possible failsafe for the Deepwater Horizon blowout that might save a Brazilian oil well from such a disaster (Gold et al. 2010).

Over the next 87 days, oil flowed from the Macondo well into the Gulf of Mexico. The government estimates that 172 million gallons of oil were released into the ocean, roughly 4.9 million barrels of oil, dwarfing most other known oil spills⁵ and outstripping the former largest spill, a 3.3 million barrel spill from the Ixtoc I rig off of Mexico (Robertson and Krauss 2010). Oil washed onto the shores of four U.S. states, Louisiana, Alabama, Mississippi, and Florida, seriously impacting Gulf fisheries and weakening tourism during the important summer season (Times Topics, Gulf of Mexico Oil Spill). The response effort to contain the oil, burn it off, rehabilitate injured wildlife, and clean the wetlands was gargantuan, involving at times 45,000 employees (British Petroleum, Deepwater Horizon Accident Investigation Report 2010). Thankfully, due to fortunate environmental conditions, the worst possible scenario of environmental destruction was avoided. An unusual ocean current moved part of the oil plume away from shore, and the relatively warm waters allowed for microbial breakdown of the oil faster than was expected. However, the spill caused serious damage to hundreds of thousands of individuals and businesses and to the environment, with lingering potential environmental impacts. One team of scientists from the Woods Hole Oceanographic Institution discovered, for instance, a plume persisting underwater with only insignificant microbial breakdown (Camilli et al. 2010). The greater picture of the environmental damage will likely take years of scientific study to determine.

⁵ For example, the infamous Exxon Valdez supertanker spill, which captured the attention of the nation and was a driving force behind the passage of the Oil Pollution Act of 1990, involved a spill of eleven million gallons of oil, an almost quaint amount compared to the 172 million gallons released by the Macondo well.

The lease operator for the Macondo well, and the primary target for liability so far in the unfolding drama of compensation, is British Petroleum. But three other entities played key roles in the spill. The Deepwater Horizon was owned by Transocean, the largest mobile drilling rig operator in the world, Cameron International Corporation manufactured the failed blow out preventer, and Halliburton was the contractor in charge of the pre-blowout operations to close the well. The disaster has led, so far, to over 505,000 claims for damages from individuals and businesses, as well as dozens of claims by government bodies for the costs of their response measures (Gulf Coast Claims Facility; BP.com, Government Claims).

But, the liability game has barely started. Governments have sought money to cover the expense of their responses to the oil spill, but the government is just beginning to act. The Department of Justice has initiated the steps to bring civil and criminal penalties, which can result, in a case of a spill this massive, in billions of dollars of fines under the Clean Water Act and other environmental statutes. Next, the affected sovereigns have the right to bring claims for natural resource damages, the calculation of which will be complex, but certainly likely to result in a large final number. With these avenues of liability opening, it is unclear whether the fund will be sufficient. The battle to fix liability and win compensation will be a long one.

Brazil should watch this battle play out, and consider how the same war of liability and compensation would develop under its system, especially considering that one of the major players in oil development in the Tupi field is a quasi-public entity, Petrobras. If, as seems inevitable, a spill does one day occur off the coast of Brazil, tarring the important tourist beaches of Ipanema and Copacabana, suffocating the fisheries, and strangling the rich Brazilian wildlife, how Brazil chooses to balm the injuries and fix liability will have a great impact on the effectiveness of compensation.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

III. AMERICAN PRIVATE CLAIMS

A. RESPONSIBLE PARTIES FOR THE OIL SPILL AND LIMITATION OF LIABILITY IN THE UNITED STATES

The passage of the Oil Pollution Act (OPA) of 1990 was galvanized by the EXXON VALDEZ spill, and passed both Houses of Congress with no opposition. The first, and primary, consideration when beginning to apply the OPA is to determine who is a responsible party (Oil Pollution Act, 33 U.S.C. § 2702(a)). Responsibility passes under a strict liability scheme to one who discharges oil or poses a substantial threat of oil discharge into navigable waters, the adjoining shorelines, or the exclusive economic zone from any vessel or facility.

These elements were satisfied as to both BP and Transocean. The United Nations Convention on the Law of the Sea established a customary exclusive economic zone 200 miles out from national coastlines.⁶ The Macondo prospect was only about 40 miles from the coast of Louisiana, satisfying that element of liability. Also, the tar balls and loose oil that affected beaches and marshlands was a discharge onto shorelines adjoining the navigable waters of the United States.

The picture is a bit more complicated when pinning the status of “responsible party” onto the discharger here. The Deepwater Horizon was a Mobile Offshore Drilling Unit (MODU), which is both a vessel and an offshore facility, two categories governed by different rules under OPA (33 U.S.C. § 2701(18), (22)). The responsible party for a vessel is its owner, operator, or demise charterer, while the responsible party for an offshore facility is the lessee or permittee for the tract of seabed the MODU operates upon. The Deepwater Horizon was a vessel owned by Transocean, and also an offshore facility owned primarily by BP.⁷

⁶ The United States has not ratified the Law of the Sea Treaty, but has claimed jurisdiction within the 200 mile exclusive economic zone consistent with the treaty’s language. The White House, Office of the Press Secretary, United States: Proclamation on an Exclusive Economic Zone (1983), *available at* www.gc.noaa.gov/.../031083-white_house_fs_oceans%20Policy.pdf.

⁷ Although BP owned the majority of the Macondo prospect and has taken charge of the response and claims procedures, BP owned only 65% of the prospect. Mitsui Oil Exploration Company of Japan owned 10% and Anadarko Petroleum owned 25% of the prospect. Their potential liability is also devastating, and has sliced through their market capitalization. *See* John Schwartz, *Liability Questions Loom for BP and Ex-Partners*, N.Y. TIMES, June 24, 2010. In their attempts to dodge liability, these former partners of BP are alleging that BP was grossly negligent and that all liability should hang on BP. *See ibid.* Although an act

Limitation of liability under the OPA is a critical factor here. The statute caps liability, under some circumstances, at an extraordinarily low amount, compared to the extent of the damage done by the spill. Transocean is responsible for the Deepwater Horizon as a vessel. Vessels are liable for removal costs and damages up to a cap based on the tonnage of the vessel, and here, the weight of the Deepwater Horizon results in liability for Transocean of up to \$65 million (Perry 2010, 44). In contrast, BP as the lessee in charge of the Deepwater Horizon as an offshore facility faces much more significant costs. First, offshore facilities are responsible for *all* removal costs, without a liability cap (33 U.S.C. § 2704(a)3). Thus removal efforts undertaken by private property owners and the efforts of the federal and state governments are all compensable by BP (and perhaps its partner corporations). Second, offshore facilities are responsible for claims of damages up to a \$75 million cap. This number, compared to the billions of dollars BP has paid out through the claims center for economic damages, seems laughably small. There are two likely answers for BP's apparent beneficence. First, where a responsible party has been grossly negligent or has failed to follow applicable safety, construction, or operation regulations, no limitation on damages applies (33 U.S.C. § 2704(c)1). Second, state laws may supplement OPA and allow for greater damages.

Because of the several failures outlined in section II of this article, BP has a difficult legal argument to make ahead to avoid a finding of gross negligence. But, regardless of the ultimate finding, the company is paying out in billions already through the claims process discussed below. These payments compensate many plaintiffs injured through the loss of tourism or the loss of fisheries, claims that without OPA might have been barred.

or omission of a third party is a defense to liability, the defense is a narrow one that does not seem to apply here. The defense was interpreted so that "it does not apply where the third party was an employee, an agent or a person whose conduct occurs 'in connection with any contractual relationship' with the responsible party. The term 'any contractual relationship' was interpreted broadly to include any commercial contact, even in the absence of a formal contract." Ronen Perry, *The Deepwater Horizon Oil Spill and the Limits of Civil Liability*, at 42 (2010), available at <http://ssrn.com/abstract=1685963>. Given the limitations of the "third party" defense, Mitsui and Anadarko face an uphill battle. *See id.* at 41-42.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

B. PURELY ECONOMIC LOSS: ROBINS DRY DOCK MEETS OPA

In very broad strokes, the world of torts can be divided into two wide regions. First, the traditional, direct loss occurs when a plaintiff is damaged by a tortfeasor in that plaintiff's person or property. Second, relational economic damage occurs when a tortfeasor damages a third party, which in turn causes loss to plaintiffs that depend on the third party for business relations. For instance, if an oil spill deposits tar onto a privately-owned beach, the beach owner's property has been damaged, and direct loss has occurred. If a nearby restaurant depends on the beach owner visiting his property and bringing his business to the restaurant, then the loss of that business would be a relational economic loss. American tort law traditionally provides relief solely to direct losses under the rule of *Robins Dry Dock & Repair Co. v. Flint*. This rule is closely followed because of the judicial fear of an endless extension of liability. Loss caused by a direct injury is relatively clear, apparent, and easily shown. The further attenuated the connection to the tortfeasor, the more complicated, time-consuming, unclear, and potentially unjust the calculation of damages becomes. Justice Cardozo famously opined in *Ultramares Corp. v. Touche* that allowing relational economic loss claims would lead to "liability in an indeterminate amount for an indeterminate time to an indeterminate class."

Without OPA to mitigate this bright-line rule, few of the current plaintiffs would have a valid claim against British Petroleum.⁸ No individual owns the natural resource of a beach or sea life, but the beach attracts tourists who then dine on seafood caught by local fishermen and served in local restaurants. These natural resources support substantial economic uses. Although no individual has ownership of the resource, it is generally accepted that OPA displaced the common law rule against recovery for relational economic loss through three brief words. Among many causes of action, an OPA plaintiff may bring a claim when they suffer "the loss of profits or impairment of

⁸ It is important to note here that a long-standing exception to this bright-line rule allowed fishermen to recover losses when the fisheries they depend on were affected. This exception arose after the Santa Barbara oil spill in *Union Oil Co. v. Oppen*, where the court established the fishermen's exception, reasoning that "the direct causal link between the impact of escaping oil on aquatic life and plaintiffs' losses, public disapproval of environmental harm, the policy of preventing such harm, and the fact that the oil company was the cheapest cost avoider ... pointed to the existence of a duty of care." 501 F.2d 558, 570 (9th Cir. 1974).

earning capacity due to the injury, destruction, or loss of real property, personal property, *or natural resources*” (33 U.S.C. § 2704(b)(2)E). Those last words open up the prospect of liability for injury to commonly-held natural resources that causes relational economic loss to people whose livelihoods depend on the resources.

Thus, the proper plaintiff in the GCCF claims process is found by reference to OPA, which, as discussed above, grants liability in tort to a much broader range of claimants than under traditional pure economic loss doctrine. Because when OPA defined the compensable causes of injury it included losses due to a damage to “natural resources”, the OPA opens up a critical cause of action. The proper plaintiff includes any claimant who lost profits or earning capacity due to the closure of beaches, the loss of seafood, and the loss of income from deferred tourism. The GCCF provides as examples: “[L]ost earnings by a fisherman whose fishing grounds have been closed or a hotel or rental property that has had decreased profits because beaches, swimming, or fishing areas have been affected by the oil from the Spill” (Gulf Coast Claims Facility, Protocol for Interim and Final Claims, pt. II.C). A plaintiff raising a claim based on loss resulting from damage to natural resources needs to provide documentation regarding six criteria: identification of the injury, information about the lost profits, reduction of earnings or profits, amount of earnings or profits in comparable time periods, earnings received from alternative employment, and savings to overhead not incurred as a result of the spill. Once this information is provided, a plaintiff can bring a claim for relational economic loss in court or through the Gulf Coast Claims Facility as discussed below.

C. STATE LAW CLAIMS AND PREEMPTION

Though OPA provides a complex and comprehensive treatment of oil spill liability under federal law, the statute expressly allowed for further state regulation of the same matter through a savings clause. “These [savings] clauses explicitly preserved existing state common law and oil pollution legislation, and allowed subsequent expansion of liability by the states” (Perry 2010, 50). Observing that power, many coastal states have passed their own oil spill legislation, complicating the liability picture considerably. One critical question is whether state law can grant an alternative recovery if federal courts find no gross negligence on the part of BP and thus the OPA caps

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

liability. State law might choose to place no cap on liability even where there was only simple, not gross, negligence. If that state law also provides for relational economic loss, state law could be key for plaintiffs' recovery.

Although the U.S. Supreme Court has questioned the constitutionality of such state "admiralty" laws, other constitutional arguments have preserved states' ability to regulate in this area (Robert Force, Davies, & Joshua Force 2011 [discussing and partially refuting these arguments]). The well-known *Knickerbocker Ice* case held that the Admiralty Clause of the Constitution grants sole power to regulate admiralty to the Congress, and therefore any attempt by the federal government to delegate legislative power over admiralty to the state would be constitutionally invalid. The application of relevant jurisprudence to this area, however, suggests that unless Congress meant to provide an exclusively maritime remedy (not the situation here), then the delegation is constitutionally permissible (Force & Davies 2011, 159-60). Also, the original police powers of the states would have incorporated pollution protection, so Congress acts well within constitutional bounds when it holds back from displacing state police powers (Ibid., 162-63).

So, states could likely regulate here, but neither of the two states affected by the spill that did produce state oil spill legislation allowed for relational economic losses in those statutes. The states of Florida, Alabama, Mississippi, and Louisiana were most affected by the oil spill.⁹ Of these states, only Florida and Louisiana have passed legislation supplementing the OPA.

Louisiana's legislation appears to be a mere replica of the OPA, although with one major flaw (La. Rev. Stat. §§ 30:2454(5), (22), 30:2479(A)). Professors Force and Davies point out that the statute drafters failed to put in an operative provision that provides liability is imposed on responsible parties (Force & Davies 2011, 177). However, one would think that such an obvious oversight would encourage courts to read in a liability clause. Without reading in such a clause, the purpose and intent of the legislation would be completely eliminated. But regardless of whether the courts would engage in this statutory gap-filling, Louisiana's oil pollution law also does not contain the

⁹ Texas was also affected, but only mildly. Texas claimants have received a bare 2% of the current BP payouts (GCCF Status Report, 1).

critical words allowing recovery for relational economic losses due to natural resource damage. So, it is probable that a *Robbins Dry Dock*-type bar to relational losses would exist under the state law.

The state of Florida's oil pollution laws are better developed. "Florida imposes strict but limited liability for clean-up costs, but strict and unlimited liability for natural resource damages, damage to real and personal property and losses consequential upon property damage" (Ibid., 176). While Floridian law thus provides for unlimited liability, like Louisiana's law it does not allow for relational economic losses. State law in Florida and Louisiana will not, therefore, provide an alternative recovery for most Deepwater Horizon plaintiffs.

D. THE GULF COAST CLAIMS FACILITY

The economic impact of the oil spill on Gulf States was serious and has generated massive amounts of claims against BP. Disruption of the fishing industry and, most importantly, the critical beach, seafood, and tourism industry resulted in huge losses taxed to BP through the Gulf Coast Claims Facility (GCCF), the quasi-public entity running claims processing for BP under the direction of Kenneth Feinberg, the lawyer previously appointed to handle the compensation process for victims of the 9/11 attacks on the World Trade Center in New York.

The alternative to a voluntary claims payment, and one pursued by many tens of thousands of plaintiffs, is to sue BP in the multi-district litigation venued under Judge Carl Barbier and Magistrate Judge Shushan in the Eastern District of Louisiana. The proceeding is titled *In re Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010, Multidistrict Litigation Number 2179*. That proceeding promises to determine the fate of billions of dollars and lead to significant interpretations of the Oil Pollution Act.

For now, however, while the no doubt lengthy¹⁰ court battle is in its earliest skirmishes, hundreds of thousands of plaintiffs are playing out their claims process

¹⁰ The time frame here could be almost a generation long. The EXXON VALDEZ disaster, which spilled considerably less oil, in a less populous area, resulted in litigation that lasted for almost two decades. The final play in that saga was a very important U.S. Supreme Court decision regarding the appropriate method

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

through the GCCF. The OPA required a responsible party to set up a process for handling private claims outside of court, and this has been done through the GCCF's various claims offices along the Gulf Coast (Oil Pollution Act, 33 U.S.C. § 2714). The Facility has treated over 505,000 individual and business claimants so far—only about 30,000 of which were represented by counsel. After a period of granting only emergency advance payments, the GCCF transitioned to also providing final settlement payments, accompanied by a waiver of further liability (Searcey 2011). The price tag on already-paid claims alone is astronomical. The GCCF has, as of February 10, 2011, shelled out roughly \$3.9 billion to individual and business claimants on the escrow fund (GCCF Status Report February 2011). BP estimates that it has paid out over five billion dollars when including government claims (BP.com). Government claims are still being handled by BP's claims office. The claims are made on a BP-established trust and escrow account, with the amount to be placed in escrow set at \$20 billion (BP.com, Gulf of Mexico Oil Spill Escrow Trust 2010).

The billions of dollars of payouts have mostly been handled so far through an Emergency Advance Payment program, which ended November 23, 2010, moving on to an interim payout process with the option of a final payment. Final payments, unlike interim payments, are intended to compensate both past and future damages and require a full waiver of liability by the claimant barring any further oil spill-related actions against any responsible party to the spill. The GCCF has also adopted a "Quick Payment Final Claim" process that applies to claimants which have already received an Emergency Advance Payment. The Quick Payment Final Claim option grants a fixed payment of \$5,000 to individuals and \$25,000 to businesses in return for a final settlement and waiver of liability (Gulf Coast Claims Facility, Summary of Options). Interestingly, these quick payments require no documentation beyond that submitted to receive the Emergency Advance Payment. Over 110,000 claims have been finally settled through the quick payment process (GCCF Status Report Feb. 2011, 1).

This extra-judicial claims process required by OPA has created a vast parallel adjudication process marked by relative informality. For instance, claimants can file their

of calculating punitive damages. *See Exxon Shipping Co. v. Baker*, 128 S.Ct. 2605, 2611, 2612–13 (2008) (ultimately reducing Exxon's punitive damages from over \$5 billion to approximately \$500 million).

claim with documentation online or through the mail, rather than coming into a claims office (Ibid., pt. III.D). Relatively few of the claimants acquire counsel.¹¹ And, though complaints have been registered about the slowness of the process, it can move with blinding speed compared to the formal judicial process. The protocol that guides the GCCF requires a decision on the claim within 90 days, and if the claimant accepts the offer GCCF must remit payment within 14 days. An informal appeals process presided over by three non-judge “distinguished members of the legal community” handle claims worth more than \$250,000 that a claimant wishes to appeal through this extra-judicial system, or claims worth \$500,000 or more that BP wishes to appeal through this system (Ibid.).

The GCCF claims process provided quick, informal relief to hundreds of thousands of claimants, hopefully easing the emergency economic conditions that descended on many fishermen and tourist-dependent workers. The downside to this informality is that it opens a danger of overpayment and fraud, potentially reducing the total available amount in the escrow fund for legitimate claims and needlessly burdening the responsible parties.¹² The most fascinating aspect of this extra-judicial claims process is that BP has paid out billions of dollars in claims that it almost certainly could never claw back, all without a judicial finding that the company was grossly negligent or failed to follow applicable laws and regulations resulting in the spill. Such a finding is required under OPA to lift the liability cap of \$75 million for damages, which seems absurdly low here. BP’s actions suggest that they view a judicial finding of gross negligence or violation of applicable laws inevitable. Then again, the company had little choice if it wanted to obviate the public relations nightmare that would ensue if it failed to pay

¹¹ As mentioned above, only 30,000 claimants, or about six percent of the total claimant pool, retained counsel.

¹² Two brief interviews with persons involved in the claims process (kept anonymous here) are illustrative. One interviewee is a server at a popular restaurant in the French Quarter, famous for its Gulf Coast seafood dishes. This person benefitted significantly from the claims process, despite the fact that the restaurant imported seafood, and that tourism in New Orleans does not appear to have been heavily impacted. See Charisse Jones & Rick Jervis, “Oil Spill Takes Toll on Tourism on Gulf Coast,” *U.S.A. Today*, June 25, 2010 (“Hotels and eateries in New Orleans, many of which have struggled since Hurricane Katrina struck in 2005, have had their best year since the storm, says Stephen Perry, president of the New Orleans Metropolitan Convention & Visitors Bureau. Downtown hotels have had fewer than 2% cancellations since the oil leak began.”). Access to a Quick Payment Final Claim process, for instance, would have granted him a fixed \$5,000 payment, no matter the true value of his loss. A second interviewee is a claims officer who discussed the problem of fraudulent or opportunistic claims brought before him, often with no documentation of any damages.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

claims. The final determination of negligence and adherence to the law by the federal judiciary will be interesting because of the GCCF's claims process, but, of course, it will also determine the fate of the thousands of claims joined into the multidistrict litigation. A final answer to this question, however, might be years in coming.

IV. AMERICAN PUBLIC CLAIMS

The United States government has the authority to impose several types of penalties for the spill, including civil penalties, administrative penalties, criminal penalties, and natural resource damages claims. These claims amount to at least as much potential liability as BP faces on the private side discussed above.

A. CIVIL PENALTIES

OPA and the Clean Water Act provide for administrative and civil penalties for the discharge of oil into the oceans (33 U.S.C. § 1321(b)(6)(OPA administrative penalties); 33 U.S.C. § 1321(b)(7)(OPA civil penalties); 33 U.S.C. 1319(g) (CWA administrative penalties); 33 U.S.C. § 1319(d) (CWA civil penalties)). The statutory penalties under the CWA for pollution of U.S. waters apply generally to all "pollutants" under the Act, and thus sweep in the discharge of oil. Penalties must be brought under either the OPA or the CWA, however, not under both. There is no doubling up of the statutory penalties, which would likely be an excessive deterrent (Clean Water Act, 33 U.S.C. § 1321(b)(11)). Since the CWA sets a cap on the penalty of \$37,500 per day for each violation,¹³ while the OPA penalties are tied to an amount of oil discharged without a maximum limit per day, it is most likely that an action would be brought under OPA (Clean Water Act, 33 U.S.C. § 1319(d)).

The OPA statutory penalties are not restricted by the limitation of liability cap of \$75 million that applies to claims for damages where the responsible party was not

¹³ Note that the language of the Clean Water Act states a figure of only \$25,000. This number has been adjusted by the EPA to account for inflation under the mandate of the Federal Civil Penalties Inflation Adjustment Act of 1990. See 28 U.S.C. 2461 (authority to adjust civil penalties with reference to the consumer price index); 73 Fed. Reg. 75340, table 1 (notice providing the new penalty schedule). All numbers provided in this article follow EPA's adjusted penalty schedule, not the express language of the statutes.

grossly negligent (Oil Pollution Act, 33 U.S.C. § 2704(a)).¹⁴ The amount of the penalty varies depending on the form of action chosen by the enforcing party.¹⁵ The administrative process is available for smaller penalties, and includes Class I penalties, and the more severe Class II penalties. Though the administrative penalties appear to be easier to implement, they are clearly intended to be used only for small spills. The total maximum penalty EPA can authorize through an administrative proceeding is only \$177,500 (Ibid., § 1321(b)(6)(B)(ii)).

The OPA penalties for the BP spill will be decided through a civil penalty action brought in a federal district court “in which the defendant is located, resides, or is doing business” (Ibid., § 1321(b)(7)(E)). The potential damages here could be, again, an enormous sum of money. The statute provides that a violator “shall be subject to a civil penalty in an amount up to \$37,500 per day of violation or an amount up to \$1,100 per barrel of oil or unit of reportable quantity of hazardous substances discharged” (Ibid., § 1321(b)(7)(A)).¹⁶ That penalty could be tripled, however, if the court finds gross negligence. Grossly negligent violators may be fined up to \$3300 per barrel of oil discharged. These numbers translate to a whopping penalty. The government estimate of the number of barrels spilled by BP is 4.9 million, so the penalty without a finding of gross negligence could be as much as roughly \$5.4 billion, with a finding of gross negligence up to \$16.2 billion.¹⁷

The determination of the amount of the fine, however, is subject to a great deal of discretion on the part of the court, and a penalty at the liability ceiling might not be likely. The court takes into account several factors in its analysis of the appropriate measure of damages:

¹⁴ This is also a critical point of law if Transocean, as the operator of the Deepwater Horizon in its “vessel” manifestation, is drawn into the fray. The tonnage-based cap of \$65 million will not protect Transocean from potential statutory penalties.

¹⁵ The enforcing party here is either the Coast Guard or the Administrator of the EPA. See 33 U.S.C. § 1321(b)(6)(A).

¹⁶ A barrel of oil is defined as 42 United States gallons. Ibid. § 1321(a)(13).

¹⁷ The litigation over the amount of the fine will likely bring into sharp focus the debate over the actual number of barrels spilled. As discussed above, some scientists have estimated the spill to be as much as 300,000 barrels higher than the government estimate, which would allow a non-grossly negligent fine of \$300 million or a grossly negligent fine of \$900 million.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

[1.] the seriousness of the violation or violations, [2.] the economic benefit to the violator, if any, resulting from the violation, [3.] the degree of culpability involved, [4.] any other penalty for the same incident, [5.] any history of prior violations, [6.] the nature, extent, and degree of success of any efforts of the violator to minimize or mitigate the effects of the discharge, [7.] the economic impact of the penalty on the violator, and [8.] any other matters as justice may require. (Clean Water Act, 33 U.S.C. § 1321(b)(8)).

In the case of the BP spill, several factors may weigh against the heaviest possible fine. Under the second criterion listed above, there was no economic benefit to BP from this violation, and, in fact, a massive loss which already proffers a significant deterrent to sloppy operations. Considering the fourth criterion, the word “penalty” is left undefined by the OPA enforcement provisions, but if “penalty” is capacious enough to include the natural resource damages, private claims, and removal costs taxed against BP, then the other penalties here have already been huge. In any case, the extent of the costs BP has paid already and will likely pay may be considered under the catch-all final criterion, which invokes concepts of equity.

B. CRIMINAL PENALTIES

Criminal liability for oil pollution is authorized by the Clean Water Act. The Clean Water Act provides for criminal penalties for those who violate its provisions by discharging a “pollutant” into waters of the United States. Negligent violations of the act can result in a fine of up to \$25,000 per day or one year in prison. A knowing violation merits fines of \$50,000 per day, and up to three years in prison. If the perpetrator also knows that the violation will place a person in risk of death or serious bodily injury, the fine increases to \$250,000 and carries jail time of up to 15 years (Clean Water Act, 33 U.S.C. § 1319(c)(1)-(7)).

C. NATURAL RESOURCE DAMAGES

The process of Natural Resource Damage Assessment (NRDA) promises to be the most complicated and longest-lasting part of the oil spill’s fallout. OPA 90 grants a cause of action to the federal government, states, tribes, and affected foreign governments for the “injury to, destruction of, loss of, or loss of use of” natural resources that those governmental entities hold in trust for the public (Oil Pollution Act, 33 U.S.C. §

2702(b)(2)(A)). Natural resource damages have two goals: to accomplish the restoration of the injured natural resources to “baseline” conditions, and to compensate the public for their loss of the services of these resources during the restoration period. Responsible parties must pay for “the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources” (Ibid., § 2706(d)1(A)).

The damage calculation process is led by the National Oceanographic and Atmospheric Administration (NOAA) through their Damage Assessment, Remediation, and Restoration Program. Trustees are appointed by the President, the affected states’ governors, and tribal leaders to represent these entities during the calculation of damages. NOAA has promulgated regulations that act as the framework for the difficult damages assessment process (15 C.F.R. § 990). The assessment process is divided into three phases: (1) the Preassessment phase; (2) the Restoration Planning phase; and (3) the Restoration Implementation phase.

The Preassessment phase is the briefest, preliminary information-gathering phase. The trustees must find that an incident occurred, that the incident caused injury to natural resources, that the response has not adequately addressed these injuries, and that feasible restoration actions are available. Once these findings have been made, a Notice of Intent to plan restoration is issued and the responsible party is invited to participate in the planning process.

The Restoration Planning stage involves heavy resource damage assessment research. The aim of the involved agencies is to determine the baseline conditions of the resources—how the resources were before the spill—and compare them with the resources as they are after the spill to find whether there has been a measurable adverse change. Any measurable adverse change is compensable by the responsible party. Also, the responsible party must pay for all reasonable assessment costs on the part of the trustees. The trustees must show a causal link between the oil spill and the measurable adverse change.

After the assessment and a showing of causation is achieved, the parties put together a Final Plan for restoration. The final phase is the implementation phase. The responsible party may perform this on their own, allowing for cost savings but also

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

risking cost overruns, or may pay a fixed amount of money to the trustees to perform the task for them (15 C.F.R. § 990.62(b)).¹⁸

This simple sketch belies the tangled web of problems that arise in any natural resources damage assessment, and the massive impact and wide distribution of the BP spill will guarantee more difficulty simply through the volume of research and mitigation projects required. One of the threshold problems, and the most obvious, is how to set a price on lost natural resources. In many instances, a natural resource is commercially harvested, such as many of the fisheries at issue here. In that case, compensation is relatively simple—market price valuation allows one to pay for the loss of fish and shellfish that were killed by the oil. However, many resources have no market for them, and so valuation for their loss is much more amorphous. A good example is the many seabirds that were oiled and killed during the spill, garnering much media attention (Driscoll 2010). The seabirds have no commercial value but still fit within the definition of “natural resources”, which includes the broad term “biota” (15 C.F.R. § 990.30). In this case, the assessors might use a system called “contingent value”, which relies on creating a hypothetical market for the resource by surveying the public on how much they would be willing to pay for the resource, or through creating a hypothetical auction of the resource (43 C.F.R. § 11.83(c)(1)). This method is incredibly controversial, however. The biggest and most credible concern is that responses are innately unreliable when the polled individuals do not have to put any real money on the line.

Natural resource damage assessment may also utilize ecosystem services valuation for resources like wetlands. This form of valuation attempts to assign a commodity value to the resource based on the marketable items that the resource produces. Wetlands, for instance, nurture and generate significant fisheries resources, like oysters, shrimp, and many fish species. A natural resources economist could use the existing market for these resources and determine the loss in the market caused by wetland destruction (Bingham et al. 1995; Alexander 2010).

Second, an important concern in the planning process is avoiding double recovery by the trustees. Because the volume of the claims and projects will be so large, and

¹⁸ The fixed payment may be even more attractive since suits challenging the methods and circumstances of implementation would then not be directed at the responsible party.

hundreds of thousands of claims have already been brought to receive interim loss due to the injury to sea life, many instances of double counting are possible. Exceedingly careful accounting will be required here.

Third, finding the “baseline” conditions can be extremely difficult after the oil spill has occurred. One scholar has pointed out that this problem is a catch-22: in order to recover for the injury to your natural resources after the oil spill, you have to know what they were like before, an impossible task without good preexisting data (Allen 2011, 19).

Lastly, serious problems related to timing arise here in two ways. First, while the planning process is under way, natural forces will restore many of the injured resources (in fact, in time, all natural resources will hopefully be reestablished). The restoration process thus becomes a moving target, a situation that always poses difficult questions for courts and councils to deal with. Second, once the Final Plan is inked, there is no going back for more. The responsible party is off the hook, despite the fact that our imperfect science may not discover lingering effects on the environment for years. For instance, after the much smaller EXXON VALDEZ spill, many fisheries rebounded successfully, but the herring fishery was unexpectedly diminished and has never recovered (Exxon Valdez Oil Spill Trustee Council). Fisheries scientists have no answer for this phenomenon, and OPA does not mandate any further money for restoration from the responsible party.

Currently, the trustees are working through the second phase of the complicated NRDA process. Research on the natural resources injured, the extent of their injury, and finding the causal link to the spill is underway (Natural Resource Damage Assessment). The process is bound to be expensive and lengthy,¹⁹ but will hopefully provide a fair restoration or replacement of the natural resources that have been lost from the public trust due to this disaster.

V. BRAZILIAN POTENTIAL FOR DAMAGES

Like the United States, Brazil is rich in hydrocarbon reserves lying underwater within its exclusive economic zone. The same risk of environmental and economic

¹⁹ A much smaller spill in the San Francisco Bay, only 53,000 gallons of oil, faces an anticipated 5 year NRDA process (Allen 2011, 17).

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

damage exists, balanced by the chance for economic gains and even greater energy independence. The development of the Santos pre-salt basin, including the massive Tupi and Jupiter oil fields off the coast of the state of Rio de Janeiro, offers an opportunity for significant income to the nation through fees and the operations of Petrobras, which is majority-owned by the Brazilian state (Petrobras, About Us). However, the threat of an accident at these deepwater sites raises the specter of the same sort of widespread damage to the public and the concomitant crushing financial liability that has brought British Petroleum to its knees.

In contrast to the American oil industry, the biggest player in Brazil is a quasi-public entity, Petrobras, raising some concerns not present in the American regulatory system. Petrobras is the third largest energy company in the world, and one of the 50 largest companies in the world. Because the company is majority-owned by the Brazilian state, a series of conflicts of interest arise in environmental enforcement that are unusual for a U.S. reader, since the United States does not own fuel production companies (though, of course, several electric utilities are controlled by the federal government, like the Bonneville Power Administration). First, Brazilian agencies have an incentive not to push too hard on the company, since Petrobras' contribution to the national coffers through their profit-making activities is substantial. With net revenue of \$182 billion and net profit of about \$30 billion in 2010, the contribution to the state through dividends on the profit and tax on the revenue must be substantial (naturally, American agencies face a similar problem concerning royalties, though the conflict of interest due to state monetary gain may be less pronounced because of the privatized American oil industry). Second, the opposite problem exists at the same time. The national government as a whole has an incentive to push hard through fines on the company in order to collect more revenue, as fines bypass other investors in the company and state taxes and go to the national government. Finally, it should be generally noted that Petrobras has great sway in Brazilian society; it is the largest private contributor to cultural activities in the nation (Petrobras, Valuing Culture).

These inherent conflicts might be of relevance when the inevitable spill even occurs. Brazil is, of course, no stranger to oil spills on its shores, like all oil-producing nations. Among others, a spill of serious consequence occurred in the Guanabara Bay,

one of the world's great bays for shipping, and, incidentally, one of the primary reasons for the founding of Rio at its current site (Acselrad & Mello 2000). As with all environmental damages claims, the root of danger here is proximity between the potentially harmful activity and the homes and businesses of citizens. The oil fields here are close to the golden beaches of Rio and the coast of southeast Brazil. The Santos Basin is, significantly, much further away from the coastline of Brazil than the Deepwater Horizon, making it possible that a catastrophic oil spill would see much of the pollution washed out into the southern Atlantic rather than onto shore (Petrobras, Map of Oil Fields in Santos and Campos Basins). But the coasts of Florida, Alabama, and parts of Mississippi were at least as far from the Deepwater Horizon, and it is well known that the impacts of the explosion heavily affected these states and triggered great liability for British Petroleum.

Foreign tourism is a large component of Rio de Janeiro's economy. "The city of Rio de Janeiro is one of the world's main tourist destinations, with a powerful brand and image abroad, and is undoubtedly Brazil's main domestic tourist destination" (Figueiredo et al. 2010, 1147). Of the five million tourists visiting Brazil each year, more than 1.5 million of them visit Rio. These tourists in total spend an estimated \$6 billion, employing many thousands of people (Ibid., 1144). Importantly, the largest single driver of tourism to Rio was for "beaches and sun", the form of tourist activity most likely to be deterred by the presence of oil in the water (fig.10).

Besides this foreign tourist income, Rio also benefits from a great deal of domestic tourism (1150). Fisheries, as in the Gulf of Mexico, are also an important source of revenue for the region. Demersal fisheries along the coast were in decline over the last decade as the maximum sustainable yield was exceeded, showing the amount of interest in fishing these waters (Perez 2003, 1-2). Deep sea fishing within Brazil's exclusive economic zone has expanded in recent years, following an attempt by the Brazilian government to displace some of the fishing effort into more distant waters to allow coastal species to regenerate (Ibid., 1). High-value targeted species include wreckfish, monkfish, silver john dory, Argentine hake, pink cusk-eel, school shark, Argentine squid, red crab, and, importantly, shrimp (10). Besides industrial fishing, more primitive artisanal fishermen often depend on the living resources of the sea, especially in

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

the enormous bay Rio was founded on, Guanabara (da Silva Bessa et al. 2004). The impact on these two industries by an oil spill in the Santos Basin could cause a great deal of potential injury to the people and businesses that rely on tourism and fishing.

A. PRIOR BRAZILIAN OIL SPILLS AND THE CURRENT REGULATORY ENVIRONMENT

Previous spill events in Brazil have caused serious damage to the environment and livelihoods of effected citizens. As in the United States, these disasters have cultivated a regulatory and liability system to deter negligence and remedy injuries.

I. PRIOR OIL SPILLS

In 2001, Petrobras' largest offshore oil platform at the time exploded and sank into the ocean (Lieders 2001, 781-86). Leakage of flammable fluids caused a first explosion, which then released more gas into the air causing a second explosion that killed eleven platform workers, precisely the number killed by the Deepwater Horizon accident (Final Report from Inquiry Commission P-36 Accident). Though the sinking of the platform did not cause a rupture in the well, the problem that resulted in such an enormous release of oil in the case of the Deepwater Horizon, the platform was carrying about 9500 barrels of oil, 2000 of which leaked into the ocean.

This disaster, eerily similar to the BP explosion, demonstrates that the U.S. does not have a monopoly on oil spills. Two major disasters stand out—the above-mentioned explosion of Petrobras offshore oil platform P-36, and the Guanabara Bay spill in Rio de Janeiro. In January of 2000 the Guanabara Bay, mentioned above as a key feature of the city of Rio de Janeiro, was heavily impacted when a pipeline from a Petrobras refinery ruptured, dumping about 350,000 gallons of oil into the bay (Lieders 2001, 785). The spill caused serious damage to mangrove swamps and fish hatcheries, as well as causing financial harm to fishermen in the area, including poor artisanal fishing communities (Michel 2000, 91-92; Petrobras Faces Big Tab).²⁰ The mangrove swamps were particularly vulnerable, since their sheltered, muddy habitats can trap oil easily and the mangroves require a great deal of time to regenerate (Michel 2000, 91). The cleanup of

²⁰ There were about 5500 fishermen and crabbers using artisanal techniques to capture marine life in the Bay (Michel 2000, 91-92).

this spill cost Petrobras an estimated \$62 million, and the federal environmental agency, IBAMA, imposed a fine of roughly \$30 million on the company (Lieders 2001, 785).

While Petrobras, like BP, apparently opened centers to compensate the affected residents of the area, reportedly these offered at first only food and medical assistance, and the total cost to Petrobras was low (Petrobras Faces Big Tab). The company was also fined for destruction of the mangrove swamps at 1500 Brazilian reais per hectare, which is only about 900 U.S. dollars in 2011 currency. “Mario Moscatelli, a biologist and IBAMA's Rio de Janeiro state manager for the preservation of mangrove swamps, said that he considers the amount of the fine ridiculous,” considering it to be far too low (Ibid.).

The community of artisanal fishermen in Guanabara Bay was heavily impacted by the spill, as well as the tourism-dependent residents of the Ilha de Paqueta, a small, picturesque island in the bay (Michel 2001, 91-92). Similar to the BP spill fallout, many fishermen were hired as cleanup workers by Petrobras, providing an income until the worst of the spill was over. Scientists predicted that because a significant portion of the spill was light diesel fuel which evaporates easily and breaks down through the action of microbes, and because through tidal action the waters of Guanabara Bay are regularly changed out with the water of the open sea, lingering oil in the water column likely disappeared relatively quickly (Ibid., 89-90; Paranhos et al. 1997, 131-32). Holdover measures to protect the fishermen during the de facto closure of the bay fisheries were developed by a Committee on Fisheries established by the Rio de Janeiro state environmental agency, SEMADS (Michel 2001, 92). However, the lingering effects of this spill ten years later are readily apparent. Many mangrove swamps that were destroyed have not regenerated. “The mud [of the swamp] is thick, black and lifeless. And it stinks. Dead stumps—what used to be thick green mangrove swamps —protrude out from the mud as far as your eyes see” (Elizondo 2010). Also, bubbles of oil accumulated underneath the swamps and periodically release fresh batches of harmful pollution (Ibid.). A local fisherman reports that only 2000 artisanal fishermen and crabbers remain. Though these fishermen have brought suit for substantial damages against Petrobras, eleven years after the spill they still have not won any recovery, as discussed below (Petrobras, Legal Proceedings and Contingencies).

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

II. BACKGROUND LAW AND CURRENT REGULATORY ENVIRONMENT

An important institutional effect of the Guanabara Bay spill, called Brazil's "EXXON VALDEZ", was a new focus on the need for petroleum production regulation, similar to the reaction in the United States to the EXXON VALDEZ disaster and the repeated accidents of the late 1980s (Taam 2001). This reaction became part of Brazil's larger environmental protection framework, established over the last three decades and incorporated into the Brazilian constitution.

In 1988, Brazil's federal constitution was redrafted with a key environmental provision. Like other recently written national constitutions, and unlike the U.S. Constitution, it guarantees a healthy environment to the people and provides that violations of environmental law will be punished with administrative and penal sanctions (Constituciones de 2008, Sept. 28, 2008, ch. 2, § 2 (Ecuador); Constituição da República Federativa do Brasil (1988), arts. 23-24). Importantly, the power to protect the environment is a shared power granted by the constitution to the federal, state, and local governments. All governmental bodies have a concurrent legislative competence to mitigate damage to the environment. However, the federal law is supreme, providing the "general rules" which may be supplemented by the states (Pollution of Brazilian Territorial Waters).

Brazil implements this constitutional mandate through its national environmental policy, promulgated through federal Law Number 6938, the National Environmental Policy Act. The policy act is intended to protect and reclaim the damaged environment while balancing the need for socioeconomic development (Codigo Civil Ley 6938, art. 2 [Br.]). The law also lays out numerous goals, including environmental education at all levels, research, and monitoring of the environment (Ibid., art. 2, pts. I-X). Article 6 of the National Environmental Policy establishes a series of agencies to handle environmental matters. The entire national environmental system of protection created by the act at the federal, state, and local level is referred to as SISNAMA, and the institutional incarnation of SISNAMA is a high-level government council that assists in the formulation of new policy. Next, a National Environmental Council named CONAMA was established for producing uniform environmental regulations and

licensing standards. CONAMA hears final appeals of administrative sanctions. CONAMA also has jurisdiction over an important penalty under the national environmental policy act: CONAMA may strip environmental violators of any benefits conferred upon them by public officials (Art. 14). The national environmental policy law also created the precursor to IBAMA, the “executing” agency for federal environmental enforcement and administration (Art. 6). Finally, the law provides for “sectional agencies” to implement particular programs and projects under the law, and for the creation of local municipal agencies with regulatory powers in their jurisdictions.²¹ In addition to the powers of the administrative agencies to bring claims against polluters, the federal prosecutors and state prosecutors have standing to bring civil and criminal sanctions against a violator (Art. 14, § 1).

Within this regulatory framework, the Guanabara Bay spill galvanized new oil industry regulation. It quickly became apparent after the bay spill that of the eleven Petrobras refineries operating at the time, six of them were operating without a legally-mandated environmental license, including the refinery whose pipeline ruptured and caused the Guanabara Bay spill (Petrobras Faces Big Tab). Regulatory change again followed disaster, with a resulting new series of laws, regulations, and regulatory mindset (Taam 2001, 2). One commentator stated that before the Guanabara Bay spill:

[There was] no clear environmental scenario regarding the oil industry in Brazil. Some uncoordinated environmental regulations, debilitated environmental agencies, an environmentally [relaxed] industry, lack of environmental incident notification and a passive public opinion compounded the ingredients that gave room for big environmental disasters. (Ibid., 3).

Environmental licensing was required as of 1986, but existing projects combated this requirement with a legal argument that the law was not retroactive and thus existing projects could remain unlicensed (4). In the wake of the Guanabara Bay spill, the Brazilian Congress passed Law Number 9966 on April 28, 2000, which established requirements for spill prevention, spill control, and inspection of facilities in national waters (Codigo Civil Ley No. 9.966 [Br.]). Several agencies were delegated tasks under the law: the Navy, the Ministry of the Environment, and the petroleum-production

²¹ An example of this is the petroleum production licensing agency, ANP, discussed below.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

regulatory agency, ANP (Taam 2001, 6).²² Under the law, oil producers must undergo a risk assessment, and produce an emergency action plan to be reviewed by IBAMA if in offshore waters, and by a state environmental agency if in coastal and inland waters (Ibid., 6-7).²³ The producers' emergency action plan is the primary tool for oil cleanup. The public sector's involvement may be minimal depending on the spill. Law 9966 required that the Ministry of the Environment develop a National Contingency Plan which sets up federal authorities as facilitators to the spill response, but not as primary actors in the cleanup. The contingency plan is modeled to address areas of special sensitivity identified by agency mapping of the coastal zones.²⁴ A federal takeover like that which occurred in the Deepwater Horizon accident may happen if there is international involvement, unknown responsibility, negligent conduct of the oil producer, or other extreme spill conditions (Taam 2001, 7-8). Independent environmental auditing of oil production facilities is also now required by the law (Ibid., 9).

The primary environmental regulator governing oil production is ANP, established in 1997 by Brazilian federal Law Number 9478, the "Oil Act". This act ended the monopoly of the Brazilian government on oil extraction, opening the market to competition, and allowing the privatization of Petrobras with the government as majority shareholder (Mariano & La Rovere 2007, 2899). The agency produces regulations governing environmental standards of practice, auctions concessions to producers, issues environmental licenses for production and operation, inspects facilities, and enforces these rules (Taam 2001, 10). Concessions to oil producers contain contractual language applying broad liability to the producer:

²² "This law, among other objectives, internalizes the MARPOL 73/78 – International Convention for Pollution Prevention from Maritime Transportation and the OPRC /90 - International Convention for Preparedness, Response and Cooperation for Oil Pollution Situations." Ibid.

²³ This required emergency response has had some clear positive outcomes. Petrobras claims that it has set up 13 disaster response bases that would conceivably be able to muster a rapid containment effort for any oil spill, and Environmental Defense Centers are intended to complement the contingency plans in force at Petrobras company units. See *Preserving the Environment*, PETROBRAS, <http://www.petrobras.com.br/en/environment-and-society/preserving-the-environment/>.

²⁴ Article 28 of Law No. 9.966 requires that the Ministry of the Environment and the Navy map and identify areas of special ecological sensitivity. These maps are then used to establish priorities for containment and cleanup and are to be incorporated into individual, area/regional, and the national contingency plan (Ministry of Environment, Technical Specifications and Standards to Elaborate Letters of Environmental Sensitivity for Oil Spills).

- The concessionaire must adopt, at his own cost and risk, all the measures required for conservation of reservoirs and other natural resources, and for protecting the air, soil and surface of the water or subsurface, subject to Brazilian legislation and environmental regulations and, in their absence, must adopt the best practices of the oil industry.
- The concessionaire must adopt measures to ensure that operations do not lead to damages or losses that affect other economic or cultural activities in the area of concession, such as ... tourism.
-
- The concessionaire must immediately inform whenever any spill occurs or any leakage of petrol or natural gas, as well as the measures already taken to address the problem. (Mariano & La Rovere 2007, 2907).

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” (Ibid.). 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 (Wagner 2000, 21).

So, Brazilian and American law has roughly converged in regards to their environmental regulatory framework in general and their approach to oil pollution control. A vast apparatus of natural resource agencies at the federal and state level exists in both countries, with a leading light (though possessing less extensive direct regulatory power) found in the United States Council on Environmental Quality and in Brazil in the SISNAMA council.

This apparatus in Brazil is characterized by concurrent jurisdiction, with federal law supreme (Constituição da República Federativa do Brasil (1988), arts. 23-24). In parallel, the U.S. system adopted cooperative federalism, resulting in similar overlapping jurisdiction. However, Brazil appears to rely on the desire of states to regulate the environment concurrently and in supplement with the federal government. The United States’ overlapping jurisdiction comes with a penalty for state failure—the federal government seizes control of mandatory environmental programs under cooperative federalism (Fischman 2005, 183-205). Cooperative federalism thus ensures regulation, and delineates roles for both state and federal agencies. The Brazilian system may

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

produce less clearly defined roles, and allow some states to lag behind. In addition, the grant of concurrent jurisdiction to municipalities may also cause blurred lines in regulatory roles, and increase the difficulty of federal and state coordination by adding a third partner.

In terms of oil spill regulation, the 1989 EXXON VALDEZ spill catalyzed the passage of OPA, and precisely the same pattern played out in Brazil. Four months after the Guanabara Bay spill, Law 9966 was passed to regulate the industry. Both laws establish the contingency plan model and the “polluter pays” principle. The Brazilian law is less limited, however, in that caps on liability are not included. Gross negligence in the United States is important to a full recovery, but this concern does not arise under Brazilian law.

VI. BRAZILIAN PRIVATE CLAIMS

Fishermen, hotel owners, restaurant owners dependent on seafood or tourism, as well as many other plaintiffs have a private cause of action in general tort law. Like the American plaintiffs reacting to the Deepwater Horizon, this is a source of enormous liability for a polluter. Several factors, however, make bringing suit for environmental damage to oneself in Brazil more difficult than in the United States. Brazilian proceedings settle less often, often proceeding to appeal of both fact and law (Gidi 2003, 319). Also, several forms of damages, such as pain and suffering, are unavailable in civil law systems. Contingent fee arrangements are atypical, thus plaintiffs need to pay the cost of their attorney’s fees, while the Brazilian fee-shifting rule makes the losing plaintiff also responsible for the fees of the defendant (Ibid., 319-320). Discovery is very limited, and the opposing party often cannot be forced to produce evidence (Ibid.). This is one reason that involving a public prosecutor is a great advantage to the plaintiffs. The prosecutors possess subpoena power and can procure evidence from the defendant essential to the case (Codigo Civil Ley No. 7347, art. 10). This is inherently a defendant-favoring system, and one that makes the plaintiffs’ bar less active.

However, these difficulties are partially overcome since Brazil is one of two civil law nations to adopt a sophisticated class action system (Gidi 2003, 312-13). Law Number 7347, discussed above as providing a citizen suit to enforce environmental law,

was an early establishment of the class action. This law was later made trans-substantive, so that the diffuse group rights it protected could be applied to other areas of damage as well (Ibid., 327). It now operates in conjunction with the Consumer Code, Law Number 8078, which provides a procedure for class actions to vindicate individual rights rather than group rights. Together, the two form a de facto civil class action procedural code (328). Attorneys General must be given notice of the filing of a class action, and these prosecutors may intervene to protect the rights of all class members. Class actions defending individual rights have also been given a leg up on the typical loser-pays Brazilian tort rule. Class action plaintiffs are not required to front costs and fees, and are not required to pay the defendants' fees if they lose (340). Also, the *Robins Dry Dock* pure economic bar does not appear to have a counterpart in Brazilian tort law, opening room for relational economic loss even without a special statutory override as in OPA.

The class action has been used to significant effect in Brazil, despite some lingering opposition to it by older conservative judges. The Carbone Law Firm in the city of Rio de Janeiro, for instance, is currently handling two cases that represent over one thousand fishermen in each action, alleging that chemical leaks destroyed part of their livelihood (Flavio Infante Viera 2011; Gidi 2003, 333). In a major continuing action, the Fishermen's Federation of Rio de Janeiro (Brazilian acronym "FEPERJ"), filed suit against Petrobras for the severe damage caused by the 2000 Guanabara Bay spill discussed above (Petrobras 2009 Consolidated Financial Statements).²⁵ The action shows the potential strength of the environmental liability laws, and also the frustrations of lengthy Brazilian litigation. After a series of lower court decisions in 2002 and 2003, an appellate court granted aggregate damages of 1.102 billion reais (or roughly 700 million U.S. dollars) in 2007 (Petrobras Legal Proceedings and Contingencies). Then, two years later, this decision was annulled and the appellate process continued. Now, more than eleven years after the disaster, there is still no final ruling and no fishermen have received relief, besides a smaller extrajudicial payment Petrobras voluntarily provided soon after the spill (Ibid.).

²⁵ Many individual fishermen also filed smaller claims, amounting to an aggregate \$52 million reais, less than a tenth of the larger class action's claimed damages.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

Private deterrence of oil pollution through tort law in Brazil is thus fairly similar to tort within the United States, when brought as a class action. Brazil's class action law removes some of the defendant-friendly barriers in their tort system, approximating the American experience. However, the Brazilian plaintiff is still disadvantaged compared to his American counterpart because of the discovery rules, and any Brazilian plaintiff who chooses to bring an individual action instead of joining the class risks being forced to pay the defendant's fees and costs (Gidi 2003, 340).

The primary difference between the systems is the absence of a claims facility model in Brazil. Petrobras' extrajudicial assistance to the fishermen here seems to have been entirely voluntary, and minimal. In contrast, the GCCF was established with the heavy hand of government and has paid out billions of dollars. The difference in relief for injured parties is stark. Over a decade has passed, and Brazilian fishermen are still wading through the appellate process in an attempt to get some compensation for the Guanabara Bay spill, while hundreds of thousands of American claims have been paid—perhaps overpaid—within a year of the BP spill. The extrajudicial process has proved to be much faster, and Brazil might consider establishing such a process for future spills. If, as in the United States, a Brazilian tortfeasor could earn a binding waiver of legal claims in return for quickly providing some of the much-needed recovery, it may be incentivized to pay. This upfront payment might satisfy much of the need of the plaintiff while allowing the defendant to save legal fees and years of appeals in the Brazilian system.

VI. BRAZILIAN PUBLIC PENALTIES

As in the United States, there are three broad sources of penalties²⁶ for an environmental violator in Brazil: administrative actions, civil actions, and criminal actions. The basic range of penalties stemming from environmental violations are established in the national environmental policy law, Law 6938, but more specific

²⁶ Note that there is no international legal remedy for an oil platform spill; although Brazil is a party to the International Convention on Civil Liability for Oil Spill Damage (the convention rejected by the U.S. in favor of OPA), that convention applies only to ocean-going vessels, not to oil platforms (97th Session, 15-19 November 2010, IMO Legal Committee Supports Follow-up to Deepwater Horizon and Montara, International Maritime Organization Legal Committee).

sanctions and procedures have been developed for environmental violations in other statutes.

Administrative penalties for environmental violations (and criminal penalties, incidentally) are further developed by Law Number 9605, a general environmental penalties law, and by Law Number 9966, the “Oil Act” which provides for the “prevention, control and monitoring of pollution caused by discharge of oil and other noxious or dangerous substances in waters under national jurisdiction and other matters” (Codigo Civil [C.C.] Ley No. 9966, pmbl. [Br.]). The general environmental penalties law was supplemented through regulations in Decree Number 3179 of 1999. The Oil Act has not yet been supplemented through a Decree,²⁷ and although it provides extensive guidance for the overall regulation of the oil industry, this law’s enforcement and pollution principles are consonant with the general environmental penalties law, adding little further. The general environmental penalties law establishes criminal and administrative liability on the behalf of corporations or natural persons who violate environmental law.

Legal entities like corporations, its directors, managers, board of directors, auditors, agents, and representatives, may be held liable criminally when they knowingly violated or allowed violations to continue (Codigo Civil Ley No. 9605, art. 1).²⁸ Criminal sanctions are particularly powerful because criminal actions may be brought against legal entities themselves in Brazil, holding a corporation as a person criminally liable. The sanctions imposed against a corporation may include: “fines, restriction of rights (suspension/prohibition of activities; or prohibition to enter into contract with public bodies or to obtain subsidies, tax exemptions, etc.) and compulsory services to the particular community affected by a pollution incident (paying for environmental projects or the maintenance of public areas such as hospitals, schools, etc.)” (Ibid. art. 8; Carbone Law Firm—Pollution of Brazilian Waters). Importantly, Article 10 implies that a felony conviction can prevent a corporation from participating in bidding for five years, thus conceivably locking a business out of the oil exploration field for several rounds of concessions.

²⁷ To this author’s knowledge, limited by the language barrier.

²⁸ C.C. Ley No. 9605, art. I.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

Article 12 creates liability to victims of the environmental damage payable as a “cash benefit”, pegged to the Brazilian minimum wage.²⁹ The penalty for environmental crimes that involve impeding the use of public beaches and/or the release of oil is imprisonment for one to five years (C.C. Ley No. 9605, art. 54). Penalties are multiplied if certain conditions occur: “[penalties increase] one-sixth to one third, if it is apparent that there is irreversible damage to flora or the environment in general; a third to half, if it results in serious bodily injury to another; to be doubled if results in the death of others” (Ibid. art. 58).

The discretion given to judges in the criminal sanctions arena is extremely broad. First, though fines are set through adherence to the criteria of the Criminal Code, they may be increased up to three times if necessary in the eyes of the judge (Ibid. art. 18). Second, a long list of mitigating and aggravating factors allows the judge to vary the extent of the penalty (Art. 15). Mitigating factors include activities as necessary as obeying the authorities and cleaning up the pollution.

Administrative agencies may also bring claims against violators through their own administrative courts. The penalties range from daily fines to prohibition of work or activity and restriction of government-granted rights such as licenses, tax benefits, and government credit programs, and reparation of the damage (Art. 72). The value of the fine is capped at 50 million reais, or about 30 million U.S. dollars (Art. 75). However, when more than one violation is committed, the penalties may apply cumulatively. The severity of the fine is ambiguous, since it is not pegged to any particular measure of pollution. Article 41 establishes that the fine applies whenever a polluter causes “pollution of any kind at levels that result or may result in damage to human health, or causing the death of animals or significant destruction of flora.” This extremely low threshold would be met by most instances of pollution. The ultimate finding is guided by the required precursor of an agency technical report examining the extent of environmental damage (Art. 41, § 2).

Where the polluter is engaged in recidivism within three years of the first violation, the new fine is doubled if a different type of violation and tripled if the same

²⁹ The meaning of the penalty is unclear, likely due to problems with translation. The upper limit for a cash benefit is 360 times the minimum wage, but it is not clear whether this is the minimum wage for a year, or a day, or some other unit of time.

type of violation as the previous violation (Decreto No. 3179, art. 10). Destruction of native flora and fauna triggers a separate, complex series of fines, including a fine of 1500 reais per hectare of mangrove forest damaged or destroyed (*Ibid.*, art. 37).

A critical provision of the regulations implementing administrative and criminal penalties is Article 60, which provides for an agreement between the administering agency and the violator to correct the environmental damage. If the polluter complies with this plan of action, called an “adjustment term pipeline” (poorly, and perhaps incorrectly, translated) or “TAC”, the amount of the fine is reduced by 90 per cent (Art. 60; Carbone Law Firm—Pollution of Brazilian Waters).

In comparison with U.S. enforcement, the broader authority of Brazilian administrative agencies stands out. The administrative process under OPA in the U.S. may only result in small fines, while Brazilian agencies can bring charges worth tens of millions, as they did in the Guanabara Bay spill incident (Lieders 2001, 785). This greater power may, of course, be abused. The same wide discretion lies with Brazilian judges, whose power to adjust penalties based on a broad range of mitigating and aggravating factors is somewhat worrisome. One commentator has suggested that the result is an ad hoc system that produces great unpredictability (Flavio Infante Vieira 2011).

A. ENFORCEMENT OF PENALTIES

As discussed above, the enforcement of environmental penalties is handled by the administering agencies in the ordinary course of events. However, state and federal prosecutors may also examine the facts and bring civil and criminal claims on behalf of the environment and injured parties (C.C. Ley No. 6938, art. 14; C.C. Ley No. 7347). The federal prosecutors of Brazil, housed in the Federal Public Ministry, are part of an extremely well-respected institution that exists as a sort of fourth organ of government. The prosecutors are watchdogs, empowered to sue the state to force the proper implementation of law. Prosecutors may bring civil or criminal actions for environmental harms causing damage to the environment, the consumer, the urban order, the economic order, or the public economy (C.C. Ley No. 7347, art. 1). Such actions may seek money damages or an injunction against the polluting action and to require cleanup. Article 13

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

provides that when a cash award is granted, that money is placed into a fund regulated by a federal council, to be distributed for “the restoration of damaged resources.”

The most powerful part of this law, however, is that it also allows private citizens incorporated into associations, as well as municipalities, to bring suit on environmental grounds. The claims may be filed by a “local authority, public corporation, foundation, mixed capital company or association” that has as part of its mission the protection of the environment and has existed for one year (this requirement is waiveable by the judge when there is “manifest social interest” in doing so) (Ibid., art. 5).

Despite the powerful language of the laws laid out here and above, enforcement in Brazil can be very difficult. First, the broad powers of the much-lauded federal prosecutors are terribly limited by their funding—one federal public prosecutor speaking in Rio de Janeiro explained that her office, with responsibility for the city of Rio de Janeiro and several surrounding cities encompassing over 10 million people, was staffed with five attorneys (Porto 2010). Second, the power for nonprofits to bring citizen suits means little if the nonprofits lack the institutional capacity to argue a case, produce evidence, and cover attorneys’ fees and costs. Brazil as an upper middle-income nation certainly has active nonprofit associations, but legal battles are notoriously expensive and there are too many possible environmental legal battles to prosecute. Third, scholars and a former Chief Justice of the Federal Supreme Court of Brazil have indicated that a conservative legal culture and judiciary throws up obstacles to effective enforcement: “the greatest challenge to enforcement of environmental laws in Brazil comes from the cultural values of the general population and the judiciary” (Kellman 2002, 159-60). Fourth, one scholar has pointed out that the education of Brazilian lawyers is a general one, with students lacking the option to focus on environmental law (Ibid., 163). Once out of school, Brazilian lawyers are often drawn into legal careers on the defense side.

Ultimately, enforcement in Brazil seems much more challenging than in the United States. Citizen suits are an excellent procedural avenue, but are meaningless without the resources to fund them, and handicapped by limited Brazilian discovery rules. The participation of a public prosecutor lifts this evidentiary problem, however, and provides a powerful weapon unavailable in the U.S. system. This “fourth organ” of government in Brazil is an intriguing source of enforcement. The closest U.S.

counterpart would be one of the various Inspectors General, but the Brazilian public prosecutors possess much more power and greater independence, along with the ability and mission to pursue actions into the civil courts. In contrast, American inspectors tend to operate internally only (Light 1993). However, despite the potential utility of the public prosecutors, actually getting access to one of the few public prosecutors may be practically impossible.

B. QUANTIFICATION OF NATURAL RESOURCE DAMAGES

As seen above, the power to enforce environmental laws includes two main penalties: fines intended as punishment, and the cost of rehabilitating the natural environment. This second category of penalties raises the thorny issue of natural resource damages—how to value the loss or damage to natural resources is a critical question with no clear answer. Precisely the same problems the United States faces with valuation, collection of data, and the necessary element of discretion in valuing resources that exist with no natural economic market are confronted by Brazil.³⁰ The United States struggles through an administrative process of natural resource damages that allows states and the federal government to seek compensation. Brazil operates in the same way, but a strong framework for answering the natural resource damages question does not appear to exist.

The environmental laws and regulations provide for these damages, but do not promulgate any particular methodology, and no nationally accepted version exists (Carbone Law Firm—Quantification of Natural Resource Damages). CETESB, the environmental agency of highly-developed Sao Paulo state, produced a mathematical formula to attempt to corral the problem of valuation. “Given the good technical reputation of this body and also the leading role of São Paulo in the Brazilian economy (it was also home to the largest Brazilian port, Santos), this formula rapidly spread from its cradle in the administrative sphere and started being used in court cases” (Ibid.). However, the formula was heavily criticized by defense lawyers, and it was shown to

³⁰ A good discussion of the difficulty in analysis of natural resource damages is present in a Brazilian thesis prepared on this topic (Aline Guimarães Monteiro, *Assessment Methodology for Environmental Costs Caused by Oil Spills: The Case Study of Complex REDUC DTSE* (Dec. 2003)).

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

sometimes produce absurd results. For instance, it reportedly produced a significant fine even when a pollutant value of zero was entered. CETESB appears to have abandoned this formula, though it may still hold influence elsewhere in the country. Judges have been known to arbitrate the total figure by relying on their discretion and essentially producing an ad hoc solution (Flavio Infante Vieira Feb. 2011).

To remedy some of this unpredictability, Brazil might develop an agency specializing in natural resource damages, as the United States has done with NOAA's Damage Assessment, Remediation, and Restoration Program. Though natural resources damage assessment seems inherently full of discretion and uncertain valuation, this should be taken as an additional incentive to develop a standardized, specialist agency to deal with the problem in as equitable a manner as possible.

VIII. CONCLUSIONS

In the last two decades, legal mechanisms for imputing liability for oil pollution and regulating the oil industry in Brazil have developed and appear to have roughly converged with the American actions for liability. In both nations, federal law imposes a substantial regulatory system on the industry that allows for safety measures and adaptation to the changing industry. State and federal governments have strong punitive and deterrent powers through bringing actions under environmental laws for civil, administrative, and criminal sanctions. Brazil goes a step further than the U.S. by granting significant enforcement and regulatory power to municipalities as well. On the private side, torts for relational economic loss are available in both nations, and the streamlining effect of class actions may take some of the administrative burden of litigation from individual plaintiffs and the courts.

Comparing the fallout from the Guanabara Bay spill with the BP spill, however, the strong environmental laws of Brazil did not translate into adequate public and private remedies. Petrobras was only fined roughly \$30 million dollars in administrative penalties and paid roughly \$62 million in cleanup costs. The fine of only \$900 per hectare of destroyed mangrove swamp raises a red flag. It seems the agencies let Petrobras off light. One serious concern here is that, in order to fairly and effectively administer a complex environmental regulatory regime, an extremely strong government

agency is required. The need for greater funding and oversight in Brazilian environmental agencies has been explored in great depth by Leslie McAlister (McAlister 2008).

Most surprisingly, Petrobras has not paid any private tort damages at all, though many thousands of Brazilians were impacted by the spill. The absence of a Brazilian claims facility model parallel to the GCCF resulted in a very different experience for Brazilians damaged by the spill. Unlike U.S. citizens, they are still waiting for their recovery, and the transition into other lines of work was not softened by a tort recovery. Brazil should consider a claims facility framework, even if incentivized by a lower overall payout for the tortfeasor, since an unknown recovery that may or may not come, more than a decade after the injury, is an unjust result for the fishermen of Guanabara Bay.

Finally, the Brazilian method of natural resource damage assessment appears to be currently amorphous. A certain level of unpredictability is an inherent aspect of valuing damaged natural resources, but it is critical to attempt to corral the problem as much as possible. The American system also leaves much to discretion, but at least lodges the damages assessment with a specialist class of civil servants.

This research shows that U.S. and Brazilian oil spill liability laws have evolved in parallel patterns by responding to catastrophic spill events. Rather than waiting for domestic tragedy to strike, it would be much better for Brazil to examine the U.S. response and consider adopting the good elements and avoiding U.S. mistakes. For instance, oversight weaknesses in the U.S. version of the ANP, the former Minerals Management Service, were exposed only after the Deepwater Horizon spill. That failure of oversight is being addressed now through a clever administrative strategy splitting the agency into a division with an enforcement role and a separate division with licensing and royalty-gathering duties (BOEMRE Reorganization and Regulatory Reform). The United States has also produced a group of new, tighter industry regulations that countries like Brazil might consider. If other oil-producing nations can proactively protect their environment and populations by learning from the U.S. investigation and response to Deepwater Horizon's horrific failure, this would serve as an important silver lining to that environmental storm.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

REFERENCES

- Joel Achenbach & David A. Fahrenthold, "Oil Spill Dumped 4.9 Million Barrels into Gulf of Mexico, Latest Measure Shows," *Washington Post*, Aug. 3, 2010.
- Acselrad, Henri & Cecilia C. A. Mello. 2000. Social conflict and environmental risk: The case of a oil spill in Guanabara Bay. *Political Ecology: Naturaleza, Sociedad y Utopia*.
- Alexander, Kristina. 2010. Natural Resource Damage Assessment Under the Oil Pollution Act. Congressional Research Service, Report 7-5700.
- Allen, Craig. 2011. Proving Natural Resource Damage Under OPA 90: Out with the Rebuttable Presumption, in with APA-Style Judicial Review? *Tul. L. Rev.*, vol. 85.
- Shashank Bengali, "Gulf Spill Reminds America: The Era of 'Easy Oil' is Over," *Mcclatchydc.com*, May 7, 2010.
- Bingham, Gail et al. 1995. Issues in Ecosystem Valuation: Improving Information for Decision Making. *Ecological Economics* 14:73.
- British Petroleum. Deepwater Horizon Accident Investigation Report, Sept. 8, 2010. http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/Deepwater_Horizon_Accident_Investigation_Report.pdf.
- BP.com. Making it Right. <http://www.bp.com/extendedsectiongenericarticle.do?categoryId=9034427&contentId=7063885>.
- BP.com. Government Claims. <http://www.bp.com/sectiongenericarticle.do?categoryId=9034726&contentId=7064402>.
- BP.com. Claims Information. <http://www.bp.com/sectiongenericarticle.do?categoryId=9034722&contentId=7064398>.

- BP.com. Natural Resource Damage Assessment.
<http://www.bp.com/sectiongenericarticle.do?categoryId=9034788&contentId=7061848>
- BP.com. Gulf of Mexico Oil Spill Escrow Trust. Press Release Aug. 9, 2010.
<http://www.bp.com/genericarticle.do?categoryId=9034722&contentId=7064952>.
- Bureau of Ocean Energy Management, Regulation & Enforcement. Reorganization and Regulatory Reform.
<http://www.boemre.gov/ReorganizationRegulatoryReform.htm>.
- Camilli, Richard et al. 2010. Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon. *Science* 330:201.
- Carbone Law Firm. Pollution of Brazilian Territorial Waters.
http://www.carbone.com.br/home_noti.asp.
- Carbone Law Firm. Quantification of Natural Resource Damages.
http://www.carbone.com.br/home_noti.asp.
- Codigo Civil, Ley 6938 [Br.].
- C.C. Ley No. 7347 [Br.].
- C.C. Ley No. 9605 [Br.].
- Constituciones de 2008, Sept. 28, 2008, ch. 2, § 2 (Ecuador).
- Constituição da República Federativa do Brasil (1988), arts. 23-24
- Miles Corwin, "The Oil Spill Heard 'Round the Country," *L.A. Times*, Jan. 28, 1989, at I-23.
- Melanie Driscoll, "How Many Birds Died in the BP Oil Spill?," [Audobonmagazine.org](http://magblog.audubon.org/how-many-birds-died-bp-oil-spill),
<http://magblog.audubon.org/how-many-birds-died-bp-oil-spill>.
- Gabriel Elizondo, "Effects of a Brazilian Oil Spill 10 Year On," *Al Jazeera*, July 7, 2010, <http://blogs.aljazeera.net/americas/2010/07/07/effects-brazilian-oil-spill-10-years>.
- Exxon Valdez Oil Spill Trustee Council. Pacific Herring.
http://www.evostc.state.ak.us/recovery/status_herring.cfm.
- Figueiredo, Paulo et al. 2010. Innovative Technological Capability in Firms of the Tourism Sector: a Study of the Hotels in the City of Rio

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

de Janeiro During the 1990-2008 Period. *Revista de Administracao Publica—Rio de Janeiro* 44(5):1147.

Fire and Blast Investigation Group. Final Report from Inquiry Commission P-36 Accident. <http://www.fabig.com/Accidents/P36.htm>.

Fischman, Robert L. 2005. Cooperative Federalism and Natural Resources Law. *N.Y.U. Envtl. L.J.* 14:179.

Force, Robert, Martin Davies, & Joshua Force. 2011. Deepwater Horizon: Removal Costs, Civil Damages, Crimes, Civil Penalties and State Remedies in Oil Spill Cases. *Tul. L. Rev.*, vol. 85.

Gidi, Antonio. 2003. Class Actions in Brazil—A Model for Civil Law Countries. *Am. J. Comp. L.* 51:311, 319.

Russel Gold et al., “Leaking Oil Well Lacked Safeguard Device,” *Wall Street J.*, Apr. 28, 2010, <http://online.wsj.com/article/SB10001424052748704423504575212031417936798.html>.

Gulf Coast Claims Facility. Protocol for Interim and Final Claims. http://www.gulfcoastclaimsfacility.com/proto_4.

Gulf Coast Claims Facility. Summary of Options for Submission of Final and Interim Payment Claims. http://www.gulfcoastclaimsfacility.com/summary_options.pdf.

Oliver Houck, “Who Will Pay to Fix Louisiana?,” *The Nation*, July 12, 2010.

International Maritime Organization Legal Committee. 97th Session, 15-19 November 2010, IMO Legal Committee Supports Follow-up to Deepwater Horizon and Montara.

<http://www.imo.org/MediaCentre/MeetingSummaries/Legal/Pages/LEG-97th-Session.aspx>.

Toni Johnson, *Backgrounder: U.S. Deepwater Drilling's Future*, Council on Foreign Relations, Jan. 11, 2011.

Kellman, Janelle. 2002. The Brazilian Legal Tradition and Environmental Protection: Friend or Foe. *Hastings Int'l & Comp. L. Rev.* 25:145.

Knickerbocker Ice Co. v. Stewart, 253 U.S. 149 (1920).

Lieders, Adriana. 2001. A New Chapter in Brazil's Oil Industry: Opening the Market While Protecting the Environment. *Geo. Int'l Envtl. L. Rev.* 13:781.

- Light, Paul. 1993. *Monitoring Government: Inspectors General and the Search for Accountability*. Brookings Institution Press.
- Mariano, Jacqueline & Emilio La Rovere. 2007. Oil and Gas Exploration and Production Activities in Brazil: The Consideration of Environmental Issues in the Bidding Rounds Promoted by the National Petroleum Agency. *Energy Policy* 35:2899.
- McAlister, Leslie K. 2008. *Making Law Matter: Environmental Protection and Legal Institutions in Brazil*. Stanford Law Books.
- Michel, Jacqueline. 2000. Special Oil Spill Report: Assessment and Recommendations for The Oil Spill Cleanup of Guanabara Bay, Brazil. *Spill Sci. & Tech. Bull.* 6(1):89.
- Brazilian Ministry of Environment. 2011. Technical Specifications and Standards to Elaborate Letters of Environmental Sensitivity for Oil Spills.
- Monteiro, Aline Guimarães. Assessment Methodology for Environmental Costs Caused by Oil Spills: The Case Study of Complex REDUC DTSE (Dec. 2003) (unpublished dissertation) (on file with author).
- Oil Pollution Act of 1990, 33 U.S.C. § 2701, et seq.
- Neimar de Oliveira, “Petrobras: Oil Production in the Tupi Field Could Reach 70,000 / Day,” *Jornal do Brasil*, Oct. 27, 2010.
- Paranhos, Rodolfo et al. 1997. Diel Variability of Water Quality in a Tropical Polluted Bay. *Envtl. Monitoring & Assessment* 50:131.
- Perez, J.A.A. 2003. Deep-sea Fishery off Southern Brazil: Recent Trends of the Brazilian Fishing Industry. *J. Northw. Atl. Fish. Sci.* 31:1.
- Perry, Ronen. 2011. The Deepwater Horizon Oil Spill and the Limits of Civil Liability. *Wash. L. Rev.* 86:1.
- Gisele Porto, Environmental Attorney General, Federal Prosecutor’s Office of Rio de Janeiro, Address to Study Space V Conference in Rio de Janeiro (July 16, 2010). “Petrobras Faces Big Tab, Shake-Up After the Spill,” *Oil & Gas J.*, Feb. 14, 2000.
- Petrobras.com. Legal Proceedings and Contingencies. <http://www.petrobras.com.br/rs2009/en/analise-financeira-e-demonstracoes-contabeis/notas-explicativas/processos-judiciais-e-contingencias/>.

OIL SPILL LIABILITY IN THE UNITED STATES AND BRAZIL: DEEPWATER HORIZON'S WARNING FOR THE TUPI OIL FIELDS

Petrobras.com. About Us. <http://www.petrobras.com.br/pt/quem-somos/perfil/>.

Petrobras.com. Valuing Culture. <http://www.petrobras.com.br/pt/meio-ambiente-e-sociedade/valorizando-a-cultura/>

Petrobras.com. Map of Oil Fields in Santos and Campos Basins. <http://oilshalegas.com/braziltupioil.html>

Petrobras.com. Petrobras 2009 Consolidated Financial Statements and Other Financial Information, Legal Proceedings. http://google.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHtmlSection1?SectionID=6623911-527239-548798&SessionID=fbTCWjM7t3MKEG7.

Campbell Robertson & Clifford Krauss, "Gulf Spill Is the Largest of Its Kind, Scientists Say," *N.Y. Times*, Aug. 2, 2010.

Robins Dry Dock & Repair Co. v. Flint, 275 U.S. 303 (1927).

Dionne Searcey, "Oil-Spill Lawyers Urge Clients to Settle," *Wall St. J.*, Jan. 28, 2011.

da Silva Bessa, Eliane, et al. 2004. Integrating Economic Development and the Environment: Artisan Fishing Production in Guanabara Bay, Rio de Janeiro. *Envtl. Mgmt.* 34:332.

Sump, David H. 2011. The Oil Pollution Act of 1990: A Glance in the Rearview Mirror. 85 *Tul. L. Rev.*, vol. 85.

Mauricio Taam. 2001. The Guanabara Bay Oil Spill Incident—The Brazilian Exxon Valdez: An Institutional Perspective. www.epa.gov/oem/docs/oil/fss/fss02/taampaper.pdf.

Ultramares Corp. v. Touche, 174 N.E. 441, 444 (N.Y. 1931).

Flavio Infante Vieira, Senior Attorney, Carbone Law Firm, Rio de Janeiro, e-mail message to author, Feb. 21, 2011.

Flavio Infante Vieira, Senior Attorney, Carbone Law Firm, Rio de Janeiro, e-mail message to author, Mar. 10, 2011.

Wagner, Jay. 2000. Environmental Impact. *Petroleum Economist*, Feb. 15, 2000. "What Lies Beneath: Is There Really an Ocean of Oil off Brazil?," *The Economist*, Apr. 16, 2008.