**Weighing the Benefits & Costs of Offshore Drilling**

**Offshore drilling remains a risk well worth taking, even in the wake of the oil spill disaster.**

[Ronald Bailey](http://reason.com/people/ronald-bailey/all) | May 4, 2010

Two weeks ago BP’s Deepwater Horizon oil drilling rig in the Gulf of Mexico exploded, killing 11 workers. The exploratory well began gushing oil at an estimated rate of 5,000 barrels per day when the blowout prevention system failed. The growing oil slick menaces the marshes and beaches of Louisiana, Mississippi, Alabama, and Florida. Should the slick come ashore, previous research suggests the [deleterious effects](http://www.sciencemag.org/cgi/content/short/323/5921/1558) on fisheries and wildlife would be substantial and long-lasting.

As someone who has enjoyed the sugar white sands of Alabama’s beaches, it is a terrible shame that they are at risk of being despoiled by oily muck. But as someone who also enjoys the conveniences of modern civilization including the on-demand mobility offered by airplanes and automobiles that enable me to visit those beaches, I understand trade-offs.

Opponents of offshore drilling have jumped on the spill as evidence that offshore drilling is inherently dangerous, and not worth the risk. They see the blowout as evidence that the recently lifted moratorium on offshore drilling in parts of the outer continental shelf should be reinstated. Miyoko Sakashita of the Center for Biological Diversity [decried](http://www.commondreams.org/newswire/2010/05/01) “the absurdity of the claims by the oil industry and politicians beholden to that industry that offshore oil and gas development is safe." As a consequence, the center is urging the Obama administration “to reinstitute a moratorium on new offshore oil leasing, exploration, and development on all our coasts.” The Natural Resources Defense Council is also calling for a “[time-out](http://switchboard.nrdc.org/blogs/schasis/nrdc_calls_for_a_timeout_on_ne.html)” on any further offshore oil drilling until an independent investigation of the BP spill is completed. On April 30, the Obama administration heeded the call for a time-out and [halted](http://abcnews.go.com/GMA/Politics/gulf-mexico-oil-spill-jeopardize-obamas-offshore-drilling/story?id=10512504) plans to expand offshore drilling until an investigation into the causes of the BP blowout are complete.

But in deciding whether or not to continue offshore exploration for oil and gas, a calm quantitative approach makes more sense than a rush to ban drilling after seeing some pictures of oily birds. It would be useful to figure out if the costs, economic and ecological, outweigh the benefits of producing offshore oil and gas. Luckily, a recent study by Georgetown University economist Robert Hahn and Milken Institute economist Peter Passell offers some insight to this question. Published in the December 2009 issue of *Energy Economics*, their study “[The economics of allowing more U.S. oil drilling](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V7G-4Y0T941-1&_user=10&_coverDate=05%2F31%2F2010&_rdoc=1&_fmt=high&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1322083511&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_use),” finds that the benefits of producing offshore oil greatly outweigh the costs.

In their analysis, Hahn and Passell look at three types of benefits: producer revenues, lower prices to consumers, and less fluctuation in oil prices. These benefits are considered in a scenario in which oil is priced at $50 per barrel, and in another in which it goes for $100 per barrel. (The current price is around [$85 per barrel](http://money.cnn.com/2010/05/04/markets/oil/).) At $50 per barrel they estimate that 10 billion barrels of oil would be recoverable from the off-limits outer continental shelf, and at $100 this rises to 11.5 billion barrels.

On the cost side of the ledger they calculate that it would cost $17 per barrel to produce offshore oil at $50 per barrel and $20 per barrel at $100 per barrel. They incorporate a Minerals Management Service estimate of [$700 million as the cost of the environmental damage [PDF]](http://www.mms.gov/5-Year/PDFs/MMSProposedFinalProgram2007-2012.pdf) caused by producing 10 billion barrels of oil offshore. They include an estimate of damage caused by greenhouse gases produced by burning the oil as fuel, and the direct costs of local air pollution, and traffic congestion and accidents. So what did they find?

At $50 per barrel, the benefits of offshore oil production in the formerly off limits areas of the outer continental shelf would garner $492 billion in revenues, $42 billion in lower oil prices, and reduce the cost of oil price disruptions by $42 billion, yielding total benefits of $578 billion. The direct drilling costs would come to $166 billion, environmental costs $1 billion, greenhouse gas damages $1 billion, local air pollution $28 billion, traffic congestion $28 billion, and traffic accidents $32 billion, for a total cost amounting to $255 billion. So at $50 per barrel the benefits of producing 10 billion barrels of offshore oil would be $323 billion greater than its costs.

At $100 per barrel, outer continental shelf oil production of 11.5 billion barrels of oil would reap $1.15 trillion in revenues, lower oil prices by $99 billion, and reduce the costs price disruptions by $51 billion, resulting in total benefits of $1.3 trillion. Drilling costs would be $238 billion, environmental costs and greenhouse gas damages would total $2 billion, the costs of local air pollution, traffic congestion, and traffic accidents would be $22 billion, $33 billion, and $38 billion respectively. So the total costs of producing 11.5 billion barrels of offshore oil would be $332 billion. Hahn and Passell calculate that at $100 per barrel, the net benefits of producing offshore oil would come to $967 billion, or a trillion dollars. They note that even if the total costs were doubled in both scenarios, “the qualitative conclusion that resource development passes any plausible benefit–cost test still holds.”

But perhaps the environmental costs used by Hahn and Passell are too low. Could they be wrong about the cost of greenhouse emissions? Hahn and Passell note that even at the highest social cost of carbon at $321 per ton suggested by British economist Nicholas Stern, the total benefits of producing offshore oil are still positive. In that case, the net benefits drop from $325 billion to $120 billion at $50 per barrel, and from $975 billion to $725 billion at $100 per barrel.

As for other environmental impacts, analysts at the Environmental Protection Agency (EPA) have devised a [Basic Oil Spill Cost Estimation Model](http://www.epa.gov/emergencies/docs/oil/fss/fss04/etkin2_04.pdf) to try to figure out the costs of various types of spills. For example, the EPA model projects that the socioeconomic costs of spills over a million gallons is about $60 per gallon and the environmental costs are $30 per gallon. So if the BP blowout continues as-is for a total of 50 days, it will spew 10 million gallons into the Gulf, resulting in $900 million in costs. Applying the model’s highest socioeconomic sensitivity adjustment factor of 2 raises those costs to $1.2 billion, and applying the EPA formula including the highest vulnerability (wildlife) and habitat sensitivity factor (wetlands) raises those costs to nearly $1 billion, for a total of $2.2 billion.

This figure is basically the same as the total clean up costs of the biggest oil spill in U.S. history: In 1989, the Exxon Valdez oil tanker leaked 250,000 barrels of crude oil (about 10 million gallons) after being run aground on a reef in Alaska’s Prince William Sound. The BP blowout will eclipse the Exxon Valdez spill if it continues flowing for another 33 days. The ultimate clean up costs for the Exxon Valdez accident amounted to [about $2.2 billion](http://www.eoearth.org/article/exxon_valdez_oil_spill), with additional legal costs and damage payments of [$2.3 billion](http://www.nytimes.com/gwire/2010/05/03/03greenwire-bps-oil-spill-bill-could-dwarf-exxons-ivaldezi-91298.html). Some analysts are estimating that the costs for clean up and payment for economic losses from the BP spill might reach as high as [$12.5 billion](http://www.businessweek.com/news/2010-04-30/u-s-gulf-states-mobilize-for-valdez-like-oil-spill-update4-.html). As it should be, BP’s corporate leadership has declared that the company will be responsible for paying for the costs of the spill.

In his book, *Normal Accidents: Living with High Risk Technologies* (1984), Yale University sociologist Charles Perrow [noted](http://books.google.com/books?id=VC5hYoMw4N0C&pg=PA4&lpg=PA4&dq=perrow+normal+accidents+the+problem+is+just+something+that+never+occurred+to+the+designers&source=bl&ots=MBfijP56jf&sig=YGoAAzromXWsLfPfC0W0Y_OGU8Q&hl=en&ei=oDHgS6fxFI7C8wS13p3MCQ&sa=X&oi=book) that when a technology fails, it often does so because “the problem is just something that never occurred to the designers.” Assuming no malfeasance, whatever went wrong with the Deepwater Horizon drill rig will likely uncover just such a problem and future designers will fix it. Progress is a trial and error process, and increasing safety results from learning how to make better trade-offs over time between risks. Despite this current disaster, offshore oil drilling remains a risk well worth taking.

[*Ronald Bailey*](https://mail.google.com/mail/?ui=1&view=cm&fs=1&tf=1&to=rbailey@reason.com) *is* Reason*'s science correspondent. His book* [Liberation Biology: The Scientific and Moral Case for the Biotech Revolution](http://www.amazon.com/exec/obidos/ASIN/1591022274/reasonmagazineA/) *is available from Prometheus* *Books.*

# Cost-benefit analysis can help environmentalists battle offshore drilling

By [Grist staff](http://grist.org/author/grist/), [Richard L. Revesz](http://grist.org/author/richard-l-revesz/) and [Michael A. Livermore](http://grist.org/author/michael-a-livermore/)

In the last few weeks, two major barriers to renewed offshore oil drilling have fallen. In a [decision on the Exxon-Valdez oil spill case](http://astore.amazon.com/gristmagazine/detail/0195368576), the Roberts Court severely limited liability for big spills. Now, President Bush has [abrogated the executive order](http://gristmill.grist.org/story/article/tanks-but-no-tanks) stopping offshore oil drilling. The only thing standing between new oilrigs and the ocean floor is Congress. In a time of fiscal crisis, environmentalists will have to make a strong case against the economic wisdom of offshore oil drilling to ensure that Congress does not pay dearly for its continued opposition.

**The benefit of punitive damages**

Congress and the president decided decades ago to ban new offshore oil drilling. However, even without the federal ban, the threat of big jury awards would have chilled an oil rush in the ocean. Drilling offshore is dangerous, and there is an ever-present risk of catastrophic environmental damage. If juries were free to impose big penalties for environmental destruction, the risk of catastrophe would weigh heavily on the ledger.

With the Supreme Court limiting punitive damages to a 1:1 ratio of “actual” damages, juries’ hands are tied, even in the face of grossly irresponsible conduct like we saw on the Exxon-Valdez. This limit on liability will be a warm blanket for the next generation of offshore oil explorers.

**Bad idea drilling**

Given the massive risks of offshore oil drilling it is hard to believe that Bush or McCain — who has also supported new drilling — could produce a credible cost-benefit analysis showing that it makes economic sense. The value of the oil would have to offset threats to natural resources and the large value that Americans place on unspoiled wilderness and unharmed ecosystems.

Even aside from the risk of drilling, bringing more oil into the economy will produce [little long-term benefit](http://gristmill.grist.org/story/article/the-cruel-offshore-drilling-hoax-part-1). While it might reduce the price of gas in the short run, it will also reduce incentives to develop more fuel efficient cars and alternative energy sources. Supply-side strategies like offshore oil drilling are ultimately doomed to fail. The result will be more pollution — threatening public health and contributing to global warming — with little tangible benefit to show for it.

**Suspenders — no belt**

With the ban in place, the threat of big liability was a belt-and-suspenders safeguard. But now that the Court has taken away the belt, and the president has lifted the executive ban, all we have is Congress — already panicking over the price of gas. This is not a comforting thought.

As long as there is a perception that environmental protection is bad for the economy, support for strong regulation will always be tepid. The fact is, that economic analysis often justifies strict environmental and public health regulation. Often, it is only when the economics are manipulated or ignored that a laissez-faire approach to the environment present a tempting mirage. But if Congress continues to labor under the false idea that good economics supports less regulation, the suspenders are in danger of coming off. Even if Congress stays strong, if the public believes that environmentalists’ concerns are trumping economic values, there will be a price paid in November.

**Cost-benefit analysis can help**

Without the threat of big jury awards looming over offshore oil rigs, it is doubly important for environmentalists to show Congress and the public that drilling is not only unsound environmental policy, but is also bad economics.

Historically, however, some environmental groups have been hesitant to embrace cost-benefit analysis. That hesitation has historical, not conceptual, roots. Cost-benefit analysis came on the scene during the tenure of President Ronald Reagan, and was used as a smokescreen for his antiregulatory agenda. Many environmental groups developed an institutional distaste for cost-benefit analysis after seeing it continually used and abused to roll back hard fought gains on environmental issues.

In researching our book, Retaking Rationality, we found that over thirty years, antiregulatory interests have left their mark on cost-benefit analysis, creating several biases in how economic costs and benefits of regulation are measured. In order for cost-benefit analysis to realize its full potential, progressive groups will have to fight these biases.

**Supporting the suspenders**

Without the threat of harsh liability, Congress is the only backstop on offshore oil drilling, especially if Senator McCain wins the election in November. Cost-benefit analysis may be just the tool required to give Congress the backbone it needs to stand up to the special interests urging more drilling as a band-aid for this country’s oil addiction.

To build this backbone, environmentalists will have to drop their old concerns about economic analysis, and give cost-benefit analysis the benefit of the doubt. The tool is there for them to use; they need only pick it up.

This is a guess essay from Richard L. Revesz, dean of New York University School of Law and co-author, with Michael A. Livermore, of [Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health](http://astore.amazon.com/gristmagazine/detail/0195368576), published by Oxford University Press.

Michael A. Livermore is the executive director of the [Institute for Policy Integrity](http://policyintegrity.org) at New York University School of Law. He is the author, with Richard L. Revesz, of [Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environmental and Our Health](http://policyintegrity.org/publications/detail/retaking-rationality/).

**What is Offshore Oil Drilling?**

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Offshore oil drilling is an oil extraction technique which allows oil companies to access deposits of oil buried under the ocean floor. Most typically, offshore oil drilling sites are situated over the continental shelf, although advancements in drilling technology have made platforms even further out to sea economically and physically feasible. Many people are opposed to offshore oil drilling, due to concerns about its impact on the environment, and the unaesthetic appearance of oil rigs off the coastline.

Many sections of the Earth's oceans have massive deposits of oil buried deep beneath their surface, and these oil deposits are extremely appealing to many oil companies. The first offshore oil drilling operation was established in 1938 in the Gulf of Mexico, and other producers quickly started to follow suit in other regions of the world. By the 1970s, many communities had enacted specific bans against offshore drilling, and the issue became a bone of contention in some areas.

There are several ways in which an offshore oil drilling operation can be run, and the type of oil rig used is usually dependent on the depth at the location, the type of oil, and prevailing conditions. Classically, fixed rigs are built into place on the ocean floor, with multiple well heads and adjustable parts to allow engineers to extract oil from the surrounding area. Floating rigs are also used, in some regions, and in some areas offshore oil drilling is conducted on ships for even more mobility.

Several accidents have caused rigs to explode, capsize, or become badly damaged, with accompanying loss of life, and many crews today are housed offsite, so that if something happens to the rig, the loss of life will be less severe. Workers on oil rigs still have to contend with severe weather conditions, problems with the rig, and geological conditions which could become dangerous, and they are typically highly paid in recognition of the risks of the industry.

The environmental effects of offshore drilling are primarily caused by pollution related to poorly maintained and operated rigs. Oil spills around rigs are common, especially at the seafloor, where drilling may stimulate seepage, and heavy metal pollution can also occur. Some people also feel that offshore oil drilling disrupts and confuses marine life, although ironically rigs can also provide shelter to seabirds and fish.