

Crude Accounting for the Gulf of Mexico Inc.

Daniel Blake Rubenstein

August 2010

Crude Accounting for the Gulf of Mexico Inc.

Daniel Blake Rubenstein

August 2010

© 2010 International Institute for Sustainable Development (IISD)

Published by the International Institute for Sustainable Development

IISD contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, measurement and assessment, and natural resources management, and the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections among researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and Environment Canada, and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

International Institute for Sustainable Development
161 Portage Avenue East, 6th Floor
Winnipeg, Manitoba
Canada R3B 0Y4
Tel: +1 (204) 958-7700
Fax: +1 (204) 958-7710
Email: info@iisd.ca
Website: www.iisd.org

Key Concepts

Ecological economists can develop credible estimates of the dollar value of the ecosystem services provided to regional and the global environment.

The problem is that these values are developed but are not factored into business or government investment and regulatory decisions because of limited research on how to incorporate the information into the traditional financial statements and the accountability reporting of government regulators.

Rubenstein, a qualified accountant and geographer, has developed a model for accounting for nature that, if implemented, could vastly improve the advance warning to shareholders of the potential ecological risks of, for example, an oil spill. The model could also lead to changes in corporate investment decisions and an increase the pressure on regulators by Congress to preserve, rather than pursue a short-term approach to the exploitation of natural resources.

The essence of the accounting model proposed is that government regulators and stewards of vast ecosystems such as the Gulf of Mexico should act like prudent landlords who require a damage deposit to cover the last month's rent. In the case of a vast ecosystem such as the Gulf, where the costs of an ecological catastrophe can approach over US\$20 billion, the relevant costs are the costs of paying for an insurance policy to cover the damage deposit. These insurance costs would then be apportioned to the main users of the ecosystem and booked in the traditional financial statements.

Author Summary

There is an urgent need to develop an approach to accounting for nature that will enable nature's value to compete on a level playing field with the traditional financial measures of business performance. Ecological economists have developed ways to place a dollar value on the ecosystem services of large-scale aquatic, terrestrial and oceanic ecosystems. The problem is that a generally accepted method of using this data in traditional financial statements and annual reports has not yet been developed. The author has developed a disclosure regime for ecological risks, such as the protracted rupture of a deep-water oil drill in a sensitive estuarine, coastal and oceanic ecosystem. This information on ecological risks could be required by securities commissions such as the Securities and Exchange Commission. In addition to this improved disclosure, the author proposes an approach to developing "below the line" charges to reported income to reflect the consumption or risk of consumption of an ecosystem upon which a reporting entity is financially dependent. A

company is financially dependent on an ecosystem when it will not longer stay in business if denied access to a given ecosystem.

The need for consistent, decisive environmental accounting principles has been argued in professional circles for some time, but is perhaps never better illustrated than right now in aftermath of the Deepwater Horizon ecological catastrophe. This sad incident also reinforces the need to better account for the limits of nature's carrying capacity. The underlying issue is the why and how of putting a value on nature that will enable nature to effectively compete with the financial metrics of return on investment (ROI) in the global capital markets. This need was brought home to the Chairman the Board of British Petroleum (BP) PLC when the calls from the Crisis Center in Houston woke the Chairman in the middle of the night at his home in Sweden.

Hours before the call, the crew of the *Deepwater Horizon* had just set the seal assembly on top of the well (Rigzone, 2010). At that point, the blowout preventer (BOP) was tested. The crew had elected to displace the marine risers from the vessel to the sea floor, as was standard procedure. They had completed the BOP stack test in the inner liner and had tested the negative and positive pressure of the well and the casing of the well. The crew then opened the BOP. The stack is an enormous hydraulic valve that closes off everything from a mile below where oil and gas is under enormous pressure—thirty to forty thousand pounds per square inch (Rigzone, 2010).

A second crew took over, sliding another rig in place and continuing with the test drills, opening up the well until the gas well kicked. According to a firsthand observer, “a humongous bubble kicked up through the well bore.” It literally pushed the sea water all the way to the crown of the rig, which is about 240 feet in the air. It simply blew the top off the rig (Rigzone, 2010).

Once the gas had displaced all the sea water, the gas began to envelop the deck, and moved into the centre of the rig floor, displacing all the oxygen. The rig, a rectangle 400 feet by 300 feet was now totally enveloped in highly explosive gas that the crew could not see, taste nor smell. While the deck of the rig had no open flames, or sockets, something—possibly static electricity—ignited the gas (Rigzone, 2010).

Juries over the coming two decades will likely focus on what the responsible parties knew, or should have known, about the foreseeable risks of deep-water drilling. Juries will likely focus on what measures BP PLC and the other partners did, or did not take, to mitigate or minimize foreseeable and preventable risks. While there could decades of speculation about what the parties did not know, but should have known; or, knew but did not disclose or fix, there will be little speculation or debate about what they disclosed in 2009 to the public about the potential ecological risks of deep-water drilling.

The facts are incontrovertible—virtually no ecological risks were disclosed in advance in more than a thousand pages of Annual Reports and securities filings. Currently, the Securities and Exchange Commission (SEC) is investigating this lack of disclosure, perhaps considering bringing action against BP PLC for failure to adhere to the principles of honest and fair reporting of all significant risks to a company’s solvency.

An Invisible Ecological Catastrophe Waiting to Happen

The SEC will review all relevant filings, such as the Annual Report, the Sustainability Report and SEC filings. BP PLC proudly called its Sustainability Report for 2009 *Operating at the Energy Frontiers*. BP PLC reported robust earnings, an optimistic picture of how future events would unfold. The company reported that it was at the forefront of sustainability. Sustainability was defined as “the capacity to endure as a group; by renewing assets; creating and delivering better products and services that meet evolving needs of society; attracting successive generations of employees; contributing to a sustainable environment; and retaining the trust and support of our customers, shareholders and the communities in which we operate (BP Sustainability Report, 2009, p. 1). In this definition the environment receives short shrift.

According to its 2009 Sustainability Report, BP should not only be “a leader in what we do—by achieving excellent financial and operational results—but also by how we do it because the how is central to building the trust and accountability needed for long term success. We have emerged from 2009 in great shape and with a renewed competence and determination to realize our potential both in the short and long term” (p. 5).

There was nothing in the Sustainability Report, the 2009 Annual Report or the SEC filings that mentioned the Gulf of Mexico (GOM) *and* the ecological consequences of a BOP failure. “2009 was again a year in which our technical capabilities lead to exceptional exploration success. [...] With new discoveries, successful start-ups, efficient operations and a strong portfolio of new projects; we are exceptionally well placed to sustain our success in the deepwater Gulf of Mexico over the long-term” (p. 5).

The four hundred pages of annual reports prepared by Transocean and Halliburton were silent on the risks of ecological disaster. The theme in all three annual reports was pushing the limits of the oil extraction technologies around the world. The title of the Halliburton Annual Report was *Pushing Boundaries*.

There were no early warnings in the report of the regulator of off-shore drilling, the Minerals Management Services (MMS) of the Department of the Interior. The MMS’s forty-three page

Annual Report for 2008 reported to Congress that all was well. The Report highlighted lower administrative costs, increased revenues from the Royalty in Kind (RIK) Program, where the MMS received crude oil, rather than cash royalty payments, which the MMS would then sell on the open market. There were huge process and policy improvements reported to Congress. The MMS received and disbursed US\$13 billion from Federal off-shore and on-shore mineral and oil leases located on federal and aboriginal lands (United States Department of Interior, 2008, p. 9). If MMS had an oversight and regulatory role, it was largely invisible in the report to Congress. If there were risks to the GOM, or if there was a risks associated with deep-water drilling, these were not highlighted in the Report to Congress.

One day all was well for the CEO, shareholders and regulators of one of the world's biggest transnational corporations (TNCs). The next day, a company would be pushed to the limits of its solvency. At the peak of the crisis, shareholders lost US\$100 billion in the share value of BP PLC alone. The world of corporate accountability had been turned upside down.

“You Break an Ecosystem, You Compensate All Legitimate Claims”

After 22:00 CST on April 20, 2010, BP PLC was no longer just accountable for compliance with the regulator, Minerals Management Service (MMS) (now renamed the Bureau of Ocean Energy Management, Regulation, and Enforcement) and all applicable health, safety and environmental laws. Under the emerging corporate accountability framework that was taking shape on a daily and hourly basis, moving and changing like the oil on the surface of the waters, BP PLC liability expanded precedent by precedent.

First, there was the liability for all “legitimate” claims for clean-up costs and compensation. President Obama directed the company to set aside \$20 billion in an independent escrow account administered by a federal czar to cover likely compensation claims from millions in five coastal states who had their livelihoods affected by the spill. All revenues generated in the GOM were to be directed to this new fund. Second, there was the potential for punitive fines under federal environmental legislation, if the company was found to be negligent. Third, environmental advocacy groups were beginning to line up to seek damages, not for those clean-up costs or for compensation costs but for damage to the GOM ecosystem itself and the vast ecological services the GOM provided. In order to place a dollar value on the damages, these plaintiffs would need a value of the GOM ecosystem and would rely on the work of leading ecological economists.

Ecological economists had already developed credible accounting methods for valuing ecosystem services, coming up with a dollar value of GOM as a distinct and separate accounting entity, not unlike a corporation or family trust account. This dollar value could be used in subsequent litigation.

Prominent ecological economists such as Robert Constanza and Mark Anielski (an IISD Associate and author of *The Economics of Happiness*) and Sarah Wilson (Anielski & Wilson, 2009) have been computing the dollar value of large-scale ecosystems (LSEs) such as a river delta, a boreal forest or the GOM. Robert Constanza has computed the value of Earth Inc. to be at least US\$33 trillion. It is in the same vein that the accounting for the GOM Inc. is being analyzed (Constanza, 1997). By using the term Earth Inc. or GOM Inc. the author means to convey the sense of valuing the natural assets of the earth in the same way a corporation would value its fixed assets. The term Inc. is really being used as a metaphor.

Most recently, in the June 2010 issue of *Solutions*, Constanza, *et al* produced a seminal work on how to begin to use information on the dollar value of ecosystem services in a way that would change behaviour and help avert another ecological disaster. *Constanza et al.* (2010) provide for practical suggestions for changes in regulatory and corporate behaviour based on what the authors call an “assurance bond approach.” The authors suggest the creation of a trustee to manage a LSE such as the GOM, saying that the externalities, or the costs of the destruction of nature that are not recorded in traditional financial statements, have to be internalized, or brought into the realm of the traditional financial statements. In this ground-breaking work, the *Constanza et al.* do not address the accounting and financial disclosure issues implicit in making these external costs internal to traditional financial statements. This paper fills this gap, taking the seminal work of *Constanza et al.* as a given, by looking at the detailed accounting entries and annual report disclosure that would need to take place if there is to be a true accounting for nature.

Current accounting rules only account for actual royalties paid to the MNS and the capital and operating costs of complying with the rules of the MMS. There is no annual depreciation charge for reducing nature’s carrying capacity. The recent collapse of a US\$500 million semi-submersible rig illustrated the need to use the work of ecological economists such as Constanza and Anielski in a way that would both reflect the infinite value of a pelican and the consequences of an ecological disaster. In incorporating the work of ecological economists into the traditional accounting and disclosure model, a logical starting point is improving the disclosure of ecological risks and the corresponding financial costs.

The first logical step is for regulators such as the SEC to require mandatory disclosure in Annual Reports of the ecological risks associated with damage to the ecosystems upon which natural resource extraction companies are economically dependent. Economic dependence means the company’s status as a going concern, or solvent company, would be jeopardized if it were denied access to the LSEs where it extracts resources.

Mandatory Disclosure of Catastrophic Ecological Risks

What is envisaged is a mandatory section in the annual report of a natural resource extraction company that will provide essential contextual information on the impact of the company on the LSEs (aquatic, terrestrial, atmospheric or oceanic) upon which a company is economically dependent if it is to remain a going concern. The objective of this “Ecological Risk Section” would be to advise shareholders, investment analysts, and prospective investors, regulators and affected citizens of the possible ecological and economic risks associated with the resource extraction activity.

The Ecological Risk Section would have to be included in the Annual Report of the regulator of the LSE—the federal, state or provincial government that acts on behalf of the owner of the LSE. Committees in a Congress, Legislative Assembly or Parliament need information to hold to account the departments and agencies charged with the regulation and stewardship of LSEs. These parties in responsible government need this contextual information to judge whether royalties charged are commensurate with the risks of resource extraction and to assess the effectiveness of regulatory and oversight interventions.

The proposed new disclosure rules for a LSE such as the GOM Inc. would include, as a minimum, information described in Figure 1.

In addition to this increased disclosure, there is a need to create a tangible link between changes in the value of the LSE and reported financial performance in the traditional financial statements of the company. It is the reported bottom line that has profound consequences on corporate, shareholder and regulatory behaviour. This is why this accounting link is essential. Mere disclosure is not enough. What gets measured and reported in the income statement gets managed and worried about. What had to happen for there to be change in capital markets was for there to be an actual accounting for nature that would actually affect reported corporate profits, thereby profoundly shaping prospective shareholder, investor analyst and CEO decisions.

How to Bring Ecosystem Values into a Company Income Statement

But how can one calculate in a way that respects the sanctity of life and the inability to place a dollar value on the life of a pelican, yet reflects economic reality in the board room and in Cabinet?

Figure 1

Mandatory Disclosure on Ecological and Economic Risks for Resource Extraction Companies

- Physical characteristics. Data on the size and complexity of the LSE upon which the reporting entity is economically dependent has to be disclosed. The nature and extent of the data provided should be commensurate with the potential scale of the reporting company's effect on the LSE (a onetime ecological catastrophe and/or by long-term sustained ecological pressure by the reporting entity).
- Cumulative environmental effects. Data on the cumulative environmental effects of human use of the LSE should be provided. There should be a discussion of the vulnerabilities, the thresholds of the resiliency of the LSE and a discussion of the consequences of exceeding these limits.
- Estimated costs of ecosystem damage. There must be estimates of the full costs of an ecological disaster and/or degradation by sustained exploitation of the LSE. These estimates should include all the costs of cleanup incurred by the reporting entity, the costs incurred by all state, local and federal governments, the costs of litigation to both the reporting company and society and the possible fines under an assumption that negligence may be proved in court. In addition, these costs should include estimates of the dollar damage to the ecosystem itself, and all life dependent on the LSE. The estimate should be in dollars, estimate the person-years involved in cleanup and remediation, as well as a qualitative description of the damage and destruction to both ecosystems and social systems.
- Capitalized value of all ecosystem services. There must be an estimate of the dollar value of the LSE, and changes in value over time. There should be mandatory disclosure of the total market value of ecosystem services (exploitation of fisheries, timber, renewable resources, etc.) and non-market values (carbon dioxide sequestration, wetlands cleansing or water quality, production of biomass and oxygen, etc.) and the ratio of market to non-market values.
- Synergistic effects of all human pressure. There must be data on all significant (i.e., material) users economically co-dependent on the LSE being reported upon. The data has to be sufficient to allow readers of the report to estimate the total human pressure on the LSE from all industrial uses.
- Accountability for damage. There must be mandatory disclosure of the cause and effect relationships (i.e., attribution) between the use by specific reporting enterprises that use the LSE and the observed cumulative environmental effects. This data needs to be based on evidence of dose response relationships and trend line data on these relationships.
- Costs/benefits of risk minimization/regulatory options. There must be data on the estimated costs and benefits of different regulatory policy options for minimizing and mitigating the risks of potential damage to the LSE (through sustained depletion or through predictable and preventable accidents or incidents with low likelihood of occurrence but a catastrophic effect on the health of LSE). The report must disclose the regulatory and oversight options chosen by the regulator and the risks associated with these options.
- Royalties compared to capitalized ecosystem values and risk costs. Information should be provided on the royalties paid by users of the LSE to federal, state, provincial or territorial governments and the assumptions used in calculating the royalties. These costs can be compared by readers of the report to the potential cost estimates of a onetime disaster or sustained degradation of the LSE.
- Regulatory and oversight effectiveness. Information of the effectiveness of regulatory interventions intended to minimize or mitigate risks to a given LSE through chronic less visible degradation or highly visible catastrophic events.

References

- Anielski, M. & Wilson, S. (2009). *Counting Canada's natural capital: Assessing the real value of Canada's Boreal ecosystems*. Calgary, AB: Pembina Institute and Ottawa, ON: Canadian Boreal Initiative.
- Batker, D.P., de la Torre, I., Costanza, R., Swedeen, P., Day, J.W. Jr., Boumans, R. & Bagstad, K. (2010). *Gaining ground—Wetlands, hurricanes and the economy: The value of restoring the Mississippi River Delta*. Tacoma, WA: Earth Economics.
- bp. (2009). *Annual Review 2009: Operating at the energy frontiers*. Retrieved August 2010 from: [http://www.bp.com/annual review](http://www.bp.com/annual%20review)
- Costanza, R., Bakker, D., Day, J., Feagan, R., Martinez, M.L. & Ramon, J. (2010, 16 June). "The Perfect Spill: Solutions for Averting the Next Deepwater Horizon." Seminar Series: Solutions for a Sustainable and Desirable Future. Portland, OR: PSU Institute for Sustainable Solutions.
- Robert Costanza, Ralph d'Arge, Rudolf de Groot, Stephen Farber, Monica Grasso, Bruce Hannon, Karin Limburg, Shahid Naeem, Robert V. O'Neill, Jose Paruelo^{††}, Robert G. Raskin, Paul Sutton & Marjan van den Belt. 1997. *Nature* 387, 253 – 260.
- Cleveland, C. (2010) Deepwater Horizon oil spill. Retrieved August 2010 from The Encyclopedia of Earth: http://www.eoearth.org/article/Deepwater_Horizon_oil_spill
- Costanza, R., Pérez-Maqueo, O.M., Martínez, M.L., Sutton, P., Anderson, S.J. & Mulder, K. (2008). The value of coastal wetlands for hurricane protection. *Ambio*, 37, pp. 241–248.
- Costanza, R. & Perrings, C. (1990). A flexible assurance bonding system for improved environmental management. *Ecological Economics*, 2, pp. 57–76.
- Gulf of Mexico Foundation. (2010). Retrieved August 2010 from: <http://www.gulfmex.org>.
- Halliburton. (2009). *Pushing boundaries: 2009 Annual Report*.
- Rigzone. (2010, may 4). Account of anonymous caller. Retrieved August 2010 from: <http://www.rigzone.com/news/article>.

Rubenstein, D.B. (1994). *Accounting for the sustainable corporation: Strategies and techniques*. Santa Barbara, CA: Greenwood Publishing Group.

Sustainability Review. 2009. bp.

(http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/e_s_assets/e_s_assets_2009/downloads_pdfs/bp_sustainability_review_2009.pdf)

Transocean: Positioned to Lead. (2009). *Proxy Statement and 2009 Annual Report*.

United States Department of Interior, Minerals Management Service. (2008). *Report to Congress, Minerals Management Service, Royalty In Kind Program*.