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The Environmental Deficit: Applying Lessons from the Economic Recession

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THE ENVIRONMENTAL DEFICIT:
APPLYING LESSONS FROM THE ECONOMIC RECESSION

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ABSTRACT

In 2007, the nation entered a financial downturn unprecedented since the Great Depression of the 1930s. A period of national introspection followed, including memorable moments such as Federal Chairman Alan Greenspan’s gut-wrenching admission that his “whole intellectual edifice” had collapsed during the summer of 2007. Although prescriptions for financial rescue varied widely in the details, a surprisingly-broad consensus began to emerge as to the underlying pathology of the crisis. This Essay focuses on three underlying errors: rejecting rules through deregulation, trivializing risk through overly-optimistic analyses, and recklessly borrowing and lending money.

Those powerful lessons, accepted by a stunned nation in the midst of financial collapse, apply with equal force to the growing environmental deficit—the unsustainable spending down of natural resource assets. I argue that the environment could benefit from a dose of the same medicine that has been prescribed for the economy: enforcing rules through re-regulation, abandoning inaccurate models of cost-benefit analysis that trivialize the risks

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of environmental degradation, and making a commitment to sustainable use of the country’s natural capital.

This Essay tells two parallel stories of fiscal and environmental unraveling, seeking to capture the cultural moment by reporting the often-frank admissions of political and intellectual leaders as they confront the crisis. The Essay features a section (Part II.A) on the curious modern phenomenon of “midnight regulations,” including an Appendix showing the most recent enactments in table format. (Essay: 10,955 words, including footnotes).

INTRODUCTION: THE DEBT CULTURE

In August 2007, the United States began to experience a financial crisis unprecedented since the Great Depression of the 1930s.\(^1\) Triggered in part by subprime lending practices, the crisis deepened as homeowners defaulted on their mortgages. The problem spread as banks, poisoned by so-called toxic assets in their portfolios, restricted the flow of new credit. Overall in 2008, home prices fell 18%.\(^2\) In the year’s final quarter, the gross domestic product experienced its worst decline in over twenty-five years.\(^3\) By December 2008, the National Bureau of Economic Research declared that the nation had entered a recession.\(^4\) In response to that assessment, the stock market dropped 7.7 percent in one day.\(^5\)

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\(^2\) Catherine Rampell & Jack Healy, Fed Chairman Says Recession Will Extend Through the Year, New York Times, Feb. 25, 2009 (reporting that the “value of single-family homes in 20 major metropolitan areas was 18.5 percent lower in December than a year earlier,” according to the Standard & Poor’s Case-Shiller home price index).

\(^3\) Catherine Rampell, In Revision, G.D.P. Shrank at 6.2% at the End of 2008, NEW YORK TIMES, Feb. 27, 2009 (noting 6.2% decline in gross domestic product in the fourth quarter of 2008, the worst reduction since the recession of 1982).

\(^4\) The NBER is a nonpartisan group, widely recognized as the institution “charged with making the call for the history books.” Michael M. Grynbaum, Dow Plunges 680 Points as U.S. Recession is Declared, INTERNATIONAL HERALD TRIBUNE, Dec. 1, 2008.

\(^5\) Id. (describing 680 point drop in the Dow Jones industrial average).
By early 2009, the national unemployment rate had reached 7.6% and consumer confidence was at the lowest recorded level in history.\(^6\)

As the financial crisis unfolded, many searched for a coherent framework to explain what had gone wrong. One prominent report suggested that the financial maelstrom had spun off from the nation’s evolving “culture of debt.”\(^8\) As the authors explain, “When a society creates democratic institutions to encourage thrift, more people are likely to engage in the positive activities of saving, conservation, and asset building. When a society fails to nurture such institutions, more people are likely to over-spend, fall into consumerism as a philosophy of life, and go into debt.”\(^9\)

Riffing off that theme, New York Times columnist David Brooks describes the “great seduction” of the debt culture, leaving its victims exposed to predatory lenders and others as the country’s “moral structure around money” deteriorated.\(^10\) As Brooks explains, “what happened to . . . the nation’s financial system . . . is part of a larger social story. America once had a culture of thrift. But over the past decades, that unspoken code has been silently eroded.”\(^11\)

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\(^6\) Rampell & Healy, supra note 2 (noting January 2009 unemployment rate, as reported to Congress by Ben S. Bernanke, Federal Reserve Chairman).

\(^7\) Rampell & Healy, supra (noting that the Conference Board’s index of consumer confidence hit 25 in February 2009, representing “the lowest since [the Board] began tracking consumer sentiment in 1967”).


\(^9\) Join the Initiative, supra.

\(^10\) David Brooks, The Great Seduction, NEW YORK TIMES, June 10, 2008 (describing For a New Thrift: Confronting the Debt Culture as “one of the most important think-tank reports you’ll read this year”).

wake, the vanishing thrift norm left “rampant . . . financial decadence, the trampling of decent norms about how to use and harness money.”\(^\text{12}\)

Just as the debt culture is part of a larger social story, so also is it part of a larger environmental story. As the nation’s attention was riveted to the unraveling of the financial sector, another crisis continued to unfold, this time in the realm of the natural environment. The same debt culture that had decimated financial assets had long been attacking environmental assets, the nation’s stock of “natural capital.”\(^\text{13}\) In this parallel ecological universe, the environmental deficit was growing just as surely as the highly-publicized fiscal deficit. Although the degradation of the earth’s atmosphere by greenhouse gas emissions received prominent media attention, less well-known was the accelerating depletion of fresh water, biodiversity, and other natural resources.\(^\text{14}\)

In this Essay, I argue that the fiscal and environmental crises share a common pathology: the debt culture, with its attendant rejection of regulation, skewed perception of risk, and reckless borrowing and lending practices. Drawing upon lessons emerging from the financial sector, I argue that the environment could benefit from a dose of the same medicine that has been prescribed for the economy: enforcing rules through re-regulation, abandoning inaccurate models of cost-benefit analysis that trivialize the risks of environmental degradation, and making a commitment to sustainable use of the country’s natural capital. Together, these three measures are a prescription for sustainability, promoting a “new thrift”\(^\text{15}\) to stabilize both financial and natural systems.

Part I considers factors that led to the unraveling of the national economy, identifying three particularly compelling lessons that offer utility well beyond the financial context. Part II examines a parallel narrative, that of environmental


\(^{13}\) See infra note 92 and accompanying text.

\(^{14}\) See infra Part II.C.

\(^{15}\) See infra notes 8-12, 133, and accompanying text.
The Environmental Deficit

This part uses the bookends of 1980—following the dawn of the modern environmental era—and early 2009—the end of the George W. Bush administration. In retrospect, this period encompasses the rise and potential fall of the national experiment with deregulation. Part III returns to the lessons uncovered in the rubble of the fallen debt culture, considering their potential applicability to the environmental deficit. The Essay concludes that a new culture of thrift is necessary to redress both the financial and environmental deficits.

I. THE ECONOMY UNDONE

We are in the midst of a once-in-a-century credit tsunami16

Alan Greenspan
October 24, 2008

As the economic crisis unfolded, thoughtful analysts reexamined longstanding paradigms that may have contributed to the collapse. Although this period of national introspection did not yield a universal consensus, it produced some startlingly honest admissions. Notably, a significant number of high-level politicians, government officials, and commentators were willing to consider—and at times, embrace—ideas that would have been anathema just a few months earlier.

This Part highlights three philosophical bases of the nation’s economic woes, and the lessons associated with each. Sophisticated financial analysis will not be attempted. Rather, in conformity with this article’s comparative focus, the discussion will emphasize the cultural value system that disastrously misdirected both economic and environmental policy.

A. Rejecting Rules

For the past three decades or more, considerable political currency has been generated by platforms emphasizing the virtues of the free market, unhampered by governmental rules or enforcement measures. This dislike of regulation morphed into a deep antipathy toward the federal government itself, including taxation, regulation, and other core governmental functions. Deregulation and privatization became the watchwords of the day. A cottage industry in tax “relief” proposals flourished. Ronald Reagan famously set the tone in 1964, asserting that the nation’s founders sought to minimize the powers of the central government:

A government can’t control the economy without controlling people. And [the founders knew] when a government sets out to do that, it must use force and coercion to achieve its purpose. They also knew, those Founding Fathers, that outside of its legitimate functions, government does nothing as well or as economically as the private sector of the economy.17

Then-Governor Reagan concluded with the quip, “[G]overnments’ programs, once launched, never disappear. Actually, a government bureau is the nearest thing to eternal life we’ll ever see on this earth.”18

Succeeding presidents—both Republican and Democratic—took up the charge. In his 1996 State of the Union Address, President Bill Clinton declared, “The era of big Government is over,” adding the caveat, “But we cannot go back to the time when our citizens were left to fend for themselves.”19 And for his part, President George W. Bush proposed to modify the Social Security program by


18 Id.

allowing younger workers to establish “voluntary personal retirement accounts.” The President explained his proposal in terms that emphasized the virtues of the free market over government programs: “Here is why personal accounts are a better deal. Your money will grow, over time, at a greater rate than anything the current system can deliver. . . . In addition, you'll be able to pass along the money that accumulates in your personal account, if you wish, to your children or grandchildren.”

The President concluded in terms distrustful of government: “And best of all, the money in the account is yours, and the government can never take it away.”

As the economy declined precipitously in 2007, many began to question the conventional wisdom and its wholehearted faith in the free market. Perhaps the most striking soul-searching of all was undertaken by Alan Greenspan, Chairman of the Board of Governors of the Federal Reserve system from 1987-2006. During better economic times, members of Congress lauded Chairman Greenspan for his service: “You have guided monetary policy through stock market crashes, wars, terrorist attacks and natural disasters. You have made a great contribution to the prosperity of the U.S. and the nation is in your debt.”

But in 2009, a somber Greenspan testified for four hours before the House Oversight Committee as it probed the causes of the economic crisis. Speaking of his former unquestioning faith in the free market, unhampered by governmental oversight, the eighty-year-old Greenspan’s angst was palpable as he acknowledged that his “whole intellectual edifice . . . collapsed in the summer of last year.” Noting that he was “distressed” to discover “a flaw” in his ideology,

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21 Id.

22 Chairman Greenspan presided over the Board of Governors from August 11, 1987 through January 31, 2006, serving for more than 18 years under 4 different presidents.


24 Id.

25 Id.
Greenspan admitted, “Those of us who have looked to the self-interest of lending institutions to protect shareholder’s equity (myself especially) are in a state of shocked disbelief.”

In 2009, President Obama articulated the lessons to be drawn from the experiences of Greenspan and others, stating:

Nor is the question before us whether the market is a force for good or ill. Its power to generate wealth and expand freedom is unmatched, but this crisis has reminded us that without a watchful eye, the market can spin out of control—and that a nation cannot prosper long when it favors only the prosperous.

Prominent politicians and analysts on both ends of the political spectrum went even farther, considering whether the federal government should not merely exert a “watchful eye,” but should also take an ownership interest in some of the nation’s floundering banks, at least on a temporary basis until banks could repay bailout loans received from the federal government. This flirtation with nationalization was astounding. As one prominent television analyst noted, “[t]he idea of nationalization would have been [politically] radioactive just six

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26 Id. *Time Magazine* was less circumspect in its assessment, listing twenty-five blameworthy contenders for the financial crisis. See Nancy Gibbs, 25 People to Blame: The Good Intentions, Bad Managers and Greed Behind the Meltdown, *TIME MAGAZINE*, Feb. 23, 2009. As its primary offender, *Time* named Phil Gramm, chair of the Senate Banking Committee from 1995 through 2000, criticizing him as “Washington’s outspoken champion of deregulation.” Likewise, offender number two, Alan Greenspan, was faulted for “his long-standing disdain for regulation [which] underpinned the mortgage crisis.” Coming in third was Chris Cox, the former Chief of the SEC, taken to task for his “lax enforcement” to limit the massive leveraging that led to the financial collapse.” Id. at 22-23.

months, but now we are moving toward a consensus that this is what will be needed.” Republican Governor Arnold Schwarzenegger agreed, distinguishing American nationalization from that occurring in Europe: “Here the government steps in only if there is a problem. This is a huge service to the people.” As Nobel Prize winning economist Paul Krugman explained, “[I]sn’t nationalization un-American? No, it’s as American as apple pie.”

B. Trivializing Risk

The systematic underestimation of risk was a second significant cause of the recession. Just as the nation’s unsustainable spending binge was a product of short-sighted vision, willful blindness, and even greed, so also was its refusal to acknowledge risk. As Federal Reserve Chairman Alan Greenspan admitted, the modern risk management paradigm was deeply flawed, in part due to its trivialization of risk. As Greenspan explained, “the data inputted into the risk management models generally covered only the past two decades, a period of euphoria.”

The flawed edifice of Greenspan and others was revealed as nothing but a house of cards. Risk was passed off from institution to institution, as substandard loans were pooled together and sold. Under such circumstances, even the best

28 ABC News, This Week with George Stephanopoulos, Feb. 22, 2009 (author’s transcript of comments of host George Stephanopoulos).

29 Id. (author’s transcript of comments of guest Arnold Schwarzenegger, Republican Governor of California).

30 Paul Krugman, Banking on the Brink, NEW YORK TIMES, Feb. 23, 2009. In more restrained terms, Alan Greenspan agreed, “It may be necessary to temporarily nationalize some banks in order to facilitate a swift and orderly restructuring,” Id. (quoting former Federal Reserve chairman).

31 Testimony of Dr. Alan Greenspan, supra note 16 (observing, “It was the failure to properly price such risky assets [subprime securities] that precipitated the crisis. . . .”).

32 Martin Neil Baily et al., supra note 1 (observing, “[w]ith the ability to immediately pass off the risk of an asset to someone else, institutions had little financial incentive to worry about the actual risks of the assets in question”).
models and data would have difficulty keeping up with the invention of “new kinds of financial innovations that masked risk; with companies that failed to follow their own risk management procedures; and with regulators and supervisors that failed to restrain excessive risk taking.”  

A report by the Brookings Institution found “especially shocking” the pervasiveness of the risk underestimation:

What is especially shocking, though, is how institutions along each link of the securitization chain failed so grossly to perform adequate risk assessment on the mortgage-related assets they held and traded. From the mortgage originator, to the loan servicer, to the mortgage-backed security issuer, to the CDO [collateralized debt obligations] issuer, to the CDS protection seller, to the credit rating agencies, and to the holders of all those securities, at no point did any institution stop the party or question the little-understood computer risk models, or the blatantly unsustainable deterioration of the loan terms of the underlying mortgages. . . .

With brutal honesty, one loan analyst summarized the problem of risk assessment: “[A bond] could be structured by cows and we would rate it.”

C. Reckless Borrowing and Lending

A third philosophical pillar of the economic decline was the embrace of consumerism and consumption, replacing the traditional reverence for thrift and frugality. Americans borrowed freely, financing the purchase of everything from homes to consumer goods. In 1982, households owed an average of 60% of

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33 Id.

34 Id.

35 Gibbs, supra note 26 (quoting e-mail written by analyst employed by Standard & Poors).

36 Brooks, supra note 10.
their income.\textsuperscript{37} By 2007, consumer debt had skyrocketed to 130\% of income.\textsuperscript{38} At the same time, personal savings dropped from nine percent to 0.6 percent between 1980 and 2007.\textsuperscript{39}

Such profligate spending, borrowing, and lending was supported by evolving cultural norms that tolerated, and even encourage, over-consumption. Capturing the national mood, in a 2009 cover story \textit{Time Magazine} identified twenty-five people to blame for the financial meltdown.\textsuperscript{40} Listing the “American consumer” as number five among the culprits, \textit{Time} scolded, “We really enjoyed living beyond our means. No wonder we wanted to believe it would never end. But the bill is due. . . . We’ve been borrowing, borrowing, borrowing—living off and believing in the wealth effect, first in stocks, which ended badly, then in real estate, which has ended even worse. Now we’re out of bubbles.”\textsuperscript{41}

Politicians summarized the lessons to be gleaned from the national shopping and borrowing spree. Although disagreeing as to the precise solution, they agreed that the net result had been unsustainable consumption of assets to the detriment of our children. As Senator John McCain forcefully framed the issue, “It’s generational theft.”\textsuperscript{42} President Obama underscored this concern for future generations:

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38 \textit{Id.}

39 Paul Krugman, \textit{Decade at Bernie’s}, \textit{NEW YORK TIMES}, Feb. 16, 2009 (citing data from the Federal Reserve, \textit{Survey of Consumer Finances} (Feb. 2009)). Krugman concluded, “[T]here has been basically no wealth creation at all since the turn of the millennium: the net worth of the average American household, adjusted for inflation, is lower now than it was in 2001. . . . “For most of the last decade America was a nation of borrowers and spenders, not savers.” \textit{Id.}


41 \textit{Id.} See also Thomas L. Friedman, \textit{Obama’s Ball and Chain}, \textit{NEW YORK TIMES}, Mar. 4, 2009 (“The problem is more complicated than anything you can imagine. We are coming off a 20-year credit binge.”).

42 Paul Krugman, \textit{Failure to Rise}, \textit{NEW YORK TIMES}, Feb. 13, 2009 (quoting Senator John McCain, arguing in favor of tax cuts rather than the Obama administration’s proferred $800 billion stimulus package). See also Club of Rome, \textit{Limits to Growth} (1972) (predicting that then-current
Now, if we’re honest with ourselves, we’ll admit that for too long, we have not always met [our] responsibilities—as a government or as a people. . . .

And though [many] challenges went unsolved, we still managed to spend more money and pile up more debt, both as individuals and through our government, than ever before. . . . People bought homes they knew they couldn’t afford from banks and lenders who pushed those bad loans anyway.43

The President concluded with a sobering call to action: “And all the while, critical debates and difficult decisions were put off for some other time on some other day. Well that day of reckoning has arrived, and the time to take charge of our future is here.”44

levels of economic growth were unsustainable, supplying short-term needs in a way that led to an “environmental deficit,” the consequences of which would be borne by future generations.)

43 Remarks of President Barack Obama, Address to Joint Session of Congress, supra note 27.

44 Id. The President concluded,

In other words, we have lived through an era where too often, short-term gains were prized over long-term prosperity, where we failed to look beyond the next payment, the next quarter, or the next election. A surplus became an excuse to transfer wealth to the wealthy instead of an opportunity to invest in our future.
II. THE ENVIRONMENT UNDONE

It's morning again in America.  

Ronald Reagan  
Campaign advertisement (1984)

The era of deregulation—blamed by many analysts for the 2008 recession—began innocently enough with the sunny optimism of President Ronald Reagan. As applied to the environmental realm, the deregulatory period can be collapsed into the span of a single day: from the “morning” of President Reagan to the “midnight” regulations promulgated by President George W. Bush.\textsuperscript{46} Clearly, much environmental progress occurred during that time frame—from roughly 1980 through 2009.\textsuperscript{47} But just as clearly, the deregulatory philosophy—coupled with the unsustainable consumption of environmental

\textsuperscript{45} In the 1984 campaign leading to Ronald Reagan’s election to a second term as president, the Reagan campaign ran a television advertisement with the following narrative:

It's morning again in America. Today more men and women will go to work than ever before in our country's history. With interest rates at about half the record highs of 1980, nearly 2,000 families today will buy new homes, more than at any time in the past four years. This afternoon 6,500 young men and women will be married, and with inflation at less than half of what it was just four years ago, they can look forward with confidence to the future. It's morning again in America, and under the leadership of President Reagan, our country is prouder and stronger and better. Why would we ever want to return to where we were less than four short years ago?

Available at http://it.stlawu.edu/~quack/seminar/home.htm.

\textsuperscript{46} See infra Part II.C.

assets and the trivialization of environmental risk—failed to address looming environmental challenges that will plague us for generations to come.48

Part II argues that the flawed paradigm that enabled the 2008 financial crisis to occur—transforming President Reagan’s sunny morning into an evening of epic financial storms—played an equally significant role in accelerating environmental decline. The following sections identify key legal developments that precipitated the decline, and highlight the shared philosophical underpinnings of the nation’s economic and environmental policy from 1980 through 2008.

A. Rejecting Rules

Since about 1980, the forces opposing governmental regulation have grown increasingly vocal and powerful. This section describes three key changes that limited the ability of agencies to promulgate new rules. The first two changes are systematic: requiring agencies to prepare “regulatory impact analyses” and subjecting technical agency regulations to political scrutiny by the White House. As a third deregulation technique, this section examines the phenomenon of “midnight regulations,” a method by which outgoing presidents seek to leave their mark on agency regulations for years to come. Notably, all three developments involve the executive branch of government, as modern presidents have sought to expand their own power in comparison to the other two branches of government.

Early in his first term, President Reagan began a systematic overhaul of the way that administrative agencies promulgate and enforce rules. In 1981, Reagan signed Executive Order 12291, Federal Regulation, requiring federal agencies to promulgate a “regulatory impact analysis” for every “major rule.”49

48 Id.

49 Executive Order 12291, Federal Regulation, Feb. 17, 1981. See generally The American Presidency Project, http://www.presidency.ucsb.edu/ws/index.php?pid=43424 (last visited Feb. 29, 2009). The Order defined “major rule” as any regulation that is likely to result in an “annual effect on the economy of $100 million or more; a major increase in costs or prices . . . ; or significant adverse
The analysis must describe the potential costs and benefits of the rule, including those that cannot be quantified in monetary terms. Most important of all, the Order establishes a default presumption against regulation, with agencies bearing the burden of proving the need for regulation—environmental and otherwise—in economic terms.

A second important development took place a decade later, as President Clinton gave new authority to the deregulatory movement. In 1993, the President signed Executive Order 12866, *Regulatory Planning and Review*. In its preface, the Order adopted a decidedly hostile tone toward federal regulation, solicitous of the free market and private sector:

\[\text{effects on competition, employment, investment, productivity, innovation, or competition” with foreign enterprises.”} \text{Executive Order 12291, § 1(b).}\]

\[\text{Executive Order 12291, at § 3(d).}\]

\[\text{The Order states:}\]

(a) Administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action;

(b) Regulatory action shall not be undertaken unless the potential benefits to society from the regulation outweigh the potential costs to society;

(c) Regulatory objectives shall be chosen to maximize the net benefits to society;

(d) Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and

(e) Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefits to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future.

Executive Order, at § 2.

\[\text{Executive Order 12866, Sept. 30, 1993. Although the Order revokes President Reagan’s Executive Order 12291, the Clinton Order continues and strengthens the underlying philosophy. See Executive Order 12866, at § 11.}\]
The American people deserve a regulatory system that works for them, not against them: a regulatory system that protects and improves their health, safety, environment, and well-being and improves the performance of the economy without imposing unacceptable or unreasonable costs on society; regulatory policies that recognize that the private sector and private markets are the best engine for economic growth; regulatory approaches that respect the role of State, local, and tribal governments; and regulations that are effective, consistent, sensible, and understandable. We do not have such a regulatory system today.53

Among other things, the Clinton order strengthened the presumption against regulation, asserting that “[f]ederal agencies should promulgate only such regulations as are required by law, necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people.”54 Notably, economic concerns preceded environmental concerns in an alphabetized list of regulatory priorities, applicable to all federal agencies, regardless of their primary mission: “[I]n choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits, including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity. . . .” 55

Most importantly, Executive Order 12866 made the scientific and technical expertise of federal agencies subservient to the political oversight of the president. To accomplish this, the Order requires the Office of Information and Regulatory Affairs (“OIRA”)—an office within the White House Office of

53 Id. Emphasizing his faith in the market system, President Clinton ordered agencies to identify alternatives to regulation, “including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public.” Id. at § 1(a)(3).

54 Id. at § 1(a).

55 Id. at § 1(a).
Management and Budget ("OMB")—to review significant agency rules before they are promulgated. In so doing, OIRA must “provide meaningful guidance and oversight so that each agency’s regulatory actions are consistent with applicable law, the President’s priorities, and the principles set forth in this Executive order . . . .”57 In addition, OIRA has the authority to “return” proposed rules to agencies for “further consideration.”58 Disagreements between the agencies and OIRA are to be resolved by the President.59 Although seemingly benign, the role of OIRA has received severe criticism. As one prominent environmentalist argues,

Practically unknown outside the Beltway, OIRA’s power is unmatched among federal agencies. Its official charter is to review every economically significant regulation proposed by the federal government and report the fiscal impacts to the White House. Federal departments and agencies develop these new regulations through an open process, guided by expert advice and mandatory public comment. Typically this takes six or seven years. Then, at the end of this highly democratic process, these regulations disappear into OIRA—only to emerge dramatically altered or not at all.60

The critic concludes, “OIRA may be the most antidemocratic institution in government.”61

56 The Office of Information and Regulatory Affairs was created by Paperwork Reduction Act of 1980, Pub. L. 96-511.

57 Id. at § 5(b).

58 Id. at § 5(b)(3).

59 Id. at § 7.


61 Id.
A third important development that has weakened environmental protection involves so-called “midnight regulations.” It has become common practice for late-term presidents to focus upon legacy-building during the waning hours of their administrations. Increasingly, presidents have done so by ordering the administrative agencies under their control to promulgate new rules under a schedule carefully timed to bind the next president. Although this practice is not inherently biased toward deregulation, the most recent spate of midnight regulations weakened or dismantled previously existing regulatory safeguards, many in the environmental realm.

The 2006-2009 midnight regulations—promulgated at the end of the second George W. Bush administration and listed in the Appendix to this article—reflect a world view remarkably similar to the prevailing economic theory. Both reveal an unquestioning faith in the political philosophy of deregulation, an “intellectual edifice” later acknowledged as deeply flawed by some of its most faithful disciples. Both exhibit little curiosity as to the concrete consequences of abstract political theory. And both harbor a deep distrust of government in general, and the federal government in particular. The environmental midnight regulations translate this philosophy into a consistent set of code words, language so bureaucratic and malleable that it is nearly impossible for the casual reader to discern the regulations' core purpose or likely consequences. Words such as “efficiency,” “flexibility,” “voluntary” and “regulatory burden” are ubiquitous throughout the new regulations, generally signaling a program aimed at weakening environmental protection.

For example, in the name of “efficiency,” a number of environmental protections were substantially weakened, including:

62 During the George W. Bush administration, for example, the rate of rulemaking approvals generally increased each year as the administration drew to a close. The Office of Information and Regulatory Affairs (“OIRA”) approved 81 final rules in 2005, 92 in 2006, 83 in 2007, and 157 in 2008. See www.RegInfo.gov (tallying number of OIRA approvals from September 1 to December 31 of each year).

63 See supra note 25 and accompanying text.

64 See Appendix.
regulation that repealed a prohibition against mining activities within one hundred feet of perennial or intermittent streams, claiming an intent to “clarify” existing regulations and “streamline” the permitting process;\textsuperscript{65} b) a new endangered species act rule that relieves federal agencies of the obligation to consult with expert wildlife agencies before conducting activities that may affected threatened or endangered species,\textsuperscript{66} claiming an intent to “clarify” existing requirements and produce a process that “is less time-consuming and a more efficient use of our resources;”\textsuperscript{67} c) a new regulatory exemption for farmers, relieving them of the obligation to report certain air releases of hazardous substances from animal waste, designed in part to “reduc[e] reporting burdens on America’s farms;”\textsuperscript{68} and d) a new rule weakening the federal prohibition

\textsuperscript{65} Excess Spoil, Coal Mine Waste, and Buffers for Perennial and Intermittent Streams, 73 Fed. Reg. 75814, 75,816 (Dec. 12, 2008) (promulgated under the authority of the Surface Mining Control and Reclamation Act of 1977). See also id. at 75,816 (discussing 1983 amendment of the stream buffer rule and its purpose of “improving the ease of administration and eliminating the possibility of applying the rule to ephemeral streams and other relatively insignificant water bodies”). Opponents claim that the weakened rule would allow coal companies to fill over 1,000 additional miles of Appalachian streams with the debris from mountaintop removal coal mining. See Press Release, Congressman Frank Pallone, Jr. (D-NJ), Mar. 30, 2004, available at http://www.house.gov/list/press/nj06_pallone/pr_mar30_mining.html (remarks of senior member of the House Energy and Commerce Committee).

\textsuperscript{66} Interagency Cooperation Under the Endangered Species Act, 73 Fed. Reg. 76,272, 76,275 (Dec. 16, 2008)


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against carrying concealed weapons in national parks and wildlife refuges by
deferring to state gun law, designed in part to “give the greatest respect to the
democratic judgments of State legislatures with respect to concealed firearms.”

B. Trivializing Risk

Although optimism may occupy a proud position in the American psyche,
when left unchecked it can become a liability. As a counterpart to the economic
optimism that led many investors and borrowers to undervalue risk, an
environmental optimism has led many to simultaneously underestimate the risks
posed by human activities and to overestimate the capacity of future
technologies to counteract environmental damage. The trivialization of
environmental risk has been systemized through the mechanism of the cost-
benefit analysis. As a corollary, risks may be underestimated when politicians
rather than scientific experts make the relevant calculus, leading to the
phenomenon known as the politicization of science.

At its core, cost-benefit analysis incorporates assumptions about the risks
posed by various unregulated activities, and the associated monetary savings to
be realized by reducing risky behaviors. If the risks are trivialized, then
regulation is less likely to occur. The EPA’s methodology provides a useful
example of how federal agencies perform this analysis. First, the EPA identifies

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69 General Regulations for Areas Administered by the National Park Service and the Fish and Wildlife

70 See National Center for Environmental Economics, Office of Policy Economics and Innovation,
U.S. Environmental Protection Agency, Guidelines for Preparing Economic Analyses, at 2-1 through
(describing statutory and executive order requirements for conducting economic analyses). See
also See Office of Management and Budget, OMB Circular A-4: Regulatory Analysis, available at
http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf; John D. Graham, Memorandum to the
President’s Management Council on OMB’s Circular No. A-4, New Guidelines for the Conduct of
the benefits of proposed environmental regulations by listing the types of “environmental improvements” they are likely to generate.71 These projected improvements fall into numerous categories, including human health improvements, ecological improvements, and aesthetic improvements.72 Second, the agency quantifies the level of anticipated benefits, incorporating assumptions about the risks posed if human activities remain unregulated.73 For example, human health improvements are based upon estimates of “mortality risk reductions” and “morbidity risk reductions.”74 Similarly, ecological improvements consider, among other things, avoiding the risks posed by climate change.75 Finally, the EPA evaluates the benefits of potential regulations in monetary terms.76 To do this, the EPA seeks to measure the “utility” or “satisfaction” that people derive from the relevant goods or services.77

Cost-benefit analysis is controversial. Throughout the analysis, several forces lead to the consistent underestimation of risk. The tendency is more pronounced in the environmental context, where cost-benefit analysis may lend an aura of precision to an inherently subjective venture. Even federal agencies acknowledge significant methodological challenges, leading to potentially unreliable results. As the EPA warns, “economic analysis is but one component

71 Guidelines for Preparing Economic Analyses, supra, at 7-2, 7-3, and 7-16.

72 See id. at 7-5.

73 Id. at 7-17 through 7-18 (calling for consultation with experts including human health and ecological risk assessors).

74 Id. at 7-1 (considering “‘typical’ EPA . . . regulation that reduces emissions or discharges of contaminants). Mortality risk reductions include reduced risk of cancer fatalities and acute fatalities. Morbidity risk reductions include reduced risk of cancer, asthma, and nausea. Id. at 7-5.

75 Id. at 7-1 (identifying ecological improvements in terms of the “ecosystem services” provided by protected resources, including “[s]uch valuable ecological functions . . . [a] the partial stabilization and moderation of climate conditions, the regulation of water availability and quality, and nutrient retention”).

76 Id. at 7-19.

77 EPA, Guidelines, supra note 70, at 7-2.
in the decision making process and under some statutes cannot be used in setting standards.” 78 With respect to the estimation of benefits, in particular, the EPA admits that many of its analyses “face several major obstacles.” 79

Three such obstacles are particularly noteworthy. First, the monetization of benefits is problematic, particularly in the case of environmental goods for which no market has been established to give an indication of value. In numerous cases, the EPA simply estimates the benefit of an environmental improvement, using one of a number of “preference valuation methods.” 80 For example, the EPA may use “willingness to pay” as a proxy for the value of environmental benefits, defined as “the maximum amount of money an individual would voluntarily pay to obtain an improvement.” 81 This methodology is far from ideal, creating the potential to dramatically understate the value of environmental assets. 82 As the EPA explains, a major obstacle of benefits analysis “arises from the lack of appropriate analytical tools and/or data with which to apply them. . . [A]nalysts often must either adapt existing tools to the situation using their best professional judgment or simply leave some benefit categories non-monetized.” 83 This is a euphemistic admission of the fact that in some cases the EPA simply omits environmental benefits from the ledger. As a result, the costs of regulation would necessarily outweigh benefits monetized as valueless, leading the agency to conclude that protective rules should not be enacted.

A second flaw of the cost-benefit methodology is its use of discounting techniques. After an agency monetizes costs and benefits, both are “discounted

78 Id.
79 Id. at 7-1.
80 Id. at 7-2 to 7-3.
81 Id. at 7-3.
83 Id. at 7-1 to 7-2.

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to present value.” This practice is premised upon the assumption that “people prefer consumption today over consumption in the future, and the fact that invested capital is productive and provides greater consumption in the future.” When the benefits will not accrue for several generations, the EPA employs a “social discounting” analysis. In either case, the discounting exercise is premised upon the assumption that consumption is to be encouraged—a preference that might be justified in the context of a fiscal system dependent upon economic growth, but dangerous when applied to encourage the consumption of limited natural resources. In a chapter entitled, Honey, I Shrunk the Future, one prominent critique argues,

The notion that adults should teach children to understand and plan for the future is lost in the new mathematics of impatience. . . . [T]he world [our children] will inherit is scarcely worth taking seriously, its present value too small to outweigh a minor change in consumption today. Diseases that will affect us decades from now, environmental crises that will eventually change the earth’s climate for the worse, nuclear and toxic wastes that will be unsafe for human contact for centuries—all these and more can be made to disappear with the flick of an equation.

The authors conclude, “Discounting society’s most profound values endorses profligacy and shuns discipline.”

Finally, the excessive usage of cost-benefit analysis has been criticized for its potential to emasculate congressional mandates for environmental protection.

84 Id. at 6-1.

85 Id. at 6-8. As the EPA explains, “If costs and benefits can be represented as changes in consumption profiles over time, then discounting should be based on the rate at which society is willing to postpone consumption today for consumption in the future.” Id.


87 Id.
Referring to the independent review by the White House (through OIRA) of all proposed major environmental regulations, some critics allege,

[Traditional cost-benefit analysis] conflicts with the statutory standards established by Congress for health, safety, and environmental agencies. Only two of 22 major health, safety, and environmental statutes rely on a cost-benefit test to determine the level of regulation. In many cases, the OMB’s insistence on superimposing this imperfect methodology trumps the considerations that must be the focus of agency decisionmaking: The criteria for decisionmaking established by the statutes themselves.

The EPA’s own advisory board agrees in the context of cost-benefit analyses conducted by that agency. In its critique of the EPA’s methodology, the Science Advisory Board reminded the agency that, “of course, only the legislative branch has the power to . . . specify what kinds of regulations EPA might promulgate.” As a result, the EPA “should make clear that while economic analysis can identify superior policy options, EPA’s legal authority defines and limits its menu of choices. . . . [The EPA should] better inform readers about economic analysis that is relevant for EPA, rather than mimicking the treatment in environmental economics textbooks.”

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88 See supra Part II.A.


91 Id.
C. **Reckless Borrowing and Lending**

In the economic sector, until recently the prevailing wisdom has encouraged a frenzy of borrowing and lending, supported by deregulated markets and a pervasive denial of the attendant risks. In the environmental realm, similarly frenetic behavior has encouraged the present generation to spend down the planet’s “natural capital” by consuming natural resources at an unsustainable pace.

Two examples serve to illustrate the depth of the environmental counterpart to unsustainable economic practices. The first example is microscopic, focusing on one particular resource (wetlands) in one particular country (the United States). The nation’s stock of wetlands has been severely depleted, despite a longstanding national goal of “no net loss” of wetlands. The country has lost over half of its original wetlands. In the early 1600s, the area not occupied by the United States (excluding Alaska and Hawaii) included approximately 221 million acres of wetlands; by 2004, that number had declined to about 107.7 million acres. Although the rate of wetland loss has slowed

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93 In 1988, the National Wetlands Policy Forum, a group of 20 state and local officials, environmentalists, and land developers, recommended that the nation adopt the goal of “no net loss” of wetlands. That is, although some wetlands may be destroyed by development, such loss would be mitigated by the creation of new, human-made wetlands. See National Wetlands Policy Forum (1988). Presidents George Bush and Bill Clinton embraced this goal, at least in theory. See. In 2005, an even more challenging goal was set by President George W. Bush: the restoration, improvement, and protection of more than 3 million acres in 5 years.

recently, the nation continues to experience a gross loss of about 30,000 wetland acres per year.\textsuperscript{95}

But the accounting does not stop there. Ever optimistic, Americans have devised a wetlands legal regime that allows for the “mitigation” of wetland loss through a variety of methods, including the creation of artificial wetlands.\textsuperscript{96} Under this accounting practice, the nation enjoyed a gross gain of 191,740 wetland acres from 1998-2004.\textsuperscript{97} It remains to be seen whether this is a pragmatic accommodation required to support necessary development, or yet another example of deceptive accounting practices. The federal Fish and Wildlife Service (“FWS”) notes three cautionary factors. First, the recent gross gains were reported by a study that measured only the quantity of wetland acreage, not its quality, a potentially more significant measure of ecosystem health.\textsuperscript{98} Second, as the FWS acknowledged, its data do not account for Hurricanes Katrina and Rita during the summer of 2005, which destroyed vast expanses of coastal wetlands.\textsuperscript{99} Finally, the numbers rely heavily upon wetland mitigation, the creation of

\textsuperscript{95} United States Dep’t of Agriculture, Natural Resources Conservation Service, \textit{National Resources inventory: 2003 Annual NRI}, Table: Changes in Palustrine and Estuarine Wetlands on Non-Federal Land and Water Area (showing gross losses, gross gains, and net change from 1992-2003 in acres per year). Annual gross losses were reported at 99,000 acres (1992-97), 53,000 acres (1997-2001), and 30,000 acres (2001-03).

\textsuperscript{96} See Department of Defense, Department of the Army, Corps of Engineers & Environmental Protection Agency, \textit{Compensatory Mitigation for Losses of Aquatic Resources}, 73 Fed. Reg. 19594 (Apr. 10, 2008) (final rule), available at http://www.epa.gov/owow/wetlands/pdf/wetlands_mitigation_final_rule_4_10_08.pdf. Under the rule, “compensatory mitigation” involves “actions taken to offset unavoidable adverse impacts to wetlands, streams and other aquatic resources authorized by [federal] . . . permits.” \textit{Id}. Four methods are possible: 1) the restoration of previously-existing wetlands, 2) the enhancement of existing wetland functions, 3) the creation of a new wetland, or 4) the preservation of an existing wetland. \textit{Id}.


\textsuperscript{98} Fish and Wildlife Service, \textit{Status and Trends, supra}.

\textsuperscript{99} \textit{Id}. at 16.
artificial ponds and other aquatic areas to replace natural wetlands. As the FWS reported,

Without the increased pond acreage, wetland gains would not have surpassed wetland losses during the time frame of this study. The creation of artificial freshwater ponds has played a major role in achieving wetland quantity objectives. . . . [But] [s]ome freshwater ponds would not be expected to provide the same range of wetland values and functions as [the] vegetated freshwater wetland [areas that they replace].

Reinforcing this concern about the effectiveness of mitigation, the National Research Council reported in 2001 that “[t]he goal of no net loss of wetlands is not being met,” in part because mitigation promises may not always be fulfilled.

At the macroscopic level, the World Wildlife Fund’s Living Planet Report 2008 draws a direct link between fiscal and ecological crises: “The recent downturn in the global economy is a stark reminder of the consequences of living beyond our means. But the possibility of financial recession pales in comparison to the looming ecological credit crunch.” In particular, the Report notes a 30% decline in vertebrate species populations from 1970-2005; a doubling of the worldwide “ecological footprint” from 1961-2005; and an

100 Id. at 17.

101 See Andrew C. Revkin, Efforts to Save Wetlands Are Inadequate, Study Says, N.Y. TIMES, June 27, 2001 (citing panel’s findings that “in many cases the construction of substitute wetlands was often delayed or never finished” and “even when the final result satisfied regulations, the artificial wetlands did not duplicate the ecological functions of the natural wetlands that were buried”).


103 Id. at 2-3.

104 Id. at 14-17 (defining ecological footprint as “the area of biologically productive land and sea required to provide the resources we use and to absorb our waste”).
“ecological debtor” rate exceeding 75%.105 In its sobering conclusion, the Report predicts, “Our global footprint now exceeds the world’s capacity to regenerate by about 30 percent. If our demands on the planet continue at the same rate, by the mid-2030s we will need the equivalent of two planets to maintain our lifestyles.”106 These findings are reinforced by the United Nations’ Millennium Ecosystem Assessment,107 which concluded that “[o]ver the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands. . . . This has resulted in a substantial and largely irreversible loss in the diversity of life on Earth.”108

105 Id. at 1-3, 16-17 (asserting that “more than three quarters of the world’s people live in nations that are ecological debtors—their national consumption has outstripped their country’s biocapacity”).

106 Id. at 1.

107 The Millennium Ecosystem Assessment (“MA”), initiated in 2001 at the urging of United nations Secretary General Kofi Annan, sought to “assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being.” Millennium Ecosystem Assessment, Overview, http://www.millenniumassessment.org/en/About.aspx (last visited Mar. 4, 2009). As the MA website explains,

The MA has involved the work of more than 1,360 experts worldwide. Their findings, contained in five technical volumes and six synthesis reports, provide a state-of-the-art scientific appraisal of the condition and trends in the world’s ecosystems and the services they provide (such as clean water, food, forest products, flood control, and natural resources) and the options to restore, conserve or enhance the sustainable use of ecosystems.

Id.

108 Id. at 1.
III. A NEW DAY: REDUCING THE ENVIRONMENTAL DEFICIT

[The] day of reckoning has arrived, and the time to take charge of our future is here.\textsuperscript{109} President Barack Obama February 24, 2009

Out of adversity, thoughtfully examined, emerges wisdom. As the nation learns from its financial mistakes, it may uncover valuable lessons applicable well beyond the financial sector. This Part III will apply the tentative learning from the financial crisis to the equally serious challenge of protecting the nation’s environmental resources.

A. Re-regulating the Environment

There is a growing acceptance of the value of federal regulation, at least to prevent egregious practices harmful to important national interests. In the context of the financial system, President Obama argued, “Now, if we’re honest with ourselves, we’ll admit that for too long, we have not always met [our] responsibilities—as a government or as a people. . . . Regulations were gutted for the sake of a quick profit at the expense of a healthy market.”\textsuperscript{110} In the context of environmental protection, re-regulatory efforts have focused heavily upon the abusive potential of midnight regulations—a practice common among presidents of both political parties. As one observer stated, “sudden bursts of regulatory activity at the end of a presidential administration are systematic, significant, and cut across party lines.”\textsuperscript{111}

\textsuperscript{109} Remarks of President Barack Obama, supra note 27.

\textsuperscript{110} Id.

\textsuperscript{111} Susan E. Dudley, Reversing Midnight Regulations, REGULATION 9 (Spring 2001), quoted in Curtis W. Copeland, Midnight Rulemaking: Considerations for Congress and a New Administration, at 1, CONGRESSIONAL RESEARCH SERVICE, RL 34747 (updated Nov. 24, 2008).
The impact of midnight regulations can potentially be reversed or delayed through executive, administrative, legislative, or judicial action. With respect to the executive branch, in the limited case of rules that have not yet been published as final in the Federal Register, the president can impose a moratorium on new rulemaking, as well as order the postponement of the effect date of rules that have already been published.\textsuperscript{112} If proposed rules do not pass muster with the new administration, they need not be promulgated as final rules.\textsuperscript{113} After rules have become final, they can generally not be changed except through the initiation of a new rulemaking process under the Administrative Procedure Act.\textsuperscript{114}

Congress can also overturn or restrict agency rules. In most cases, Congress will do so through traditional statutory promulgation. The Congressional Review Act provides another more expeditious alternative, allowing Congress to introduce a joint resolution of disapproval of an agency rule within sixty days after it has been submitted to Congress.\textsuperscript{115} If the president does not veto the resolution, then the rule shall not take effect, either in its original form or in substantially similar form.\textsuperscript{116} This legislative authority has been used sparingly. As of the end of 2008, Congress invalidated only one of the some 50,000 final rules submitted to it since the Congressional Review Act’s

\textsuperscript{112} Copeland, supra, at 7-10.

\textsuperscript{113} Id.

\textsuperscript{114} See 5 U.S.C. § 551 et seq. (specifying informal rulemaking procedures). In some cases, expedited rulemaking may be possible. See Dudley, supra note, at 10-12.


\textsuperscript{116} 5 U.S.C. § 801(b)(2).
enactment in 1996. As a third technique, Congress may affect non-final rules through language inserted into bills affecting agency appropriations.

Like Congress and the president, the courts have a role in overseeing agency rulemaking. On judicial review, a court may invalidate agency rules on a number of grounds, including cases where a regulation represents an abuse of discretion or an unreasonable or impermissible interpretation of relevant legislation.

B. Acknowledging Risk

Beyond restoring environmentally protective rules, addressing the environmental deficit requires replacement of the dysfunctional and misleading cost-benefit approach. As Chairman Greenspan learned with respect to fiscal models, the entire “intellectual edifice” of risk management models failed disastrously due to the input of unrealistically optimistic data. Applying this lesson to the environment, first-step reform could focus on narrowing the circumstances under which the cost-benefit methodology will be employed. Currently, as critics note, cost-benefit analysis is applied indiscriminately as a “one-size-fits-all technique applied to policy problems as varied as regulating mercury emissions from power plants to the roof strength standard for new automobiles.” Moreover, the analysis has been employed redundantly: first, by

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117 Dudley, supra note 111, at 13 (discussing disapproval of the Occupational Safety and Health Administration’s November 2000 final rule on ergonomics).

118 Id. at 15.


122 See supra note 25 and accompanying text.

123 Shapiro & Schroeder, supra note 82, at 434.
action agencies in the determination of whether or not to promulgate new regulations; and second, by the White House OIRA office, in a politicized review of draft agency rules. The second application is particularly susceptible to abuse. As critics complain, the OIRA review “has served mainly to suppress regulation thought to be excessive.”124 To rectify this problem, OIRA must adopt a new paradigm, one that encourages and supports agencies in their congressionally-mandated missions to protect the environment and the public health, safety, and welfare.125

As a second reform measure, cost-benefit analysis must develop techniques to provide an accurate monetization of environmental benefits. This need was underscored by the Science Advisory Board, in its critique of existing EPA methodology as embodied in its Guidelines. As the SAB explains,

[W]e urge the Agency to vastly expand its guidance on characterizing non-monetized benefits. We recommend that the Guidelines incorporate the concept of ecosystem services and its various components . . . and highlight treatment of ecological systems and services in benefit-cost analysis. Users of the Guidelines should be warned that an inappropriate focus only on impacts that can be monetized can provide misleading policy guidance (as with other cases of asymmetric information).126

At the least, as the SAB urges, the EPA should clarify the limitations of its analysis by labeling its compilation of aggregate monetized benefits as “total monetized economic benefits” rather than “total benefits.”127

124 CPR Letter, supra note 89, at 2.

125 The Center for Progressive Reform argues that “[r]ather than chiding agencies for their alleged excesses,” the OIRA should rescue agencies by “giving them adequate resources to fulfill their statutory mandates, helping them develop strong proactive agendas, and ensuring they receive enhanced legal authority to take decisive action.” Id.

126 Letter from Science Advisory Board, supra note 90.

127 Id. at 15. See also Science Advisory Board, Valuing the Protection of Ecological Systems and Services (2009); Millennium Ecosystem Assessment Synthesis Report (2005).
As an even broader reform, some have suggested that with respect to natural resources, cost-benefit analysis should be replaced with a new analytical approach—the so-called “pragmatic regulatory impact analysis.”128 Under that analysis, agencies first consider whether environmental harm (or anticipated harm) poses a risk sufficient to trigger regulation under applicable statutes.129 If such threshold has been crossed, then agencies should regulate up to the level authorized by Congress, as indicated by such statutory requirements as providing “an adequate margin of safety” or implementing “best” technologies for pollution control.130 Proponents believe that this proposed pragmatic regulatory impact analysis will provide a more accurate assessment of environmental risks, by eliminating cost-benefit’s “emphasis on pinpoint benefit estimates . . . [that] has the effect of hiding the underlying uncertainties in the risk evidence.”131

C. Consuming Sustainably

Reversing the trend of unsustainable consumption will require both legal and cultural change. For almost a half century, Congress has imposed a sustainability mandate upon federal agencies. For example, the National Forest Service must assure that its forest plans conform to principles of “sustained yield,” defined as “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.”132 But that mandate has been weakened in actual practice. Now we must breathe new life

128 See, e.g., Shapiro & Schroeder, supra note 82; CPR Letter, supra note 89, at 6-8/

129 CPR Letter, supra, at 6 (discussing the concept of “risk trigger”).

130 Id. (discussing statutory standards under the Clean Air Act and Clean Water Act, respectively).

131 Id. at 7.

into the commitment to sustainability, recognizing that our very lives may depend upon the success of our effort.

A growing social movement has already begun to lay the cultural groundwork for change. For example, a diverse group of national leaders launched a “new thrift” campaign in 2008, calling for the creation of new institutions to promote a culture of thrift.\(^\text{133}\) Others have called for change at the individual level, such as the “not so big house” movement.\(^\text{134}\) Focusing specifically upon natural resources, the World Wildlife Fund (“WWF”) has issued a call to turn the tide and work toward sustainability.\(^\text{135}\) In an attempt to bring down the globe’s “ecological debt”—the amount by which our demand for environmental resources exceeds or overshoots the earth’s biological supply—the WWF has broken down the “overshoot” into smaller, manageable “sustainability wedges.”\(^\text{136}\) The wedges suggest workable strategies to address the environmental deficit in areas such as energy conservation, vehicle efficiency, population growth, and overconsumption.\(^\text{137}\)

CONCLUSION: TOWARD A PARADIGM OF THRIFT

The economic lessons discussed in this Essay point toward thrift as a long-term antidote to the financial crisis. An interesting array of forces have embraced this notion, offering hope that the parallel call for reducing the environmental deficit through thrift may fall upon fertile cultural soil. Prominent among these


\(^{134}\) See SARAH SUSANKA, THE NOT SO BIG HOUSE: A BLUEPRINT FOR THE WAY WE REALLY LIVE (Taunton Press, 10th anniversary ed. 2008).

\(^{135}\) World Wildlife Fund, supra note 102, at 22.

\(^{136}\) Id. at 23, Figures 33 (gap between supply and demand) and 34 (sustainability wedges).

\(^{137}\) Id. at 22-29.
forces is the non-profit, non-partisan Institute for American Values and its “For a New Thrift” campaign.\textsuperscript{138} Other support for thrift comes from less-expected sources, such as the economically flailing Citigroup. Launching a new credit card that rewards good behavior under the slogan “I am Generation Forward,”\textsuperscript{139} Citigroup neatly links the economic and environmental crises, calling upon the next generation to behave thriftily and responsibly:

\begin{quote}
I am Generation Forward.
I look not backward, but forward.
I reject the selfish ways of the past.
The environment, the economy, our very security ...

I believe in sharing the wealth, spreading the peace, helping the unfortunate, recycling, alternative energy sources, exercise, eating healthy, giving back, spending wisely and setting a good example.

I believe in good design, keeping my word, paying on time, using the Internet instead of paper and fiscal responsibility.\textsuperscript{140}
\end{quote}

The tsunami has hit.\textsuperscript{141} The culture is churning. The day of reckoning has arrived.\textsuperscript{142} Who knows? As early signs suggest, perhaps the reckoning will take

\textsuperscript{138} See supra note 133 and accompanying text. Some have likened the 2007 financial crisis to a “near-death experience,” triggering the resolve to change bad behavior such as Wall Street’s reduction of debt relative to equity, or “deleveraging.” See Geoff Colvin, A Return to Thrift: Main Street Should Follow Wall Street’s Example When it Comes to Deleveraging, CNNMONEY.COM, Oct. 30, 2008, available at http://money.cnn.com/2008/10/29/magazines/fortune/thrift_colvin.fortune/index.htm?postversion=2008103005 (arguing that “Main Street should be deleveraging too).

\textsuperscript{139} The irony of this new campaign was not lost on commentators. One asserted, “Citigroup—the mega-bank that managed its own finances so badly that it has required three taxpayer bailouts totaling at least $45 billion so far—is preaching fiscal responsibility to young people.” Vindi Goel, Citi Urges MySpace Users to Spend Wisely, NEW YORK TIMES, MAR. 6, 2009.


\textsuperscript{141} See supra note 16 and accompanying text.
the form of a new culture of thrift to address both the fiscal and environmental deficits.

142 See supra note 109 and accompanying text.
## APPENDIX

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<td>Water transfers; Exempts certain contaminated wastewater from Clean Water Act permitting requirements</td>
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<td>70,418 (Nov. 20, 2008)</td>
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<td>Solid waste; Weakened definition of “solid waste” subject to regulatory requirements</td>
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