THE OPPONENT

In the 1980s, Bill McKibben became one of the first journalists to warn of the perils of climate change. Since then he has parlayed his extensive environmental writing and the reach of digital media into a grassroots campaign against the fossil fuel industry, the Keystone XL pipeline in particular. How did this writer-turned-activist become the bane of the Canadian oil patch? And what is his vision for the future?

HOW
BILL McKIBBEN
CHANGED
ENVIRONMENTAL
POLITICS
AND TOOK ON
THE OIL PATCH

BY MATTHEW C. NISBET

On a cold day this past February on the National Mall in Washington, DC, an estimated 30,000 people gathered to protest the Keystone XL pipeline, the controversial project intended to link the Alberta oil sands in Canada with Gulf of Mexico refineries and distribution centres in the United States. "All I ever wanted to see was a movement of people to stop climate change," declared activist Bill McKibben, addressing the crowd from a stage. "And now," he told them, "I've seen it."

McKibben's oil patch opponents in Canada may have derided the size of the crowd as smaller than expected, but the turnout was only a partial demonstration of the power this writer turned environmental activist has amassed against them. Through his writing and his grassroots activist organization 350.org, targeting fossil fuel industries, McKibben has emerged as a major obstacle for those in the Canadian government and oil sands industry who see the pipeline as key to getting the Alberta product to global markets.

He has melded his long, personal struggle to sound the alarm against the perils of climate change with pioneering methods of social protest, combining traditional face-to-face organizing strategies with the potency of social media and the storytelling ability of a bestselling author. In the process, McKibben has become the most visible environmental activist in the United States, redefining the way environmental groups practise politics and extending his influence into one of the biggest issues in Canada.

McKibben's journey from writer to movement leader started in 1989, when he was still in his 20s and published *The End of Nature*, recognized as the first popular book about climate change. In it, he warned that humans had become the "most powerful source for change on the planet," a potentially catastrophic achievement that marked an end to our traditional understanding of nature.

Climate change, unlike other environmental problems, was not conventionally solvable; our best hope was to avert the most devastating impacts, McKibben wrote. Yet he was deeply skeptical of technological approaches to the problem. The only possible path to survival, he argued, was through a fundamental reconsideration of our worldviews, aspirations and life goals and the creation of a new consciousness that would dramatically reorganize society, ending our addiction to fossil fuels, economic growth and consumerism.

The End of Nature established the core audience, themes and focus for almost all of McKibben's subsequent books and writing. Over the past two decades, he has paired his books with 10 to 20 magazine articles and major newspaper opinion pieces annually — and more recently dozens of blog posts — all aimed at warning a mix of environmentalists, college students, liberal baby boomers, outdoor enthusiasts and progressive Christians about the dangers of carbon-fuelled economic growth.

The audiences he cultivated over the years with his books and magazine articles not only increased his profile as a public intellectual, they also formed part of the grass-

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Grassroots power: McKibben says traditional environmental groups have lost their way.
PHOTO: STEVE LIPTAY

roots activist base for the organization he founded in 2008, 350.org (the name was derived from the amount of carbon dioxide in the atmosphere — measured in parts per million — that the NASA scientist James Hansen regards as the safe upper limit for the planet). As he told the *Guardian* newspaper in 2010: "I think my assumption when I was 27 was that explaining rationally all the trouble we're in would be sufficient, and that politicians and whoever would act. I'm older now and I think I've come to understand a little more clearly that we're going to need to build some power if we're going to mount a serious challenge."

Or, as he told the *Atlantic* in the same year, "We assumed that because scientists had said the world was coming to an end that that would be enough to motivate our political system to act. As it turns out, that's not how politics works. You need to meet power with power."

McKibben as societal storyteller, explainer and advocate is not

unique. He is part of a special class of writers and journalists who, as public intellectuals, have gained prominence and influence over the past two decades. Rather than straight reporting of events, these "knowledge journalists" specialize in the translation of complex subjects, often also championing specific policy positions or causes.

Knowledge journalists in popular discussion remain loosely identified as celebrity authors who trade in big ideas, coin trends, drive book sales and inspire movements. Leading contemporary examples include the *New York Times* columnist David Brooks (author of *The Social Animal*), CNN/*Time* magazine's Fareed Zakaria (*The Post-American World*), the *Nation*'s Naomi Klein (*The Shock Doctrine*) and University of California journalism professor Michael Pollan (*The Omnivore's Dilemma*). Yet the members of this new class of public intellectuals are also criticized for imposing their point of view; for lacking specialized credentials, or for reducing explanations to a single idea, theory or field. Sometimes, as in McKibben's case, they are accused of blurring the lines between journalism and activism.

In the digital media landscape, however, highly motivated individuals can consume, contribute, recommend, share and comment on their preferred topics across preferred media outlets and platforms. This makes it very easy for an ideologically minded audience to follow only sites or blogs that reflect and confirm their opinions. They often prefer writers who advocate for their cause.

Meanwhile, specialized, not-for-profit news organizations, such as InsideClimateNews.org, which won a Pulitzer Prize for its coverage of a 2010 pipeline oil spill in Michigan's Kalamazoo River, are emerging as important complements to traditional news organizations. Yet these foundation-funded operations also raise new questions about the boundaries between reporting and advocacy. One of the main backers of InsideClimateNews, for example, is the Rockefeller Brothers Fund, which describes its mission as advancing "social change that contributes to a more just, sustainable, and peaceful world." It also funds McKibben's 350.org.

McKibben has masterfully navigated this online media ecosystem through frequent contributions to the *Huffington Post*, TomPaine.com, Grist.org and other left-leaning Web sites. Similarly, his efforts on behalf of 350.org are frequently covered and discussed on these outlets and others such as InsideClimateNews and *Mother Jones* magazine. Over his career, McKibben has also been a regular contributor to a host of environmental, outdoors and religious magazines. The fragmented nature of online news that leads news organizations to focus on driving traffic to specific stories by way of search engines, aggregators and social networks heightens the prominence of popular knowledge journalists like McKibben.

Similarly, these dynamics can transform the original analysis or perspective offered by knowledge journalists from a piece of journalism into a noteworthy, if pseudo, event. McKibben has been able to use niche media to engage readers already concerned about climate change, even as it becomes increasingly difficult to capture the wider public's attention for the problem, or to shift conservative-leaning news consumers away from media sources in the other ideological silo that reinforce their doubts about the science of climate change.

Yet knowledge journalists probably have their greatest impact on what political scientist Amitai Etzioni calls in a 2006 book "communities of assumptions," the shared worldviews and mental models that shape the judgments of experts, political insiders and other journalists. These assumptions "serve as the frameworks that influence the ways numerous specific public and private policies are received and evaluated," writes Etzioni. Ideologically aligned media offering self-confirming narratives delivered by trusted public intellectuals make it all too easy for experts and political insiders to retreat on an issue into the comfort of an echo chamber.

Making matters worse, in the climate change debate, the advertising, public relations and lobbying strategies of powerful fossil fuel companies have manufactured doubt in the public realm about the reality of man-made climate change. Along with conservative allies, they have exaggerated the economic costs of action, ridiculed environmentalists, intimidated scientists and manipulated the use of scientific expertise in policy-making.

Because of its incredibly complex nature and political divisiveness, climate change today "has more potency…as a mobilising idea than it does as a physical phenomenon," argues scientist Mike Hulme in *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity*. "We won't understand climate change through science and economics alone," he writes. "We need to understand the ways in which we talk about climate change, the variety of myths we construct, and through which we reveal to ourselves what climate change means to us."

Born in 1960, McKibben attended high school in Lexington, Massachusetts, where he wrote for the local newspaper and was a state champion debater. When McKibben's father was arrested in 1971 at a protest in support of the right of Vietnam Veterans Against the War to assemble on the town green, the event left an impression on his 10-year-old son. He was "furious that he wasn't allowed to be arrested with his father," McKibben's mother told the *Boston Globe* in 2012. "It really had an impact on him. It taught him that you stand up for what you believe."

At Harvard, McKibben's "leftism grew more righteous," he wrote in a 1996 essay. He worked on many causes, but none felt truly his own. McKibben balanced his activism with his passion for journalism, serving as editor of the *Harvard Crimson* newspaper. On election night in 1980, McKibben "got grimly drunk," spending the next day in bed before waking to write a 3,000-word essay that "defined the ground

I'd cover in the years to come." Ronald Reagan's victory was "the choice for a kind of pretend America where we would agree that we didn't have to face limits, change any habits," he later recalled.

After graduating from Harvard in 1982, McKibben joined the *New Yorker*, spending the next five years living in New York, sharing an apartment with film critic David Edelstein, putting most of his money in the bank and limiting his personal belongings. "He's always been other directed," Edelstein told *Outside* magazine in 2012. "Almost as if it would be unseemly to dwell on his own problems." Edelstein recalled that McKibben was tear-gassed during a protest against a nuclear power plant. "He was attracted to nonviolent resistance. He used to hand out pamphlets outside the theater where *Gandhi* was showing. He thought it was the best movie he'd ever seen."

He also contributed short political essays for the "Notes and Comment" section of the magazine, modelling his work after that of fellow staff writer Jonathan Schell. In his 1982 book *The Fate of the Earth* and other works, Schell warned of the risk of a nuclear holocaust, serving as an inspiration to the nuclear disarmament movement. "It was from him that I learned how great reporting could produce critical thinking," recalls McKibben. "It was a liberating reprieve from the twin straitjackets of 'objective reporting' and 'punditry.'"

For a story on the homeless, his editor urged him to live on the street, where he met his wife, Sue Halpern, a former Rhodes Scholar and writer who was working as an advocate for the homeless. McKibben quit the *New Yorker* in 1987 and moved with Halpern to the Adirondack Mountains in upstate New York. Working as a freelancer, he spent considerable time hiking, skiing and watching wildlife. At the suggestion of his wife, McKibben studied the Book of Job from the Hebrew Bible. The story of Job, wrote McKibben in a later essay, delivers the moral lesson that "man is not at the center of all things." Job resonated with his experience "living on the edge of the wilderness," and with the philosophical writings of the deep ecologists that he admired. From this he concluded in *The End of Nature* that "we may not judge everything from our point of view — that all nature is not ours to subdue."

Yet nature, McKibben discovered, was changing. "I'd begun reading the occasional reference to something called the 'greenhouse effect,'" he recalled in 2008. "The more I studied what little science was available, the harder I was hit by the realization that the world I had suddenly woken up to was just as suddenly in mortal danger."

For decades, scientists had been studying climate change, then more commonly called global warming or the greenhouse effect. But scholars point to 1988 as the year that climate change as a social problem became a part of national discussion. Record early summer heat generated stories about the greenhouse effect as a cause. These claims gained greater legitimacy when NASA scientist James Hansen testified to the Senate, "We can ascribe with a high degree of confidence a cause-and-effect relationship between the greenhouse effect and observed warming."

McKibben wrote that "the world I had woken up to was in mortal danger."

In December 1988, McKibben published an essay in the *New York Review of Books* detailing the handful of reports and studies on climate change, and a few months later, *The End of Nature* was published. McKibben devotes nearly 80 pages — or 40 percent — of *The End of Nature* to describing this emerging science, careful in most cases to underscore uncertainties where they existed, and drawing parallels to acid rain and ozone depletion. "The science, however, was only one part of the book," wrote McKibben in 2006, "and not the most important." Instead, the science was a warning that humans — through their pollution — had for the first time become "the most powerful force for change on the planet."

McKibben doesn't believe in "smart" growth...Our environment, he says, has "met its match."

Different from other man-made interventions, humans' role in climate change was all pervasive and stretched to every part of the planet. "By changing the weather, we make every spot on earth man made and artificial," he wrote in *The End of Nature*. "We have deprived nature of its independence and that is fatal to its meaning." At risk of disappearing was a "certain way of thinking about God — a certain language by which to describe the indescribable. We can no longer imagine that we are part of something larger than ourselves — that is what this all boils down to."

Society's best hope, explained McKibben, was widespread collective action that would force world leaders to "stabilize" emissions and climate impacts "at some sort of only fairly horrific level," keeping the "temperature increases at 3 or 4 degrees, not 15 or 30." But McKibben cast doubt on technological fixes as a way to get there. He argued against the views of the economist Julian Simon, who predicted that human imagination and knowledge could be relied upon to find solutions to problems like climate change. For McKibben, these views were unrealistically utopian and premised on faith: "Believing in something 'fantastic, impossible, and unbelievable' is an act of hope as much as of reason."

The only moral path to survival, concluded McKibben, was to break out of our "rut, a system of beliefs in which we are trapped," a direction "that is the opposite of the defiant, consumptive course we've traditionally followed." To define this alternative path, McKibben drew on the arguments of the deep ecology movement. For energy, people would start to turn to "appropriate technology," and link their work more directly to their food, returning to farming and agriculture as a livelihood. Developed countries would have to transfer wealth to the developing world, and global population would have to grow gradually smaller, to anywhere from 100 million to 1-2 billion.

In the *New York Review of Books*, historian Daniel Kevles wrote in 1989 that McKibben's book was "part popular science and part poetry, a sensitive and provocative essay of alarm, a kind of song for the wild, a lament for its loss, and a plea for its restoration." But Kevles also found fault with the core argument that ecosystems should take priority over human suffering. "McKibben's eagerness to preserve the inhuman in nature leads him to a position that — perhaps without his realizing it — is inhumane," Kevles wrote.

In the years following *The End of Nature*, McKibben kept writing at a prolific pace, the topics crossing the personal with the political: 1995's *Hope: Human and Wild* advocated on behalf of a new localized politics and economics, relating examples from New England, Brazil and India to "imagine a future vastly different from the present, one where people consume much less and restrain themselves more." *Hundred Dollar Holiday: The Case for a More Joyful Christmas* told of his experience leading a campaign among neighbours and church members to spend less, but get more out of the holiday, "more music, more companionship, more contemplation, more time outdoors, more love." Other books examined the question of overpopulation and warned against the moral perils of gene therapy, cloning, nanotechnology and robotics.

In 2007, McKibben published *Deep Economy: The Wealth of Communities and the Durable Future*, and he followed it in 2010 with *Eaarth: Making a Life on a Tough New Planet*. The first book featured his most extensive, optimistic and hopeful exposition on a different, more rewarding kind of life, detailing the virtues of community, local agriculture and local economies. The second represents the most deeply pessimistic outlook of his career. Just as he had in 1988, McKibben credited James Hansen with catalyzing the shift in his thinking toward a new sense of urgency about climate change. In a 2007 presentation, Hansen explained that he now thought that the "safe" level for carbon dioxide levels was 350 ppm, a level of emissions that had already been crossed. "The day that Jim Hansen announced that number," wrote McKibben, "was the day I knew we'd never again inhabit the planet I'd been born on, or anything close to it."

Eaarth argues forcefully against the well-intentioned assertions by prominent *New York Times* columnist Tom Friedman, economist Jeffrey Sachs and others that "smart" growth and sustainable development are still possible. If major investments in clean energy and societal transformation had been launched decades ago there might be the chance of success, wrote McKibben. But today, he didn't believe that the "growth paradigm can rise to the occasion; I think the system has met its match." As he argued in *Deep Economy*, "our systems and economies have gotten too large," and "we need to start building them back down. What we need is a new trajectory, toward the smaller and more local." In *Eaarth*, he puts this path in more blunt terms, arguing that we "choose instead to try to manage our descent. That we might aim for a relatively graceful decline."

On energy, McKibben agreed that "the fight to slow carbon emissions is so desperate that it's wrong to rule anything out," but the future's "more exciting possibilities lie elsewhere, in

Meeting power with power: Protestors gather in February 2013 at the National Mall in Washington calling on President Obama to reject the Keystone XL pipeline.
PHOTO: CP PHOTO

smaller community-scale power systems." He advocated starting with major improvements in energy efficiency, and then pursuing other options such as requiring every new home to have solar roof tiles and window shutters, scattering windmills across towns and relying on local grids supplemented by small-scale power plants.

Upon its release in 2007, many reviewers praised the optimistic outlook and paradigm-shifting aims of *Deep Economy*. "One of the book's great strengths is that it presses beyond the statistics to imagine a different way of doing things," wrote the *New Yorker*'s Elizabeth Kolbert in the *Boston Globe*. Yet the *Guardian* in January 2008 also called attention to an "American liberal smugness" about *Deep Economy*: "At the heart of the book is the silly idea that we can all…spend six months living sustainably, off local sources of fruit, vegetables, grain and power. The aspiration isn't silly, but few live, like him, in middle-class comfort in some idyllic small town in upper Vermont."

Reviewers were generally more critical of *Eaarth*. "The opening three chapters of the book create an apocalyptic vision that almost begs the question why we should bother trying to reduce

emissions now, and it is only in the final chapter that McKibben offers any glimpses of optimism," wrote economist Nicholas Stern in the *New York Review of Books*. Despite the important sense of urgency conveyed, Stern found McKibben to be "too pessimistic about the ability of the world to respond. Such pessimism can be self-fulfilling."

Stern also found fault with McKibben's views on economic growth. "For billions of people, economic development is the only way out of poverty and McKibben will alienate many with his dismissal of the concept of sustainable growth," wrote Stern. At issue is McKibben's adherence to the *Limits to Growth* thesis, which, according to Stern, underestimates the potential to find substitutes for fossil fuels.

"The assumptions that allowed [the authors of *Limits to Growth*] to claim that growth can, will, and should end are precisely what we must now counter in order to create a low-carbon economy," wrote Stern. To do so, we need to base our understanding on other growth theories "that show that we can invest in discovering and deploying new technologies, that such deployment itself will have strong effects on saving energy, and that technological output and the natural environment are closely bound together."

In February 2005, as a scholar in residence at Middlebury College, McKibben began meeting informally with students to discuss strategies for mobilizing societal action on climate change. Their original plan in 2006 was to lead a march to the Burlington, Vermont, federal building. But after the police informed McKibben that

Knowledge journalists: McKibben is part of a growing class of new public intellectuals who champion specific policy positions and causes.
PHOTO: BY MILAN ILNYCKYJ

they were unlikely to be arrested, they organized instead a 1,000-person, five-day hike.

Their success prompted them in 2007 to organize national "Step It Up" days of action, which they coordinated by way of the Step It Up Web site. The site was similar to MeetUp.com, featuring materials to help individuals organize actions ranging from marches to performance art to bicycle rallies in their communities. The site compiled these events in a searchable database by city and state. To share insight about their new model for organizing, McKibben and his five co-organizers published in 2007 *Fight Global Warming Now: The Handbook for Taking Action in Your Community*.

Changing personal behaviour will not have much of an impact on climate change, argued McKibben and his co-authors: "The change we need is so sweeping and so rapid that only by mobilizing ourselves through our government will we be able to make enough progress in the time we have left." Instead, what is needed, they contend, is political activities that reflect "local affection and local history," since "a sense of place is invaluable for effective organizing and for creating a brighter future."

Yet in *Fight Global Warming Now,* McKibben and his co-organizers also warned that effective action would come only through "real-life, on-the-ground affairs, with neighbors coming together in the flesh to demand change. We feel strongly that the Internet is best used to get people together face-to-face. Too many organizations have put a blind faith in the Internet, thinking that simply having a basic online presence will immediately transform their group to a cutting-edge miracle of advocacy and activism." He argued that traditional methods of political negotiation and compromise pursued by organizations like the Environmental Defense Fund have failed and are no longer capable of achieving the rapid societal transformations that are urgently needed.

The success of Step It Up led to the creation in 2008 by McKibben and his co-organizers of 350.org. The main goal was to use Internet-enabled organizing strategies to increase the intensity of political activity among those already deeply concerned about climate change. In targeting this segment, McKibben was appealing directly to the base of readers and fans he had built up over the past 20 years.

In August 2011, 350.org and their allies mobilized activists to protest in front of the White House, and more than 1,200 participants were arrested. They followed in November by turning out an estimated 15,000 activists who encircled the White House in a last push to convince President Barack Obama to reject the pipeline. Later in February 2012, after Obama had delayed the decision until 2013, the Senate took up legislation revisiting the pipeline. In response, McKibben and 350.org joined with other environmental groups to generate more than 800,000 messages to senators, an effort that aided the defeat of the bill.

On his influential *New York Times* Dot Earth blog, Andrew Revkin has been critical of McKibben's effort, arguing in 2011 that the relevance of the Alberta tar sands to climate change is "far less significant than some claim, particularly given the reality that oil consumption rates are what matters — not the amount of gigatons of carbon sitting in deposits of this sort in the ground." He wrote that while the issue is "a potent symbol and convenient rallying point for campaigners, it's a distraction from core issues and opportunities on energy and largely insignificant if your concern is averting a disruptive buildup of carbon dioxide in the atmosphere."

In a 2012 profile of McKibben in *Outside* magazine, Revkin said he considered McKibben "an incredible organizer and motivator, particularly for young people. But we've drawn different conclusions about several important aspects of the science and approaches to getting traction on related energy issues. I prefer 350's days of action to its focus on a number, which I think doesn't have sufficient meaning unless it's accompanied by '350 when' and '350 how.'" At his blog, Revkin noted that he respected McKibben's and James Hansen's choice to protest the pipeline, but "I haven't joined them because — while I would love to see America and the world cut oil appetites – I see more promising routes to meaningful progress on that front." Such a plan, he wrote, would involve President Obama incorporating the "need for more domestic energy exploration and development (done responsibly) with a long-term plan that also stresses conservation, efficiency and innovation."

Along with opposition to the XL pipeline, McKibben in 2012 turned his focus to pressuring universities and other institutions to divest their financial holdings from fossil fuel companies, a campaign that draws direct parallels to the anti-apartheid movement. In this case again, McKibben used his influence as a prominent journalist and public intellectual to catalyze a new movement aimed directly at college students, contributing a 6,000-word article to the August 2012 issue of *Rolling Stone* magazine that warned of "Global Warming's Terrible New Math."

McKibben cited a 2011 analysis by the Carbon Tracker Initiative, which estimated that the proven oil, gas and coal reserves of fossil fuel companies and countries like Kuwait or Saudi Arabia was 2,795 gigatons, or "five times as much oil and coal and gas on the books as climate scientists think is safe to burn. We'd have to keep 80 percent of those reserves locked away underground to avoid that fate," warned McKibben.

"Given this hard math, we need to view the fossil-fuel industry in a new light," he argued. "It has become a rogue industry, reckless like no other force on Earth. It is Public Enemy Number One to the survival of our planetary civilization." Drawing comparisons to the anti-apartheid effort, McKibben urged a mass movement pressuring universities, colleges, churches and local governments to divest their holdings in fossil fuel companies.

Building on this attention, in November 2012, McKibben and 350.org launched the "Do the Math" tour,

visiting 21 cities to encourage attendees to call on their colleges, churches and local governments to divest from fossil fuel companies. "During the 1980s, 155 schools came out against the South African apartheid, and so we're modeling a lot of what we're doing now on that," Jamie Henn of 350.org told the *Guardian* in February 2013. "So, it made perfect sense for us to start with universities, as these institutions have a special responsibility to make their investments live up to their missions. Many have publicly committed to sustainability and solving the big issues of the day, yet many are still putting tens of millions of dollars into companies that are wreaking havoc on the planet."

It is too early to assess the full impact of McKibben's divestment campaign. As of February, 350.org claimed that students at more than 200 campuses across the country had pressured their institutions to divest from fossil fuel industries, with the most intense efforts occurring at smaller Northeastern colleges. Perhaps most notably, the city of Seattle announced that it would divest its $2-billion retirement fund. And Harvard University announced it was setting up a "social choice fund" separate from its endowment, where donations to the fund would be invested "in one or more external mutual funds that take special account of social responsibility considerations."

Despite the visibility and early success of the Do the Math tour, Cary Krosinsky, co-founder of the Carbon Tracker Initiative, has raised concerns about the campaign's overall strategy. In a 2012 blog post at GreenBiz.com, he argued that there were few social-

A new sense of urgency: James Hansen, American climate scientist, proposes that safe levels of carbon dioxide emissions have already been crossed.
PHOTO: CP PHOTO

ly responsible mutual funds fully divested from fossil fuel companies. Similarly, in the Web magazine *Ensia*, veteran business journalist Marc Gunther noted in 2013 that those few "deep green" investment funds that were likely to be fossil fuel free offer lower returns on investments than traditional investment options. These deep green funds might become more competitive if governments started to take action to regulate emissions from fossil fuel sources, but until then, investors would have to accept greater risks and lower returns.

As Krosinsky concluded in weighing investment options, at issue was a "severe systemic problem, one that requires really serious conversations, scenario analysis and consideration. Let's stop with the flag-waving and finger-pointing, roll up our sleeves and figure out what we really should be doing." A more significant driver of change, he argued, would be for students to advocate for a positive approach to investing that rewarded clean energy companies: "What if universities, as well as teachers and their pensions, combined to invest en masse in the clean-tech technologies and infrastructure of tomorrow? This would be a worthy movement."

Unlike conventional environmental threats like smog or acid rain, climate change is more accurately defined as a "wicked problem," the product of multiple social, ecological and technological systems that are difficult to define, have no clear solution and are seemingly intractable, often plagued by chronic policy failures and intense disagreement. Like poverty or ethnic and religious conflict, climate change is not something likely to be solved, eliminated or ended, but rather a condition that society will struggle to do better or worse at in managing.

That awareness drives another group of public intellectuals, who argue for a course of action on climate change that differs in fundamental ways from that advocated by McKibben. These authors, and thought leaders like Tom Friedman and Jeffrey Sachs, tend to agree that limits to growth should be respected, but they also assume limits can be stretched if the right policies are adopted, enabling environmentally sustainable development to continue indefinitely. They advocate increasing the cost of carbon-based energy through "pricing mechanisms" like cap-and-trade legislation or a carbon tax so that solar, wind and other renewables become more competitive and industries more energy efficient. In this, business leaders and industry are viewed as valuable partners, and action on climate change defined as potentially profitable.

To be sure, McKibben and those like Thomas Friedman in the green growth tradition share many of the same goals, endorsing at times similar policies. McKibben has joined growth advocates in urging passage of strong national climate change legislation that would set a clear price on carbon, a step that he argues is necessary to influence the choices of China, India and other developing countries.

But critics of McKibben and the pricing mechanism approaches to climate change point out the need to break down the wicked nature of climate change into smaller, interconnected problems, making progress on these smaller challenges more likely. At the international level, examples include reducing especially powerful greenhouse gases like black carbon (or soot) from diesel cars and dirty stoves, and methane from leaky gas pipes. A similar strategy focuses on slowing the rate of deforestation. In contrast to endless international summits, these goals can be pursued through bilateral negotiations with specific countries like Indonesia, China, India or Russia.

"If we pursue the route of seeking ever larger and grander solutions to climate change we will continue to end up frustrated and disillusioned," warns Hulme in *Why We Disagree about Climate Change*. "Global deals will be stymied, science and economics will remain battlegrounds for rearguard actions, global emissions will continue to rise, and vulnerabilities to climate risks will remain."

Some of McKibben's critics see business leaders as partners in the fight against climate change.

As alternatives, Hulme points to the framework put forward by Gwyn Prins of the London School of Economics, Oxford University's Steve Rayner and others, who argue that climate change requires a portfolio of "clumsy" policy solutions, implemented across levels of government and through the private and nonprofit sectors.

In the United States, carbon dioxide emissions from power plants dropped in 2011 from the previous year's level, a decline driven by the revolution in natural gas drilling, which has shifted energy production away from coal and toward cleaner-burning natural gas. A recent analysis by the Clean Air Task Force argues that Obama can meet his administration's goals for reducing US greenhouse gas emissions without the need for major legislation. These strategies include finalizing Environmental Protection Agency rules on emissions from new power plants, proposing limits on existing power plants and aggressively regulating methane leaks and environmental risks from natural gas drilling.

Pursuit of more incremental policy approaches can benefit from the grassroots pressure generated by 350.org. Yet today, McKibben and his allies appear to have little tolerance for political pragmatism, as they voice extreme dissatisfaction with Obama's track record on climate policy. McKibben's work as an advocate risks distracting from progress on the problem. The controversy over the XL pipeline is a leading example, as the editors at the respected science journal *Nature* and others have argued.

sion of societal change, detailed first in *The End of Nature* and most recently in *Deep Economy* and *Eaarth*.

In this pastoral future free of consumerism or material ambition, Americans would rarely travel and experience the world instead via the Internet; grow much of their own food; power their communities through solar and wind; and divert their wealth to developing countries. McKibben's romantic vision of a New-England-style utopia seems to have blinded him to alternative approaches that may be not only more effective at curbing greenhouse gas emissions and providing for the material needs of large, diverse populations, but also more politically probable.

McKibben downplays "hard" technological approaches like nuclear energy or carbon capture and storage.

Having spent months studying McKibben's books, writing and career, I hold a deep admiration for his ability to convey the urgency of climate change and to articulate a better approach to life that includes more time for family, reflection and nature. His work as an activist is equally impressive. From his start in 2006, working with a handful of college students, to his leadership today of 350.org, McKibben has helped shift the US environmental movement from an almost exclusive focus on insider lobbying, legal strategies and think-tank-style influence to focus greater resources on grassroots organizing and mobilization.

Yet as a public intellectual, McKibben has failed to offer pragmatic and achievable policy ideas. Instead, reflecting his intellectual roots in the deep ecology movement, McKibben's goal has been to generate a mass consciousness in support of limiting economic growth and consumption, with the hope of shifting the United States toward localized economies, food systems and "soft" energy sources. I wonder how many of the people turning out to protest the Keystone XL pipeline, working on behalf of divestment, or following along on Twitter and Facebook are aware of McKibben's long standing vi-

McKibben is perhaps at even greater fault for downplaying the need for "hard" technological approaches like nuclear energy or carbon capture and storage, and focusing instead on "soft" technologies like solar, wind and efficiency. His favoured technologies are unlikely to alter the dynamics of fossil-fuel energy use and dependency worldwide. Consider that globally, an estimated 1,200 coal power plants are scheduled for construction, three-quarters of them in China and India. Compounding the challenge, according to University of Manitoba energy analyst Vaclav Smil in his 2010 book, solar and wind energy sources are unlikely to be able to overcome the problems of intermittency, storage capacity and cost, and to be scalable in time to compete with coal power worldwide.

In other words, innovative technologies are needed that can not only power the mega-cities of Asia but also limit emissions from the thousands of coal plants already in place and scheduled to be built around the world. In advocating for nuclear energy, even McKibben's long-time inspiration Hansen is blunt, saying on his Web site in 2011: "Suggesting that renewables will let us phase rapidly off fossil fuels in the United States, China, India, or the world as a whole is almost the equivalent of believing in the Easter Bunny and Tooth Fairy."

In this case, it is useful to see the contrast between McKibben and environmentalists like Stewart Brand and Mark Lynas, who have urged their peers to adopt a new outlook on technological innovation. Sharing many of the same political aims as McKibben over the course of his career, Lynas has developed a very different perspective about technology and humans' relation to nature. In his most recent book, *The God Species: How the Planet Can Survive the Age of Humans*, Lynas argues that "we cannot afford to foreclose powerful technological options like nuclear, synthetic biology and [genetic engineering] because of Luddite prejudice and ideological inertia."

In a recent essay titled "Wicked Polarization," Michael Shellenberger and Ted Nordhaus describe progress on climate change and similarly complex social problems as obstructed by experts and public intellectuals who have "come to frame virtually every national problem as a consequence of the irrationality, ignorance, and immorality of the political Other." In this light, arguments for action on climate change that evoke idealized visions of small-scale, hyperefficient agrarian communities powered by wind and solar reflect the priorities and values of environmentalists like McKibben, rather than a pragmatic set of choices designed to effectively manage the problem and align a diversity of political interests in support of compromise.

"The problem is not that we are in a post-truth age but rather that we have not learned to adapt to it," Shellenberger and Nordhaus write. "Perhaps a good place to begin is by recognizing our own biases, perspectives, and agendas and attempting to hold them more lightly. Bringing an end to our ideological arms race will ultimately require that we force partisans out of their comfort zone by redefining those problems in ways to which partisans do not already know the answers."

McKibben's activism is now expanding into a divestment campaign.
PHOTO: SHUTTERSTOCK

As a complement to activists like McKibben — and to the powerful voice of his oil patch opponents — we urgently need to bridge these polarized narratives around climate change. In our digital, algorithmic media culture we must find ways to hear each other, to listen as well as test our assumptions. And that begins by accepting that total victory for a single point of view is unachievable. "There is no kumbaya moment," argued New York University's Jay Rosen in a 2012 speech outlining ways to improve media coverage of wicked problems like climate change. "You never get everyone on the same page. What's possible is a world where different stakeholders 'get' that the world looks different to people who hold different stakes." The question that the Bill McKibbens pose to us, then, is not whether our fate lies in a choice between a mythologized pastoral past and apocalyptic visions of the future. It is whether our new media culture can be a path to the understanding of others, or force us even deeper into our ideological bunkers. ■