

and Peter Essick, "Wilderness: America's Land Apart," *National Geographic* (November 1998). Indeed, the Bush administration has continued to propose opening the ANWR to oil drilling, most recently in the 2005 budget proposal put before Congress early in 2004. In addition, in January 2004, Interior Secretary Gale Norton approved a plan to open a large portion of Alaska's North Slope, just west of the ANWR, to oil drilling. Given the rapid rise in gasoline prices in spring 2004, these plans may prevail.

ISSUE 9

Should Society Act Now to Forestall Global Warming?



YES: George Marshall and Mark Lynas, from "Why We Don't Give a Damn," *New Statesman* (December 2003)

NO: Stephen Goode, from "Singer Cool on Global Warming," *Insight on the News* (April 27, 2004)

ISSUE SUMMARY

YES: George Marshall and Mark Lynas argue that despite a remarkable level of agreement that the threat of global warming is real, human psychology keeps us "in denial." But survival demands that we escape denial and seek more positive action.

NO: Long-time anti-global warming spokesman Fred Singer argues in an interview by Stephen Goode that global warming just is not happening in any significant way and if it were, it would—judging from the past—be good for humanity.

Scientists have known for more than a century that carbon dioxide and other "greenhouse gases" (including water vapor, methane, and chlorofluorocarbons) help prevent heat from escaping the earth's atmosphere. In fact, it is this "greenhouse effect" that keeps the earth warm enough to support life. Yet there can be too much of a good thing. Ever since the dawn of the industrial age, humans have been burning vast quantities of fossil fuels, releasing the carbon they contain as carbon dioxide. Because of this, some estimate that by the year 2050, the amount of carbon dioxide in the air will be double what it was in 1850. By 1982 an increase was apparent. Less than a decade later, many researchers were saying that the climate had already begun to warm. Now there is a strong consensus that the global climate is warming and will continue to warm. There is less agreement on just how much it will warm or what the impact of the warming will be on human (and other) life. See Spencer R. Weart, "The Discovery of the Risk of Global Warming," *Physics Today* (January 1997).

The debate has been heated. The June 1992 issue of *The Bulletin of the Atomic Scientists* carries two articles on the possible consequences of the greenhouse effect. In "Global Warming: The Worst Case," Jeremy Leggett



says that although there are enormous uncertainties, a warmer climate will release more carbon dioxide, which will warm the climate even further. As a result, soil will grow drier, forest fires will occur more frequently, plant pests will thrive, and methane trapped in the world's seabeds will be released and will increase global warming much further—in effect, there will be a “run-away greenhouse effect.” Leggett also hints at the possibility that polar ice caps will melt and raise sea levels by hundreds of feet.

Taking the opposing view, in “Warming Theories Need Warning Label,” S. Fred Singer emphasizes the uncertainties in the projections of global warming and their dependence on the accuracy of the computer models that generate them, and he argues that improvements in the models have consistently shrunk the size of the predicted change. There will be no catastrophe, he argues, and money spent to ward off the climate warming would be better spent on “so many pressing—and real—problems in need of resources.”

Global warming, says the UN Environment Programme, will do some \$300 billion in damage each year to the world economy by 2050. In March 2001 President George W. Bush announced that the United States would not take steps to reduce greenhouse emissions—called for by the international treaty negotiated in 1997 in Kyoto, Japan—because such reductions would harm the American economy (the U.S. Senate has not ratified the Kyoto treaty). Since the Intergovernmental Panel on Climate Change (IPCC) had just released its third report saying that past forecasts were, in essence, too conservative, Bush’s stance provoked immense outcry.

According to the IPCC (see *Climate Change 2001* [IPCC, 2001], available at <http://www.ipcc.ch/>), climate warming is already apparent and will get worse than previous forecasts had suggested. Sea level will rise, ice cover will shrink, rainfall patterns will change, and human activities—particularly emissions of carbon dioxide—are to blame. Writers, such as Stephen H. Schneider and Kristin Kuntz-Duriseti (“Facing Global Warming,” *The World & I* June 2001), pull no punches: “Nearly all knowledgeable scientists agree that some global warming is inevitable, that major warming is quite possible, and that for the bulk of humanity the net effects are more likely to be negative than positive. This will hold true particularly if global warming is allowed to increase beyond a few degrees, which is likely to occur by the middle of this century if no policies are undertaken to mitigate emissions.”

In the following selections, environmentalist writers George Marshall and Mark Lynas argue that despite a remarkable level of agreement that the threat of global warming is real, the human tendency to respond first to short-term, simple threats prevents us from acting. Unfortunately, the threat is so great that without action, human survival may be at stake. Professor Fred Singer argues that although humanity is producing greenhouse gases, there is little evidence that global warming is happening in any significant way and if it were, it would—judging from the past—be good for humanity. Those who promote the “global warming scare” are environmentalist ideologues.

**George Marshall and
Mark Lynas**



Why We Don't Give a Damn

With [the] year's United Nations climate jamboree about to get under way in Milan, it's the season for politicians from around the world to express their heartfelt concerns about global warming. Every scientific institution and national government in the world now endorses the conclusions of the UN's Intergovernmental Panel on Climate Change (IPCC) that global warming is a major threat to the planet's future. Few international issues generate so much agreement.

Yet with the Kyoto Protocol still in limbo thanks to US and Russian intransigence, the conference is taking place in a political no man's land. The international process that began in 1992 at the first Earth Summit has yet to bear significant fruit. Despite plentiful proposals for windfarms, solar panels and hydrogen cells—enough to fill many glossy brochures—the grim reality is that the use of fossil fuels increases relentlessly, and with it the atmospheric concentration of greenhouse gases. So why are we proving so utterly incapable of facing up to the challenge?

First, let us remind ourselves of the magnitude of the threat. Global warming is already well under way: even if all greenhouse gas emissions stopped tomorrow, we would see a rise in planetary temperatures of 1.1°C, twice the warming experienced over the past century, and enough to wipe out most of the world's tropical coral reefs as well as a good proportion of mountain glaciers. Bad as that is, it is still an unrealistically optimistic scenario. It is projected that greenhouse gas emissions will go on rising for decades; the IPCC predicts a global temperature rise of between 1.4° and 5.8° by 2100. At the lower end of this scale, large areas of agriculturally productive land will be destroyed; entire countries will disappear through rapid sea-level rise; and entire regions in the arid subtropics will become uninhabitable.

The financial impact of this, according to Munich Re, the world's largest reinsurer, will run at more than \$300 [billion] a year by 2050, while the IPCC estimates that the cost to Europe of climate change at the “moderate” end of its predictions will be \$280 [billion] a year.

Some free-market sceptics argue that such costs can be regarded as a containable tax on economic growth. But while rich countries benefit from the growth, the “tax” falls most heavily on the poorest peoples. And according to Munich Re, the cost of climate change is growing two to three times faster than the global economy that pays for it.

From *The New Statesman*, December 1, 2003, pp. 18–20. Reproduced with permission from New Statesman, Ltd.

Greater risks lurk at the upper ends of the IPCC predictions. A global warming episode 250 million years ago wiped out 95 per cent of all species. It took a rise in average global temperatures of only 6° to trigger this catastrophe, which palaeontologists call "the post-apocalyptic greenhouse". The IPCC's current worst-case scenario is 5.8°. One can scarcely imagine a more sombre warning.

The implication is clear: if we do not take immediate action to slash greenhouse gas emissions, we will in effect condemn our children—and all generations that follow—to a permanently impoverished and more threatening world dominated by extreme weather and ecological collapse.

Yet as if in a parallel universe, plans continue to be made for business as usual, with rapid economic growth projected to continue unabated, still largely driven by fossil-fuel energy: oil consumption will increase by 50 per cent over the next two decades. Some calculations show emissions of countries from the south alone breaking through the safe "corridor" (within which we could avoid major climate impacts) in as little as a decade.

These dangerous trends continue almost unchallenged. Why? Because we appear to be experiencing a disastrous form of collective denial, more typically found among societies suffering major institutional human rights abuses—such as apartheid South Africa or Nazi Germany—where individuals may understand the reality of the problems, but refuse to accept the implications. In his book *States of Denial*, the sociologist Stanley Cohen terms this condition "implicatory denial" and identifies it as a natural defence that humans tend to adopt when faced with a morally unthinkable situation. It has resulted in, to borrow another term from psychology, "cognitive dissonance" among opinion-formers and the public. Nearly everyone professes to care about global warming while simultaneously continuing with set patterns of behaviour that make the problem worse.

[British Prime Minister] Tony Blair illustrates this well. In Johannesburg [2002] he told delegates to the second Earth Summit: "We know that if climate change is not stopped, all parts of the world will suffer. Some will even be destroyed. It remains unquestionably the most urgent environmental challenge." At the same time, his government does nothing to reverse the growth in road traffic, plans an expansion of airports and promotes development of oil supplies overseas. Moreover, Blair has just helped to deliver the second-largest reserves of oil on the planet into the hands of the most dangerous climate denier of all, the US. Sir John Houghton, an eminent climate scientist, expressed it thus in the *Guardian* recently: "I have no hesitation in describing [climate change] as a 'weapon of mass destruction'."

In showing such a profound disconnection between what he says and what he does, Blair is not demonstrating insanity. His position is all too human. Asked in opinion polls, 85 per cent of the British public say they are concerned about climate change. Yet domestic energy consumption still rises by 2 per cent per year, cars get bigger, and people boast of their holidays to ever-more-distant resorts. Blair, like the rest of us, is in denial.

Even progressive movements and groups have shown only patchy concern. Unions and the socialist left as a whole are suspicious of measures that might affect employment and growth. In the US, unions joined the Christian right in opposing the Kyoto Protocol, while in the UK, development and aid organisations have maintained a baffling silence in the face of a threat that will wipe out most, if not all, of the benefits of their work. Among the major groups, only Christian Aid has called openly for stronger political action on climate change.

Just as odd, those who devote their lives to studying the future manage to miss what is in front of their noses. In *Our Final Century*, a book that examines worrying scenarios for the coming hundred years, Martin Rees, the Cambridge cosmologist, absent-mindedly devotes a mere five and a half pages to climate change, the rest to bio-warfare, genetics and rampaging nanobots. Colin Tudge, in his excellent treatise on global agriculture, concludes his three pages on climate by metaphorically throwing up his hands and hoping for the best. Acknowledging that its effects could be "devastating", he labels global warming "the joker in the pack". But it is not the joker, it's the trump card that could alone negate the rest of his prescriptions for sustainable agriculture.

We have come to dominate the planet through our exceptional ability to anticipate, plan and adapt. Despite an innate selfishness, we have time and again been goaded into action by appeals to our sense of nationhood, responsibility to our children, or our ideas about historical destiny. People willingly lay down their lives to defend cultural identities and religious beliefs. Nor, once a threat is perceived, are we resistant to paying a heavy financial price. Every year, trillions of dollars are spent worldwide on weapons to defend nations against threats that cannot be quantified and are often extremely remote. Even the Y2K computer panic mobilised a \$320 [billion] investment in compliance, and persuaded people to stockpile food and flee the cities.

Why, then, are we paralysed in the face of the climate crisis? The answer lies in our evolutionary heritage: we defend ourselves against specific predators and rival tribes of humans. We are "hard-wired" to mobilise rapidly in response to clear and immediate dangers. But as threats become less certain, or causally complex, it becomes harder to find the urgency to tackle them.

Climate change, unfortunately, matches our evolutionary weaknesses. Not only is it complex, ambiguous and inter-generational, but it is largely self-inflicted. This neutralises our natural tendency to identify as threats rival social groups—whether they be asylum-seekers or rival foreign empires. Clearly, there are degrees of responsibility—the British produce 50 times the quantity of emissions of Bangladeshis, for example. Yet it is impossible to establish direct linkage between one person's sports utility vehicle and another's crop failure. It is hard to blame someone else for a problem we are all causing, hence the almost universal efforts to make global warming fit familiar perpetrator-victim polarities. The south blames the north, cyclists blame drivers, activists blame oil companies, and almost everyone blames George Bush. It's tough to admit that Bush is a victim, too—his children and grandchildren will grow up in the same unstable and devastated world.

WHO'S WHO AMONG THE CLIMATE-CHANGE DENIERS

Biørn Lomborg, a statistician from Denmark, came to media prominence in 2001 with the launch of his book *The Skeptical Environmentalist*. He appears convincing by aggregating voluminous references without subjecting himself to the rigours of the scientific process. He accepts that climate change is happening, but applies a crude and selective cost-benefit analysis to argue that the cheapest option is to maintain economic growth and to adapt to the impacts. He was the guest of honour and award-winner this year at a dinner of the Competitive Enterprise Institute, a far-right US think-tank to which ExxonMobil has donated \$1m since 1998.

Richard Lindzen, professor of meteorology at the Massachusetts Institute of Technology, is the only sceptic with credentials in the relevant area of climate science. His work focuses on atmospheric water vapour, which he claims will act through cloud formation to prevent excessive global warming. There is little evidence to support this hypothesis, which has gained no support from the wider scientific community. He has been a paid consultant to oil and coal interests in the US, and has compared the environmental movement to the Nazis.

Willie Soon and *Sallie Baliunas*, astronomers at the Harvard-Smithsonian Centre for Astrophysics, co-wrote a paper this year challenging the accepted scientific wisdom that the planet is now hotter than it has been for at least a thousand years. The White House and Republican senators loved the message, which supports their denials about human-induced climate change. It transpired that the paper was partly funded by the American Petroleum Institute, and that Soon and Baliunas are scientific advisers to the Marshall Institute, another far-right US think-tank. Three editors at *Climate Research*, which published the paper, resigned when prevented from printing a repudiation.

Philip Stott is Britain's leading climate-change denier and has built a career on criticising environmentalists. Professor emeritus of biogeography at the University of London, he has no climate-science qualifications. A skilled communicator who has written for the *Times* and *New Scientist*, he describes global warming as a "lie". On an advisory board of the Scientific Alliance, an anti-environmentalist campaign group that denies climate change, opposes organic agriculture and promotes genetically modified foods and nuclear power.

Julian Morris, director of the International Policy Network, is also research fellow at the Institute of Economic Affairs, for which he co-wrote a report called *Global Warming: apocalypse or hot air?* He is often in the media, undermining the case for Kyoto. The policy network's "partners" around the world include Tech Central Station (funded by ExxonMobil), General Motors and McDonald's) and the Cambridge-based European Science and Environment Forum, an anti-environmentalist group originally set up for the Philip Morris tobacco company by a PR firm. Philip Morris often accuses environmentalists of inventing the global warming "myth" in order to generate cash.

The complex causality of climate change also plays particularly strongly to the natural human tendency to diffuse responsibility. This is the "passive bystander effect", after the frequently observed phenomenon that violent crimes can be committed in a crowded street without anyone intervening.

This is not a moral failure; it is simply that everyone is waiting for someone else to act first; the more people there are on the scene, the less individual responsibility we feel. In the case of climate change, we are all simultaneously bystanders, perpetrators and victims. These internal conflicts cripple our ability to act, and are only amplified by the vast denial of others. We doubt the reliability of our own instincts, and our power to make any difference.

More profoundly, we simply find it impossible to imagine the globally warmed future. Again, there are good reasons: throughout history, humans have looked to the past to guide future behaviour. From the wisdom of social elders to the courts, we seek precedents. But there is no historical parallel for what is happening. This is the very essence of our denial: while we accept the evidence for climate change intellectually, we reject it emotionally. We find ourselves unable to believe it really, truly exists.

So what options do we have? One vision of the future sees little more than a nightmare of ecological despoliation, mass starvation and perpetual war. "The mass of mankind," writes John Gray in *Straw Dogs*, "is ruled not by its intermittent moral sensations, still less by self-interest, but by the needs of the moment. It seems fated to wreck the balance of life on earth—and thereby to be the agent of its own destruction." If Gray is right, then people will delay taking action until the effects of climate change are severe. Even then, our strongest impulse may be to adapt—tackling droughts with dams, floods with dykes and hurricanes with storm shelters. A fuller response may be triggered only if climate change is converted into a more common struggle between competing "tribes", such as direct conflicts over emissions or, more likely, wars over diminishing environmental resources.

But humans can change behaviour in anticipation of rewards or punishments. The world's religions are founded on this principle. We could transform our lifestyles, but only if we recognise and confront the psychological barriers to major behavioural change. A big shift in world-view is essential, and time is running short.

The social herd instinct may yet be our salvation. Malcolm Gladwell of the *New Yorker* argues in his book *The Tipping Point* that all it takes for an idea to "tip" from the margin to the mainstream is a certain alignment of social factors. The passive bystander effect stops operating as soon as sufficient people break ranks and become involved. It may become "normal" to eschew cars, to shop locally and to consume renewable energy only. This outcome feels remote, but it is up to all of us to escape denial and despair, and seek something more positive. Ultimately, this something is not wealth or power, or even moral purpose: it is survival.

Singer Cool on Global Warming

INSIGHT: When did you first get interested in the question of global warming as an example of bad science?

Fred Singer: My interest in the global-warming scare began about 1988 with the testimony of Jim Hansen (then head of NASA's Goddard Institute for Space Studies) before Sen. Al Gore in a Senate hearing. I looked at his testimony and discovered some holes in it. I published a piece in the *Wall Street Journal* pointing out the weak points in the argument.

Q: What are some of the weak points about the global-warming argument?

A: The fact that they don't properly take into account the effects of clouds in the atmosphere. Clouds will cool the climate rather than warm the climate. When you try to warm the ocean, I argued—and the argument is still sound—you evaporate more water and create more clouds and this reduces the amount of solar radiation. What you have is a kind of negative feedback which keeps the temperature from rising very much.

Q: Why is the disagreement so wide between those who see global warming happening right now and those who don't? What is a nonscientist to make of such a disagreement?

A: Let me explain the origin of this scientific disagreement. There are two kinds of scientists. Let's assume for the moment that both of them are honest. In the first group there are quite a few who argue as follows:

They say "Carbon dioxide in the atmosphere is increasing." It is. Second, they say, "Carbon dioxide is a greenhouse gas." It is. They then say, "Because carbon dioxide is on the increase and it is a greenhouse gas, therefore the climate must be warming." The [mathematical] models support this assumption," they say, "and the models show the climate is warming; therefore evidence that goes contrary to this we will ignore. We will only look at supporting evidence." That's how they are. The other group, of which I am one, says, "This is all true, but as far as we can tell, the climate is not warming as it should be if the greenhouse theory is correct. In fact, the warming is a great deal less than what the models predict. Therefore, something is wrong with the models."

I belong to the latter school, as I say, and what we do is analyze the data. Just now we have a new result. It's been known for a long time that the weather satellites do not show any warming, but the first group tends to neglect this information. They argue that the weather satellites have only been around for 25 years and that's too short a time to tell. It's a specious argument. Or they say there's something wrong with the weather satellites, though they haven't been able to show that there's anything at all wrong with them.

So now we find that not only the weather satellites but also weather balloons, which measure temperature in a completely different way than the satellites, give the same results as the satellites.

Q: The data collected by weather balloons also say there is no global warming?

A: Yes. So now we have a situation in which most of the evidence is showing there is essentially no warming. The first group of scientists is aware of this information, but they tend to ignore it. They say, "Something's wrong with it because it doesn't support our hypothesis, so we will push it aside."

The second group of scientists, of which I am one, says, "There must be something wrong with the first group's models because they don't agree with what we observe and measure." So what you have is one group of people who believe in models or theory and the other group who believe in what they are measuring in the atmosphere! That's the major science issue in a nutshell.

Q: These two groups of scientists also have vast differences when it comes to policies that should be developed to deal with the increase of carbon dioxide in the atmosphere, don't they?

A: Well, yes. As far as policy goes, the first group of scientists says, "Even if we don't see any warming, nonetheless, assuming the theory is right, there should be a warming given the increase in carbon dioxide. And we had better do something about it!" It's called the precautionary principle. As the culture puts it, "Better safe than sorry."

But the first group of scientists does not ask, "How much does it cost to be safe?" They don't ask—and this is very important—"What does safety mean?"

Put another way, when you buy an insurance policy you look at the cost of the premium and you look at the risk. You don't buy insurance policies against being hit by a meteorite. The risk is very small.

Q: Won't one of the arguments the first group of scientists put forth be that we should slow our use of energy, conserve it, and in the process save the environment?

A: If the policy were cost-free, I would say, "Sure, why not?" So, for example, if people say, "Well, we should conserve energy," I would say, "Yes, of course. It's cost-free and conservation not only saves you energy, it even saves you money, and for that reason you should be doing it irrespective of a warming."

But I would add, "When you say, 'We have to do away with fossil fuels and use wind energy exclusively or solar energy,' well ... I would then say, 'That's very expensive and it doesn't even work very well.'" So there is a basic policy difference between the two groups of scientists. The first group believes in the precautionary principle. And the second group, to use another slogan from the culture, believes, "Look before you leap!"

Q: "Look before you leap" means let's not adopt large government programs to deal with a problem that the evidence says isn't taking place but which theory and mathematical models say must take place?

A: If we don't see anything happening despite the fact that carbon dioxide is increasing, then maybe something else is happening and the effect of the increase will be minimal. I won't say an effect won't be there, but that maybe it is minimal—or not even enough to be detectable. If it's not detectable, it means it probably can't do you any harm.

There's an additional argument, which is this: Supposing it did warm up, is that good or bad? You cannot automatically assume it is bad, because we've had warming in the past and coolings. Climate is always changing. Every time the climate has been warm, it's been good for mankind, and every time it has been cold it has been bad.

Q: How is a nonscientist to deal with these questions? How can a layperson look at the science and decide for himself or herself which side to be convinced by?

A: I think that the overall way of handling it is to look at the indices of human well-being. One is longevity. If people are now living longer and healthier lives than they used to—and this is certainly true—then things must be improving. So you have to conclude that air pollution, climate change, radiation, chemicals and whatever else you want to think about within the environment are not doing us in to a greater degree than before.

That's one way of looking at it. The other, more detailed [way] is to look at the individual items that are being held up as dangerous. Again, for example, air pollution. Air pollution assuredly can be unhealthy. In present-day China it is horrible, truly awful. But according to the EPA [Environmental Protection Agency], air pollution virtually has disappeared from the United States. Today we have fewer particulates, less sulphur, fewer ozone events and so on. The air is cleaner and better according to the EPA. I don't question that. It's EPA's data, and, when you think about it, it would be in EPA's interest to show that this is not so. It would be in the EPA's interest to show that air pollution is a serious problem and maybe even getting worse. But in fact, the outdoor air has become so clean that probably the greater health hazard is indoor air. Most of us spend 80 percent or so of our lives indoors, so in a sense outdoor air pollution is almost irrelevant.

Q: Do we politicize science now more than we used to?

A: I think yes. I remember when Earth Day first was proclaimed in 1970, that's when the heavy politicizing started.

Q: What's your impression of science education in this country?

A: It goes up and down. It peaked after *Sputnik* in science and engineering, and it's been slowly going down. We're lagging behind, as I read it, many other countries. We're well down in the middle, lagging behind India and Japan.

Q: Does good science education help make people immune to being convinced by bad science, and isn't solid science training essential?

A: That's true. In fact, when I speak out about climate change and global warming, the greatest amount of support I get is from people who know something about the subject. They don't have to be specialists, but they have to be able to read and absorb data when I show them a graph—to understand what it means.

Q: What about the Bush administration's space program? Should we be getting back to, and deeper into, space exploration?

A: Should we be spending money at all on science? On astronomy and other scientific fields that have no practical payoff in the short term? Black holes are interesting. Discovering new planets is interesting. But where's the practical payoff for those from whom the money is taken to pay for such programs?

Even so, let us assume that space exploration is important. Then the question is, how best to do it. I have always pointed out that some things are more important than others, which means some things are of less importance.

Among the things that are less important is putting a base on the moon. I don't see any good reason to put a permanent base on the moon. It's not just the expense involved, but the fact that a moon base would delay or make impossible other things we should be doing.

Supposing you get a half-dozen people to sit in an enclosure on the moon, so what? To me, a base on the moon is just another space station, and we've already proved that people can survive in space. We've known that for a long time, so we're not learning anything new.

Q: What could we be doing that would be more beneficial to science?

A: We should be going to Mars. Not with a base, but a short exploratory visit. Not to the surface of Mars, because that's difficult and costly and would take forever. But to *Demos*, a moon of Mars, and from that moon conduct an unmanned exploration of the planet.

Q: What do you think of the Bush administration's attitude toward science in general?

A: The administration is conducting continually a climate-research program to the tune of about \$2 billion a year. If I were doing it, I would spend a lot less and try to focus on what the really important issues are. But it's turned out to be a great support project for scientists, not only for physical scientists but also for the social scientists who study the social, philosophical and theological implications of climate change. Everyone is getting in on this because they can get money from the program.

Q: Any other problems with the administration when it comes to science?

A: The Bush administration has quite properly said we're not going to go along with the Kyoto Protocol. They're not going to do all those crazy things demanded by the protocol, such as rationing energy and making energy even more expensive and causing ourselves economic harm. But, on the other hand, the administration is acting like this is a real problem, as though the problems the protocol was supposed to address are real. So they have a great big research program on hydrogen cars and so on, or sequestering carbon dioxide.

It makes no sense. It tells people, "This is a problem after all." Why would you want to sequester carbon dioxide? To do so implies carbon dioxide is bad—when it's not bad, it's good. We should have more carbon dioxide in the atmosphere. It's good for plants. It makes them grow faster.

Q: What are your views on energy?

A: The best we have now are coal, oil, and gas—and these will be with us a long time, long enough until they become too expensive, meaning scarce. But we have other sources of energy. We have nuclear energy, for example, nuclear energy which works. One of the real curious things about this whole debate is that the people who are concerned about global climate change are also the people who are opposed to advancing nuclear energy. The very same people.

Never mind that nuclear energy would do the job that needs to be done. It would produce energy without any carbon dioxide, so it's the obvious answer. But they don't want anything to do with it, so you see they can't be serious. It shows how ideological they are.

POSTSCRIPT



Should Society Act Now to Forestall Global Warming?

The United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, took place in 1992. High on the agenda was the problem of global warming, but despite widespread concern and calls for reductions in carbon dioxide releases, the United States refused to consider rigid deadlines or set quotas. The uncertainties seemed too great, and some thought the economic costs of cutting back on carbon dioxide might be greater than the costs of letting the climate warm.

The nations that signed the UN Framework Convention on Climate Change in Rio de Janeiro in 1992 met again in Kyoto, Japan, in December 1997 to set carbon emissions limits for the industrial nations. The United States agreed to reduce its annual greenhouse gas emissions 7 percent below the 1990 level between 2008 and 2012. In November 1998 they met in Buenos Aires, Argentina, to work out practical details (see Christopher Flavin, "Last Tango in Buenos Aires," *World Watch* [November/December 1998]). Unfortunately, developing countries, where carbon emissions are growing most rapidly, face few restrictions, and political opposition in developed nations—especially in the United States—remains strong. Ross Gelbspan, in "Rx for a Planetary Fever," *American Prospect* (May 8, 2000), blames much of that opposition on "big oil and big coal [which] have relentlessly obstructed the best-faith efforts of government negotiators." Nor do some portions of the industry seem interested in acting on their own. In May 2003 Exxon Mobil rejected proposals that it address global warming and develop renewable energy. CEO Lee Raymond, who had previously denounced the Kyoto Protocol, said the company does not "make social statements at the expense of shareholder return."

The opposition remains visible despite the latest IPCC report. Critics stress uncertainties in the data and the potential economic impacts of attempting to reduce carbon dioxide emissions. See Richard A. Kerr, "Rising Global Temperature, Rising Uncertainty," *Science* (April 13, 2001). Some feel that climate change may well be less severe than expected and also beneficial overall to agriculture and human well-being. See Patrick J. Michaels and Robert C. Balling, Jr., *The Satanic Gases: Clearing the Air About Global Warming* (Cato Institute, 2000).

There is also opposition based on the view that the methods of reducing greenhouse gas emissions called for in the Kyoto treaty are, at root, unworkable. See Frank N. Laird, "Just Say No to Greenhouse Gas Emissions Targets," *Issue in Science and Technology*, Winter 2000 2001. http://www.issues.org/issue9/issue9_10.htm

have proposed a number of innovative ways to keep from adding dioxide to the atmosphere. See Howard Herzog, Baldué Eliasson, Karstad, "Capturing Greenhouse Gases," *Scientific American* (Februz Fred Krupp, president of Environmental Defense, in "Global War the USA," *Vital Speeches of the Day* (April 15, 2003)), recommends a based method to finding and developing innovative approaches. J Wilbanks, et al., in "Possible Responses to Global Climate Change: ing Mitigation and Adaptation," *Environment* (June 2003), note that mitigation techniques are under study around the world but that pr also have to adapt to a warming world.

In June 2002 the U.S. Environmental Protection Agency (EPA its *U.S. Climate Action Report—2002* (available at <http://www.epa.gov/globalwarming/publications/car/index.html>) to the United In it, the EPA admits for the first time that global warming is real human activities are most likely to blame. President George W. Bush aely dismissed the report as "put out by the bureaucracy" and sa opposes the Kyoto Protocol. He insists that more research is necessary anyone can even begin to plan a proper response, which prompter, in "As the World Burns," *Mother Jones* (March/April 2003 slightly in check, to call him "a man with a plan—about planning the plan for that additional research was announced later in 2003; Malakoff, "New Climate Science Plan Garners Split Opinions, (August 1, 2003). Meanwhile, the evidence for climatic effects cor mount; see Matthew Sturm, Donald K. Perovich, and Mark C. Serre down in the North," *Scientific American* (October 2003). Experts rec uncertainties in the data and analyses but agree that climate chan impacts "could be quite disruptive"; see Thomas R. Karl and Kevin berth, "Modern Global Climate Change," *Science* (December 5, 2001; Seth Dunn, in *Reading the Weatherman: Climate Policy from Rineburg*, Worldwatch Paper 160 (August 2002), urges swift implementation the Kyoto Protocol as "the best way to achieve global action o change." On the other hand, Richard B. Stewart and Jonathan B. V "Practical Climate Change Policy," *Issues in Science and Technolog 2004), declare, "It's time for a new, more pragmatic approach," r new treaty with more emphasis on costs and benefits. James Kastin; sylvania State University and James Walker of the University of warn that if one looks a little further into the future than the nex the prospects look even more alarming. By the 2200s, the amount dioxide in the atmosphere could be 7.6 times the preindustrial l draconian restrictions, it could be held to a fourfold increase. Gloi ing may therefore turn out to be much worse in the long run than predicting now, they say. See Thomas R. Karl, Neville Nichols, and Gregory, "The Coming Climate," *Scientific American* (May 1997) "Bangladesh: The Next Atlantis?" *Environment* (June 2003), which recent modeling studies warning that if the IPCC projections are co-*

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TAKING SIDES

Clashing Views on Controversial

Environmental Issues

ELEVENTH EDITION, EXPANDED

Selected, Edited, and with Introductions by

Thomas A. Easton
Thomas College

 **Contemporary
Learning Series**



Preface

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Maggie Lytle

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Most fields of academic study evolve over time. Some evolve in turmoil, for they deal with issues of political, social, and economic concern. That is, they involve controversy.

It is the mission of the *Taking Sides* series to capture current, ongoing controversies and make the opposing sides available to students. This book focuses on environmental issues, from the philosophical to the practical. It does not pretend to cover all such issues, for not all provoke controversy or provoke it in suitable fashion. But there is never any shortage of issues that can be expressed as pairs of opposing essays that make their positions clearly and understandably.

The basic technique—presenting an issue as a pair of opposing essays—has risks. Students often display a tendency to remember best those essays that agree with the attitudes they bring to the discussion. They also want to know what the “right” answers are, and it can be difficult for teachers to refrain from taking a side or from revealing their own attitudes. Should teachers so refrain? Some do, though rarely so successfully that students can not see through the attempt. Some do not, but of course they must still cover the spectrum of opinion if they wish to do justice to the scientific method and the complexity of an issue.

For any *Taking Sides* volume, the issues are always phrased as yes/no questions. Which answer—yes or no—is the correct answer? Perhaps neither. Perhaps both. Perhaps we will not be able to tell for another century. Students should read, think about, and discuss the readings and then come to their own conclusions without letting my or their instructor’s opinions dictate theirs. The additional readings mentioned in the introductions and postscripts should prove helpful.

For each issue in this book, an *introduction* provides historical background and a brief description of the debate. The *postscript* that follows each pair of readings offers recent contributions to the debate, additional references, and sometimes a hint of future directions. *On the Internet* page that accompanies each part opener provides Internet site addresses (URLs) that should prove useful as starting points for further research.

Changes to this edition This eleventh edition of *Taking Sides: Clashing Views on Controversial Environmental Issues* contains 38 sections arranged in pro and con pairs to form 19 issues. About half of this book consists of new material. Two issues, *Will Hydrogen Replace Fossil Fuels for Cars?* (Issue 10), and *Should Existing Power Plants Be Required to Install State-of-the-Art Pollution Controls?* (Issue 11), were added for the 2004 partial revision. There are two completely new issues: *Is It Time to Revive Nuclear Power?* (Issue 12) and *Are Marine Reserves Needed to Protect Global Fisheries?* (Issue 15). In addition, for eleven of the issues retained from the previous edition, one or both of the