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US Politics and Climate Change: Science Confronts Policy

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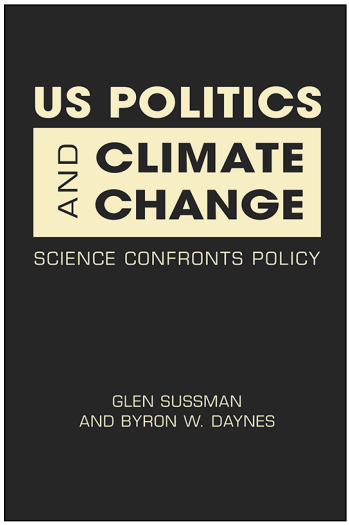

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Policy Deadlock: Grappling with Climate Change

> It is "unequivocal" that the climate is and will continue to change, and that human generation of greenhouse gases is responsible for most related changes since the 1950s. Climate change will affect national security in the broadest sense, potentially affecting everything from economic growth to social stability. More narrowly, global climate change may spur sudden onset (i.e., hurricanes and floods) and slow onset (i.e., droughts and famines) disasters around the world, provoking humanitarian crises that will require military and other government responses.
>
> —*International Panel on Climate Change*[1]

Between 1990 and 2007, the Intergovernmental Panel on Climate Change (IPCC), a body composed of many of the world's leading scientists and established by the United Nations Environment Programme and the World Meteorological Organization, published several reports regarding global climate change. The latest report, published in 2007, made the case noted above regarding human-induced climate change.[2] The possibility that global climate change can have such serious social and political consequences in the United States and in the world at large is reason enough to look at this issue in greater context and detail. This is not to suggest that all policymakers and those interested in global climate change agree and fully subscribe to the IPCC's conclusions. In fact, those who feel most intensely about the seriousness of global climate change express concern that there is a general lack of public interest within the United States regarding the global conse-

quences of climate change.[3] We hope that our approach to climate change—which thoroughly appraises institutional decisionmaking, noting both support for and clashes with the scientific community's assessment of climate change—will add to the overall understanding of its significance.

Evolving Interest in Climate Change

Concern about climate change is certainly not a new problem. At the time of the Trojan War, Aristotle commented on climate change when he noted that "the Argive land was marshy and could only support a small population, whereas the land in Mycenae was in good condition (and for this reason Mycenae was the superior)." Later he observed that "now the opposite is the case. . . . The land of Mycenae has become completely dry and barren, while the Argive land that was formerly barren owing to the water has now become fruitful." Then he suggested the importance of this observation: "Now the same process that has taken place in this small district must be supposed to be going on over whole countries and on a large scale."[4]

In the United States, interest in climate change dates back to colonial America, when Cotton Mather observed in 1721 that "our cold is much moderated since the opening and clearing of our woods, and the winds do not blow roughly as in the days of our fathers, when water, cast up into the air, would . . . be turned into ice before it came to the ground."[5] And Benjamin Franklin made some of the more sophisticated observations of climate change beginning in 1766, when he stated: "Tho' we have had a very mild Winter, we have had the coldest and most backward Spring I think that ever I knew. There has not been but one warm Day properly speaking since the Month of February, and it is so cold now, that I am obliged to keep by the Fire: The Fruit I believe will be much affected by it."[6]

Although the physical and natural sciences have informed us that over the centuries Earth's climate has altered between warm periods and ice ages, in the nineteenth century human activities began to have an impact on the planet's climate as a result of the Industrial Revolution. During this period, several "greenhouse effect pioneers"—including French mathematician Joseph Fourier Jean Baptiste in 1827, British scientist John Tyndall in 1861, and Swedish chemist Svante Arrhenius in 1896—determined that the warming of the planet was associated with a buildup of greenhouse gases.[7]

Given these early studies and observations, we might ask at this point whether our focus should be on "global warming" or on "global climate change"? Although these terms are closely related, it is important to make a fundamental distinction between the two. According to the US National Academy of Science, *global warming* is characterized as "an average increase in the temperature of the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns," while *climate change* is described as a "significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period."[8] Our focus here will be on *global climate change,* as it will allow us to assess the consequences of this environmental phenomenon in a broader context. In looking at global climate change, we will be able to assess the seriousness of the buildup of greenhouse gases in the atmosphere, as well as examine responses from policymakers and private and public institutions.

Carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride are the six main greenhouse gases focused on by the Kyoto Protocol and the Environmental Protection Agency (EPA). In providing a context for understanding the role played by greenhouse gases and climate change, Ronald Brunner and Amanda Lynch explained it as follows: "[Greenhouse] gases absorb and reradiate heat that would otherwise escape into space, warming the earth and making life as we know it possible. But increases in concentrations of greenhouse gases in the atmosphere force temperature increases and other climate changes. These in turn force changes on natural and human systems, mostly adverse changes because these systems evolved under different climate conditions."[9]

Political Approaches to the Study of Global Climate Change

Although the scientific community has written much about climate change, less has been written about the politics of climate change and climate policy. Throughout this book, we rely on the research that both supports and contradicts our own research. The purpose is to provide a framework in which the reader may become more familiar with climate change studies that have contributed a better understanding of the trends and patterns involved in global climate change.

The significant impact of human activities on climate change was most clearly stated in Glen Sussman's article "The Science and Politics

Problem: Policymaking, Climate Change, and Hurricanes," which references some of the primary recent studies.[10] We would add to this list Barry Rabe's books on climate change policy in the United States: *Statehouse and Greenhouse* and *Greenhouse Governance*.[11] In the former, Rabe discussed the important role of the states in addressing climate change, given inaction by the federal government. In the latter, Rabe offered a useful discussion of climate change within a "climate governance" framework. In doing so, he focused on international-, national-, and state-level politics and policy.

But the contrary belief that human activities do not affect the global climate makes resolution of the problem even more difficult. In a recent study, "Global Warming: Environmental Crisis or Scientific Hoax?" we focused attention on the damaging political debate between advocates who seek to take immediate action on global warming and climate change and those who undercut the importance of climate control findings.[12] This intense exchange has slowed any response to climate change.

Another factor that binds together many of the recent studies regarding global environmental policy is the difficulty of resolving concerns about climate change, particularly in the US political system. An example of this is found in Christopher Klyza and David Sousa's *American Environmental Policy, 1990–2006*.[13] Klyza and Sousa point out the difficulties in resolving environmental concerns in a complex governmental system, such as in the United States, where environmental measures are often delayed in legislative gridlock. The authors go on to say that, although resolution is not impossible, governments must seek alternative routes to secure agreement among the parties.

Though research on climate change is increasing, this effort can be fragmented by timing, focus, and perspective. The idea of global transformation in global climate change has also become a common theme in other recent works. One example is *Climate Change Justice,* by Eric Posner and David Weisbach. The authors make the case that, regardless of what the new policy of adjustment might be in climate control, most citizens will think it better than the status quo.[14] The authors themselves tend to favor the stricter protective measures that will be needed to respond to the consequences of climate change.

Differentiation in measures to address global climate change is the theme of *Beyond Smoke and Mirrors: Climate Change and Energy,* wherein Burton Richter argues that if reduction of greenhouse emissions is to remain our goal, there are several ways to achieve this:

managing the gases, reducing and more efficiently using polluting resources, seeking appropriate means for storing the emissions, and replacing fossil fuels with other sources of energy.[15] He supports the use of all of these options, but feels that major limits on emissions will never be achieved without relying also on alternative sources of energy.[16] The purpose of Henry Lee's *Shaping National Responses to Climate Change* was to bring a group of scholars together to begin the process of moving forward with resolutions, strategies, and programs to address climate change.[17] A number of recent books have focused on the Kyoto Protocol—the international environmental agreement to limit greenhouse gas emissions, signed in 1997, which served as an important first step in bringing some 191 nations (as of 2010) together to focus on the concerns of global climate change. The agreement expired in 2012, and other researchers have begun to look beyond Kyoto. Ernesto Zedillo, for example, brought together a group of individuals with varied international perspectives from science, politics, and academia to focus on the post-Kyoto era. In Zedillo's book *Global Warming: Looking Beyond Kyoto,* the contributors argue that we need to continue multilateral efforts to address climate change.[18] Dana Fisher, in her book *National Governance and the Global Climate Change Regime,* examines the responses to Kyoto of three nations: Japan, the Netherlands, and the United States. Fisher examines four independent variables—the state, civil society, the market, and science—in each of the countries. She concludes that the reluctance in the United States to support Kyoto can be blamed partially on the importance of the automobile and failure to control its emissions and partially on the supply of coal in the United States.[19] Henrik Selin and Stacy VanDeveer look at Canada, the United States, and Mexico and their responses to Kyoto in *Changing Climates in North American Politics, Institutions, Policymaking, and Multilevel Governance*.[20] For the United States, the authors find that while the federal government rejected Kyoto, many states responded differently, adopting and adapting many of the Kyoto standards in their climate change programs. Joseph Aldy and Robert Stavins's *Post-Kyoto International Climate Policy* points to the difficulty that the nations that agreed to the Kyoto Protocol will have in establishing another agreement with implementable objectives, goals, and timetables.[21] We have already seen some of these difficulties, as many of the same nations tried without success to come to an agreement in 2007 in Bali, in 2009 in Copenhagen, and in 2010 in Cancun. The 2011 Climate Change Summit was held in Durban, South Africa.

In none of these conferences and meetings were representatives able to secure binding agreements to limit greenhouse gas emissions. However, the Durban summit did result in some positive movement: the three primary polluter nations—the United States, China, and India—agreed with the other nations on the need to cut carbon emissions. The countries also agreed that the Kyoto Protocol would move to a "second commitment period" in 2013, in a transition from the end of the commitment period in 2012. There was an indication that some amendments would be added to the protocol, including one to reexamine the "range of greenhouse gases covered."[22] In 2012, the Climate Change Summit was held in Doha, Qatar, where governments agreed to complete a draft of a universal climate change agreement by 2015 that will cover all countries by 2020.[23] It is also anticipated that there will be a number of small meetings and workshops during 2013. The next scheduled large climate change summit will be in Warsaw, Poland, to be held the latter part of 2013.

One important aspect of the Kyoto Protocol that must be maintained is the form of its "mechanisms," which allow countries to continue to meet their commitments under the protocol. These mechanisms include clean development, joint implementation, and emissions trading.[24] In addition, they assist developing countries and the private sector in participating in emission reductions. The clean development mechanism, explained in Article 12 of the Kyoto Protocol, allows for investment in projects that reduce emissions in developing countries. Joint implementation, explained in Article 6, allows a country to conduct emission reduction projects with other countries. And emissions trading, the subject of Article 17, allows these countries to sell emission allowances to other countries that need this assistance. Thus these three instruments of the Kyoto Protocol were devised explicitly to facilitate the commitments made in the protocol and to provide a visible check on global climate change. These must be continued in the next commitment stage of the protocol.

Another of the major themes involved in the discussion of global climate change is the conflict between rich and poor countries. In their book, *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy,* J. Timmons Roberts and Bradley Parks provide a good example of this approach.[25] They point out how one of the major challenges to resolution can be seen in the conflict of interest and suspicions between developed and developing nations regarding climate change. This comes down to the never-ending discord between the

"haves" and the "have-nots," and how this has affected relations between them regarding global climate change. Roberts and Parks argue that some of the conflict in the Americas, for instance, can be explained by the historically "callous" relations between the North and South American countries.[26]

It is fair to ask why global climate change is so difficult to control. David Shearman and Joseph Smith suggest that the difficulty is due in part to a lack of confidence in the ability of democracy to respond to global climate change:

> If liberal democracy is to survive it will need to offer leadership, resolve, and sacrifice to address the problem. To date [2007] there is not a shred of evidence that these will be provided nor could they be delivered by those at the right hand of American power. Some liberal democracies that recognize that global warming is a dire problem are trying but nevertheless failing to have an impact on greenhouse emissions. To arrest climate change, greenhouse reductions of 60 to 80 percent are required during the next few decades. . . . The magnitude of the problem seems overwhelming, and indeed it is.[27]

Let us respond in the following way. First, the *transboundary nature* of global climate change makes it particularly challenging for policymakers. The very fact that climate change does not respect political boundaries—it is not limited to one geographic location but rather it has a cross-national effect—means that action taken on global problems in one country may be ineffectual if other countries do not also respond in kind.

During the mid-1990s, Lynton Caldwell and Michael Kraft examined environmental problems at the international level while also giving attention to political actors within the US political setting, and both were sensitive to a number of these difficult problems. In *International Environmental Policy,* Caldwell expressed his concern about how acute global environmental problems have recently become.[28] As he stated, "By early 1990, global climate change could be regarded as the single greatest international environmental policy issue."[29]

Kraft, in his research study *Environmental Policy and Politics,* assessed the dominant focus during three generations of environmental problems.[30] Air and water quality, he indicated, dominated the first generation, in the early 1970s, whereas the second generation, during the late 1970s, was concerned mostly with toxic chemicals and hazardous waste. The third generation of environmental problems, he sug-

gested, are "global in origin and effects, are generally low in visibility and political saliency, and are characterized by significant scientific uncertainty—with experts often disagreeing about the magnitude, timing, and location of long-term impacts."[31] It is in this category that he placed global climate change and loss of biodiversity. Kraft described the third-generation problems as being "global in origin and effects," more "politically controversial," and more "difficult to address than the environmental issues of earlier eras."[32] In short, Kraft argued, it is this category of environmental concerns that have brought the greatest challenges to US policymakers, along with divergent agendas that have pressured government at both the national and state levels.

Global climate change can seem particularly difficult to address in that it *excites confrontation* as do other divisive social issues including abortion, the death penalty, or same-sex marriage. A specific example of confrontation focused on climate change took place in Copenhagen at the site where the Copenhagen Accord was signed. Here police and demonstration organizers estimated that on December 12, 2009, between 60,000 and 100,000 activists turned out, representing "environmental groups, human rights campaigners, climate activists, anti-capitalists and freelance protesters from dozens of countries."[33] Many of the demonstrators were representing groups of people whom they considered to be most vulnerable to global warming. Most of the demonstrations were peaceful, but police arrested between 600 and 700 persons who threw rocks through windows and set off small explosives. Juliet Eilperin noted that there were similar demonstrations in 3,000 other locations worldwide, including Papua New Guinea, Israel, Japan, and Saudi Arabia.[34]

Serious differences of opinion among elites as well as the general public make the problem of global climate change particularly difficult to resolve. Much of the confrontation has come in rhetorical exchanges among politicians, scientists, policymakers, and media spokespersons. Intense feelings on both sides of the issue have been expressed. In the United States, the debate over climate change and global warming falls into three major categories: policy supporters who have formulated their views based on scientific evidence; those who acknowledge that global warming is real but believe that it is due more to natural climate cycles than to human-made causes; and those who denounce the idea of global climate change altogether, arguing that it is nothing but a hoax.

In the first category are those who wish to respond immediately to the problem based on worldwide scientific discovery. One of the

strongest claims made by these persons is the World Meteorological Organization's finding that the decade from 2000 until 2009 was "the warmest decade in the modern record, dating back 150 years."[35] In the United States, the National Climatic Data Center as well as the National Aeronautics and Space Administration (NASA) also demonstrated that the year 2009 was the "warmest on record" based on "new surface temperature figures."[36] NASA also found that 2009 was the "second warmest year since 1880, when modern temperature measurement began."[37]

Included in this category are those who assert that human-produced greenhouse gases are contributing to the warming of the planet. This warm-up does not seem to be caused by the sun's energy, according to research published by the Royal Academy.[38] Moreover, Piers Forster of Leeds University, who contributed to the 2009 Intergovernmental Panel on Climate Change, charges that "warming in the last 20 to 40 years can't have been caused by solar activity."[39] Yet in 2009 in the United States, despite the fact that "84 percent of U.S. scientists agree that 'the earth is getting warmer because of human activity such as burning fossil fuels'—only 49 percent of the public agreed."[40]

This is significant. Researchers Brent Steel, Richard Clinton, and Nicholas Lovrich, in their book *Environmental Politics and Policy,* argue that if any progress is to be made in resolving environmental difficulties, policymakers must reach out and persuade the general public and be willing to engage in political debate over policy options.[41] Two books by Ross Gelbspan, *The Heat Is On* and *Boiling Point,* offer a journalist's perspective on the issue of climate change.[42] Gelbspan shows how vested interests, especially the oil and coal industries, use their resources to influence energy policy but pay little attention to climate change and fail to inform the public.

In light of scientific findings, supporters can look to the 191 countries that have signed and ratified the Kyoto Protocol as evidence of world interest in resolving global climate change. With a multilateral treaty such as the Kyoto Protocol, both the signature of a country internationally and the subsequent ratification nationally are necessary. It is through national ratification that a country indicates sincere willingness to be bound by international responsibilities.[43]

Supporters can also look to the 193 countries that approved the Copenhagen Accord in 2009. Moreover, we find politicians and academics relying on this evidence. Former US vice president Al Gore made a convincing argument in support of the seriousness of global

climate change by suggesting, in a 2009 interview, that "scientists have long held that the evidence in their considered word is 'unequivocal,' which has been endorsed by every national academy of science in every major country in the entire world."[44]

Academics who support these scientific findings include David Cromwell and Mark Levene, who advocate revolutionary change to mitigate the dangers of global warming;[45] Henry Diaz and Richard Murnane, who assert that climate change will have an extreme impact on society;[46] J. P. Bruce, Yi Hoe-song, and Erik Haites, who in 1996 argued that the social costs of climate change and its effects on the economies of the world have been serious;[47] and Robert Shackleton, who in 2009 in a research report for the US Congress reminded legislators of the worldwide consensus that something must be done about global climate change.[48]

In the second category are those who acknowledge that global warming is a problem but who believe that it is caused by natural climate cycles rather than human activities. They can be found in both academic circles as well as in the media, and are sincere in their belief that human beings have little to no control over climate change. For instance, Don Easterbrook of Western Washington University blames Earth's erratic patterns of warmth and coolness on ocean cycles. He maintains that global cooling from 1945 through 1977 coincided with a Pacific Ocean cycle.[49]

Other critics of human-induced global climate change base their opposition on conflicting scientific explanations. Tim Garrett of the University of Utah, for example, does not believe that global warming is caused by human activities. Garrett thinks that the efforts that have already been made to reduce global warming—such as increased energy efficiency and attempts to limit population growth—"are not meaningful." He believes that the only available option that might be effective would be to "switch to non-carbon-dioxide-emitting power sources." And he adds, "In my model, all you need to know is how fast energy consumption is rising."[50]

Among those scientists who prefer another explanation to human-caused warming is Geoffrey Duffy, a professor from the University of Auckland in New Zealand who indicated that "even doubling or tripling the amount of carbon dioxide will virtually have little impact, as water vapour and water condensed on particles as clouds dominate the worldwide scene and always will."[51] And meteorologist Hajo Smit from Holland indicated that "Gore prompted me to start delving into

the science again and I quickly found myself solidly in the skeptic camp. . . . Climate models can at best be useful for explaining climate changes after the fact."[52]

Finally, in the third group are those who completely deny the existence of global climate change. In many ways, individuals in this group are the most extreme, rejecting all scientific findings and relying more on ideology. Persons in this category often seek support for their belief in the writings and broadcasts of such commentators as Rush Limbaugh, who in 1993 stated, in his own colorful language, that "you never hear the environmentalist wacko crowd acknowledge . . . that 96 percent of the so-called 'greenhouse' gases are not created by man, but by nature."[53] Sixteen years later Limbaugh had not changed his mind. On November 23, 2009, in denouncing global warming and the environmental movement, he contended:

> Now, the bottom line is, the whole man-made global warming movement is a fraud. It is a hoax. Its made-up lies. I have known this since the beginning of the movement. I'm the one who said that militant environmentalism is the home of displaced communists after the Berlin Wall came down. Now, scientists cannot rely on common sense. So the anti–global warmers have to go out there and get their own science to counter the science that the pro–global warming crowd is using, and they're making it up.[54]

Sean Hannity, on his *Fox News* show that same year, echoed much the same feeling when he stated: "Global warming is a crock . . . and a huge cover up. [The year 2009] is the ninth coldest year on record that we have chronicled."[55]

Among the prominent members of Congress in this category is US senator James Inhofe (R-OK), who in July 2003, as a member of the Senate Committee on Environment and Public Works, indicated much the same thing in similar language, stating that concern over global warming was the "greatest hoax ever perpetrated on the American people."[56] Inhofe claimed in 2009 that he could name some 700 international scientists who were in opposition to "man-made global warming claims."[57]

Other voices of denial come from such persons as novelist Michael Crichton, who in his novel *State of Fear* accused environmentalists of being radical and asserted that those supporting the notion of human-induced global warming and climate change were nothing but alarmists. As Crichton indicated, "The threat of global warming is essentially

nonexistent. Even if it were a real phenomenon, it would probably result in a net benefit to most of the world."[58] This sentiment has appealed to such conservative ideologues and media outlets as Limbaugh,[59] George Will, Joseph Bast, the *National Review,* and the *Washington Times*.[60] In addition, former president George W. Bush met with Crichton in 2005 and, according to a report in the *New York Times,* the two "talked for an hour and were in near-total agreement. . . . The visit was not made public for fear of outraging environmentalists all the more."[61]

Another voice of opposition to human-made global climate change comes from Christopher Horner, who in his book *Red Hot Lies,* published in 2008, argued that the global warming campaign has used intimidation and has lied in making its case.[62] Joining Horner is atmospheric scientist Stanley Goldenberg of the Hurricane Research Division of the National Oceanic and Atmospheric Administration, who stated: "It is a blatant lie put forth in the media that makes it seem there is only a fringe of scientists who don't buy into anthropogenic global warming."[63] And environmental scientist Delgado Domingos, from Portugal, had this to say: "Creating an ideology pegged to carbon dioxide is a dangerous nonsense. . . . The present alarm on climate change is an instrument of social control, a pretext for major businesses and political battle. It became an ideology, which is concerning."[64]

Despite a consensus among members of the scientific community that human activities play a major role in global climate change, the arguments put forward by this small but vocal group of contrarians and deniers might encourage one to conclude that climate change problems at this point seem uncontrollable, and resolution difficult and all but unreachable. Miranda Schreurs thinks that the greatest problem in allowing this denial to continue is the negative effect it has on public opinion.[65] The situation in the United States today is perhaps best captured by Steven Brechin, of Syracuse University, who in 2011 contended:

> Climate change in the United States has become highly politicized among the warring political parties, a growing partisan media on what has become an ideological issue and not simply a material one. Public support for policies that address climate change is declining in many countries, including those whose publics have traditionally supported such policies. There is also mounting evidence that anti-climate-change-policy forces are organizing efforts globally. . . . So instead of growing legions of climate change voters, the opposite may become true. . . . [T]he world may be in for continued if not greater political stalemate.[66]

Understanding Global Climate Change Through an Assessment of the US Political System

Since climate change is a global problem, how does understanding the US political system and its policymakers and institutions help us understand climate change decisionmaking? After all, as former vice president Al Gore recently put it, the US response will only be one contribution to remedying the problem, since global climate change "requires a global solution."[67] But there are good reasons why we need to understand how that "one contribution" has contributed to the global solution.

Let us offer several reasons why this is important. First, as Kathryn Harrison and Lisa Sundstrom point out in their book *Global Commons, Domestic Decisions,* even though most political scientists have approached climate change from the international relations perspective, it would best enhance our understanding of global climate change if they were to "reverse the lens of previous scholarship" by focusing on "domestic politics and decisions."[68] In short, great insights into the causes of climate change can be had through an examination of the US political system and the approach that the United States has taken toward understanding the concept of global climate change.

Second, the United States is an important world power and a leader in international affairs, so it is possible that US efforts in support of limiting global climate change may be persuasive in encouraging other nations to follow.[69] For instance, two months into his presidency, George W. Bush renounced the Kyoto Protocol, which 191 other countries had accepted. Instead, the United States acted virtually alone, adopting an approach based on voluntary goals and timetables and supportive of industry preferences regarding greenhouse gas emissions.[70] Few other countries subscribed to the US policy of refusing support to Kyoto. By contrast, Barack Obama has offered some support to climate change legislation domestically and has encouraged international allies to support a post-Kyoto global environmental agreement, making US leadership more visible.

A third reason to focus attention on the US political system is consistent with the situation that the United States found itself in until recently. The United States for years was the major emitter of the greenhouse gases that contribute to global warming and climate change. Consequently, the extent to which the United States—still a major producer of greenhouse gases—cooperates with other countries in an effort to reduce the production of greenhouse gases will have a profound

impact on the future resolution of this global environmental problem. We agree with Steven Brechin that "domestic politics matter within an international context."[71]

In studying domestic politics in order to better understand the US response to global climate change, our approach must be both analytical and complete. The research questions we ask in our analysis will both guide us toward breaking through the global climate change stalemate in which we find ourselves, and assist us in our assessment of the major arguments that have been articulated about global climate change. We wish to carefully assess, in a systematic way, the role and actions of each major political actor in the United States who has responded and will respond to global climate change. Our hope is that this analysis of domestic politics in the United States will bring some semblance of order to the confusion over climate change policy. We will also pay attention to those constraints that the US federal system places on policymakers who seek to achieve a working consensus in order to reduce greenhouse gas emissions at home and abroad. Our research questions include the following:

1. Why should Americans be concerned about global climate change? What might be the consequences of climate change for Americans?
2. Why has there been difficulty within the United States in achieving cooperation among key players in order to craft a viable, consensual climate change agreement? Why has climate change been politicized?
3. How has the clash between science and politics affected climate change policymaking in the United States?
4. Have policy agendas been helpful in confronting climate change?
5. What are the prospects for a substantive resolution to global climate change within the US political setting?

Given the increasing importance of climate change internationally and within the US political setting, this book aims to attract a wide audience. As Steven Brechin recently stated: "It may be an understatement to say that global climate change is the collective action problem of our era. If not addressed effectively relatively soon, this mounting concern will likely dramatically affect every nation on earth—politically, economically and environmentally."[72]

Given the ever-increasing literature on climate change as examined from the US perspective, it is fair to ask what our research can add. First, our analysis is framed in a historical context as we assess the evolution of climate change policy over time. Second, this book sets forth the argument that the climate change policymaking process in the United States should be viewed within the context of the "science and politics" problem, where science and politics collide and ideology trumps the former. Third, we offer an institutional and behavioral perspective on US politics and climate change; here we address several distinct key players in US politics. Fourth, we assess the dynamics of US politics and policymaking in response to global climate change. The purpose is to provide a systematic examination of the roles governmental and nongovernmental actors have played with regard to shaping environmental policymaking related to climate change, pointing to those actors that have made a difference in terms of policymaking outcomes. Our study finds value in assessing the importance of institutions and environmental policymaking, similar to the approach taken by Oran Young, Leslie King, and Heike Schroeder in their book *Institutions and Environmental Change,* which was established on the "institutional dimensions of environmental change within a broader stream of research of interest to leading social scientists." It was their intent to bring their findings to the attention of "those who are interested in the role of institutions more generally." In discussing "new institutionalism," they argued that "an interest in institutions treated as clusters of rights, rules, and decision-making procedures constitutes the glue that holds those who work in this realm together and gives this movement a distinctive 'personality' that is well known not only to practitioners of the new institutionalism but also to the movement's critics."[73]

In short, we share the argument put forth by Elizabeth DeSombre in her book *Domestic Sources of International Environmental Policy,* where she asserted: "The way the United States pursues internationalization . . . is almost entirely a product of the interaction among domestic groups. Those who hope to influence international policy would be wise to pay attention to what happens within states as well as between them."[74]

This study focuses attention on specific actors and institutions in the United States that have in some way dealt with climate change. For example, in Chapter 2 we direct our attention to the scientific community and the bureaucracy. Science is an important and highly relevant factor in the policymaking process. The role played by the scientific

community inside and outside federal government agencies is our focus, as well as how science and politics have interacted in response to efforts to address global climate change. In Chapter 3, we turn our attention to the Congress and the legislative process. We examine the impact of partisanship in the legislative institution and the role of key legislators in responding to global climate change, and we assess how the intellectual debate in the United States plays out legislatively. The presidency is also key to our understanding of climate change, and in Chapter 4 we assess the actions taken by individual presidents that have affected climate change policymaking, and we evaluate presidential leadership (or lack of leadership) in response to climate change. An institution that many do not take into account when thinking about climate change is the judiciary, which we treat in Chapter 5. Here we examine the significant federal court cases that have affected global climate change; for many social issues, the initial framing and agenda-setting takes place in the court, and we assess the extent to which the issue of global climate change follows this pattern. Interest groups and public opinion can determine in many ways the success or failure of climate policies. In Chapter 6 we note the role of interest groups and their impact on global climate change and provide a longitudinal appraisal of public opinion in order to gauge patterns and trends in the public's understanding of the issue. Chapter 7 addresses the role of the states. We assess the actions taken by the fifty states in response to climate change when federal leadership has been both weak and strong, and we also compare the states in their efforts to respond to global climate change. Finally, in Chapter 8 we remind the reader of the effect that our complex governmental system has on global climate change leadership. We note how most of the key players involved in possible decisionmaking often pose barriers to cooperative responses to the global crisis, and only the scientific community seems to have the most consensus of all possible decisionmakers. Yet even the scientific community needs to improve its communication with the people, given their ambivalence. The future remains problematic unless we find effective measures and determined policymakers to respond to the crisis.

Notes

1. Intergovernmental Panel on Climate Change, *Fourth Assessment Report,* 2007, quoted in Center for New American Security, "Climate Change," April 2010, www.cnas.org/naturalsecurity/consequences/climate-change.

2. The *Fifth Assessment Report* of the Intergovernmental Panel on Climate Change, assessing the scientific and socioeconomic aspects of climate change, will not be finalized until 2014.

3. Frank Newport, "Americans' Global Warming Concerns Continue to Drop," *Gallup World,* March 4, 2011, www.gallup.com/poll/126560/Americans-Global-Warming-Concerns-Continue-Drop.aspx.

4. Aristotle, *Meteorology,* translated by E. W. Webster, 1.14, http://classics.mit.edu/Aristotle/meteorology.1.i.html.

5. Ben Gelber, "Ben Franklin on Global Warming," *New York Times,* November 18, 2009, www.nytimes.com/2009/11/18/opinion.

6. Philip Ranlet, "What Does Weird Weather Really Tell Us?" History News Network, September 3, 2007, http://hnn.us/articles/42243.html.

7. Glen Sussman, Byron W. Daynes, and Jonathan West, *American Politics and the Environment* (New York: Longman, 2002), 291.

8. Environmental Protection Agency, "Climate Change: State of Knowledge," 2006, www.epa.gov/climatechange/stateofknowledge.html.

9. Ronald D. Brunner and Amanda H. Lynch, *Adaptive Governance and Climate Change* (Boston: American Meteorological Society, 2010), 7.

10. Glen Sussman, "The Science and Politics Problem: Policymaking, Climate Change, and Hurricanes," in *Hurricanes and Climate Change,* edited by James B. Elsner and Thomas H. Jagger (New York: Springer, 2009).

11. Barry G. Rabe, *Statehouse and Greenhouse: The Emerging Politics of American Climate Policy* (Washington, DC: Brookings Institution, 2004); Barry G. Rabe, *Greenhouse Governance: Addressing Climate Change in America* (Washington, DC: Brookings Institution, 2010).

12. Byron W. Daynes and Glen Sussman, "Global Warming: Environmental Crisis or Scientific Hoax?" in *Moral Controversies in American Politics,* 4th ed., edited by Raymond Tatalovich and Byron W. Daynes (Armonk, NY: Sharpe, 2011).

13. Christopher McGrory Klyza and David Sousa, *American Environmental Policy, 1990–2006: Beyond Gridlock* (Cambridge: Massachusetts Institute of Technology Press, 2008). See also Sussman, Daynes, and West, *American Politics and the Environment.*

14. Eric A. Posner and David Weisbach, *Climate Change Justice* (Princeton: Princeton University Press, 2010), 188.

15. Burton Richter, *Beyond Smoke and Mirrors: Climate Change and Energy in the 21st Century* (New York: Cambridge University Press, 2010), 184.

16. Ibid., 188.

17. Henry Lee, ed., *Shaping National Responses to Climate Change* (Washington, DC: Island, 1995).

18. Ernesto Zedillo, ed., *Global Warming: Looking Beyond Kyoto* (Washington, DC: Brookings Institution, 2008).

19. Dana Fisher, *National Governance and the Global Climate Change Regime* (Lanham: Rowman and Littlefield, 2004).

20. Henrik Selin and Stacy D. VanDeveer, eds., *Changing Climates in North American Politics, Institutions, Policymaking, and Multilevel Governance* (Cambridge: Massachusetts Institute of Technology Press, 2009).

21. Joseph E. Aldy and Robert N. Stavins, eds., *Post-Kyoto International Climate Policy: Summary for Policymakers* (New York: Cambridge University Press, 2009).

22. United Nations Framework Convention on Climate Change, "Looking Beyond 2012: The Durban Outcomes," http://unfccc.int/essential_background/items/6825.php, accessed August 27, 2012.

23. "Doha Climate Conference Opens Gateway to Greater Ambition and Action on Climate Change," December 9, 2012, www.unep.org/newscentre/default.aspx?DocumentID=2700&ArticleID=9353 (accessed April 5, 2013).

24. This discussion of the Kyoto mechanisms comes from United Nations Framework Convention on Climate Change, "The Mechanisms Under the Kyoto Protocol," http://unfccc.int/kyoto_protocol/mechanisms/items/1673.php, accessed September 21, 2012.

25. J. Timmons Roberts and Bradley C. Parks, *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy* (Cambridge: Massachusetts Institute of Technology Press, 2007).

26. Ibid., 13.

27. David Shearman and Joseph Wayne Smith, *The Climate Change Challenge and the Failure of Democracy* (Westport: Praeger, 2007), 153–154.

28. Lynton Keith Caldwell, *International Environmental Policy: From the Twentieth Century to the Twenty-First Century,* 3rd ed. (Durham, NC: Duke University Press, 1996), 5–10.

29. Ibid., 212.

30. Michael Kraft, *Environmental Policy and Politics,* 2nd ed. (New York: Longman, 2001), 15.

31. Ibid.

32. Ibid.

33. Tom Zeller Jr., "Thousands March in Copenhagen, Calling for Action," *New York Times,* December 13, 2009, www.nytimes.com/2009/12/13/science/earth/13climate.html.

34. Juliet Eilperin, "Protesters Demand 'Climate Justice,'" *Washington Post,* December 13, 2009, www.washingtonpost.com/wp-dyn/content/article/2009/12/12/AR2009121200641.html.

35. Andrew C. Revkin and James Kanter, "Global Warming Is Not Slowing, New Analysis Says," *New York Times,* December 9, 2009, www.nytimes.com/2009/12/09/science/earth.

36. Tom M. L. Wigley et al., "Temperature Trends in the Lower Atmosphere: Understanding and Reconciling Differences," executive summary, National Climatic Data Center, http://climatescience.gov/Library/sap/sap1-1/finalreport/sap1-1-final-execsum.pdf, accessed March 26, 2010; Michael D. Mastrandrea and Stephen H. Schneider, "Global Warming," in *World Book Online,* 2005, www.worldbookonline.com/wb/Article?id=ar226310.

37. John M. Broder, "Past Decade Warmest on Record, NASA Data Shows," *New York Times,* January 22, 2010, www.nytimes.com/2010/01/22/science/earth.

38. Richard Black, "'No Sun Link' to Climate Change," *BBC News,* July 10, 2007, http://news.bbc.co.uk/2/hi/6290228.stm.

39. Pew Research Center for the People and the Press, "Public Praises Science; Scientists Fault Public, Media," July 9, 2009, http://peoplepress.org/report/?pageid=1550.

40. Walter G. Moss, "Obama, Copenhagen, and the Global Warming Skeptics," History News Network, November 8, 2009, http://hnn.us/articles/121037.html.

41. Brent Steel, Richard Clinton, and Nicholas Lovrich Jr., *Environmental Politics and Policy* (Boston: McGraw Hill, 2003), 70.

42. Ross Gelbspan, *The Heat Is On* (Reading, MA: Addison-Wesley, 1997); Ross Gelbspan, *Boiling Point* (New York: Basic, 2004).

43. "Participating in Multilateral Treaties," http://untreaty.un.org/ola-internet/Assistance/handbook_eng/chapter3.htm, accessed September 18, 2012.

44. John Dickerson, "What in the Hell Do They Think Is Causing It?" *Slate,* December 8, 2009, www.slate.com.

45. David Cromwell and Mark Levene, eds., *Surviving Climate Change* (Ann Arbor: Pluto, 2007).

46. Henry F. Diaz and Richard J. Murnane, eds., *Climate Extremes and Society* (New York: Cambridge University Press, 2008).

47. J. P. Bruce, Yi Hoe-song, and Erik F. Haites, *Climate Change 1995* (New York: Cambridge University Press, 1996).

48. Robert Shackleton, *Potential Impacts of Climate Change in the United States* (Washington, DC: Congressional Budget Office, May 2009).

49. Paul Hudson, "What Happened to Global Warming?" *BBC News,* October 9, 2009, http://newsvote.bbc.co.uk.

50. Wendy Leonard, "University of Utah Professor Tim Garrett Says Conservation Is Futile," *Deseret News,* November 23, 2009, www.deseretnews.com/article/print/705346695/University–of-Utah-professor-Tim.

51. Marc Morano, "UN Blowback: More Than 650 International Scientists Dissent over Man-Made Global Warming Claims," *Inhofe EPW Press Blog,* December 10, 2008, http://epw.senate.gov.

52. Ibid.

53. Rush Limbaugh, *See, I Told You So* (New York: Pocket, 1993), 179–180.

54. Rush Limbaugh, "From the Climate Hoax to Health Care to 'Hope,' Liberalism Is Lies," *Rush Limbaugh Show,* November 23, 2009, www.rushlimbaugh.com.

55. Sean Hannity, *The Sean Hannity Show,* December 1, 2009, quoted in Union of Concerned Scientists, "Global Warming Deniers Are Full of Hot Air," n.d., www.ucsusa.org/cation/GotScience.

56. Moss, "Obama, Copenhagen, and the Global Warming Skeptics."

57. US Senate Environment and Public Works Committee (Minority), "U.S. Senate Minority Report," 110th Congress, 2nd session, Washington, DC, December 22, 2008, January 27, 2009, and March 16, 2009.

58. Michael Crichton, *State of Fear* (New York: HarperCollins, 2004), 407.

59. Limbaugh, "From the Climate Hoax to Health Care to 'Hope.'"

60. Joseph L. Best, "Michael Crichton Is Right!" Heartland Institute, January 11, 2005, www.heartland.org/policybot/results/16260/Michael_Crichton.

61. Michael Janofsky, "Bush's Chat with Novelist Alarms Environmentalists," *New York Times,* February 19, 2006, www.nytimes.com/2006/02/19/national.

62. Christopher C. Horner, *Red Hot Lies* (Washington, DC: Regnery, 2008).

63. Morano, "UN Blowback."

64. Ibid.

65. Miranda Schreurs, "Climate Change Politics in the United States: Melting of the Ice," *Analyse & Kritik* 32, no. 1 (2010): 177–189.

66. Steven R. Brechin, "Review of *Global Commons, Domestic Decisions: The Comparative Politics of Climate Change,* by Kathryn Harrison and Lisa McIntosh Sundstrom," *Perspectives on Politics* (March 2011): 132.

67. James Hansen, "Power Failure: Politicians Are Fiddling While the Planet Burns—What's a Voter to Do?" *Newsweek,* December 14, 2009.

68. Kathryn Harrison and Lisa McIntosh Sundstrom, eds., *Global Commons, Domestic Decisions: The Comparative Politics of Climate Change* (Cambridge: Massachusetts Institute of Technology Press, 2010), 2.

69. Glen Sussman, "The USA and Global Environmental Policy: Domestic Constraints on Effective Leadership," *International Political Science Review* 25 (October 2004): 349–369.

70. See Byron W. Daynes and Glen Sussman, "The 'Greenless' Response to Global Warming," *Current History* 104 (December 2005): 438–443.

71. Brechin, "Review of *Global Commons, Domestic Decisions,*" 133.

72. Ibid., 132.

73. Oran R. Young, Leslie A. King, and Heike Schroeder, *Institutions and Environmental Change: Principal Findings, Applications, and Research Frontiers* (Cambridge: Massachusetts Institute of Technology Press, 2008), 6–7.

74. Elizabeth R. DeSombre, *Domestic Sources of International Environmental Policy* (Cambridge: Massachusetts Institute of Technology Press, 2000), 17.