

Report: Overall Trends



# Climate Insights 2020

Surveying American Public Opinion on

Climate Change and the Environment

Jon A. Krosnick and Bo MacInnis

## About the Authors



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## About RFF

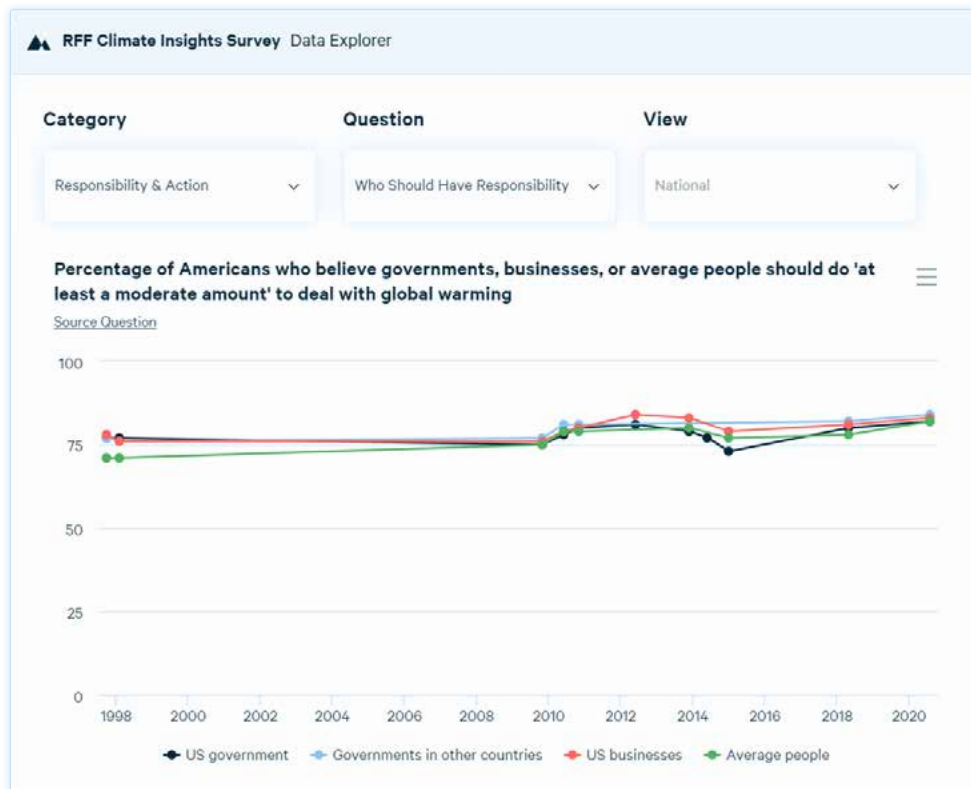
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## About the Project

This report is the first in a series by researchers at Stanford University, Resources for the Future, and ReconMR examining American public opinion on issues related to climate change—beliefs about existence and threat, as well as public support for government action and specific policy preferences. Since 1997, Stanford University Professor Jon Krosnick has explored American public opinion on these issues through a series of rigorous national surveys of random samples of American adults, often in collaboration with RFF.

For the 2020 iteration of the Climate Insights survey, 999 American adults were interviewed during the 80-day period from May 28, 2020 to August 16, 2020.

This Climate Insights report focuses on Americans' beliefs and certainty, as well as public opinion on the threats of climate change and who should be responsible to act to mitigate it. The next installment in this series will address American public opinion regarding natural disasters such as inland flooding and wildfires—a very real threat to many Americans. This series is accompanied by an [interactive data tool](#), which can be used to view specific data from the survey. Please visit [www.rff.org/climateinsights](http://www.rff.org/climateinsights) or <https://climatepublicopinion.stanford.edu/> for more information and to access the data tool, report series, blog posts, and more.



**Note:** Since 1997, Stanford University Professor Jon Krosnick has led surveys exploring American public opinion on issues related to global warming, human activity, government policies to address climate change, and more, through a series of rigorous national surveys of random samples of American adults. When this research program began, "global warming" was the term in common parlance. That term was used throughout the surveys over the decades and was always defined for respondents, so it was properly understood. In recent years, the term "climate change" has risen in popularity, so both terms are used in this report interchangeably. When describing survey question wordings and results, the term "global warming" is used, to match the term referenced during interviews. Empirical studies have shown that survey respondents interpret the terms "global warming" and "climate change" to have equivalent meanings (Villar and Krosnick 2011).

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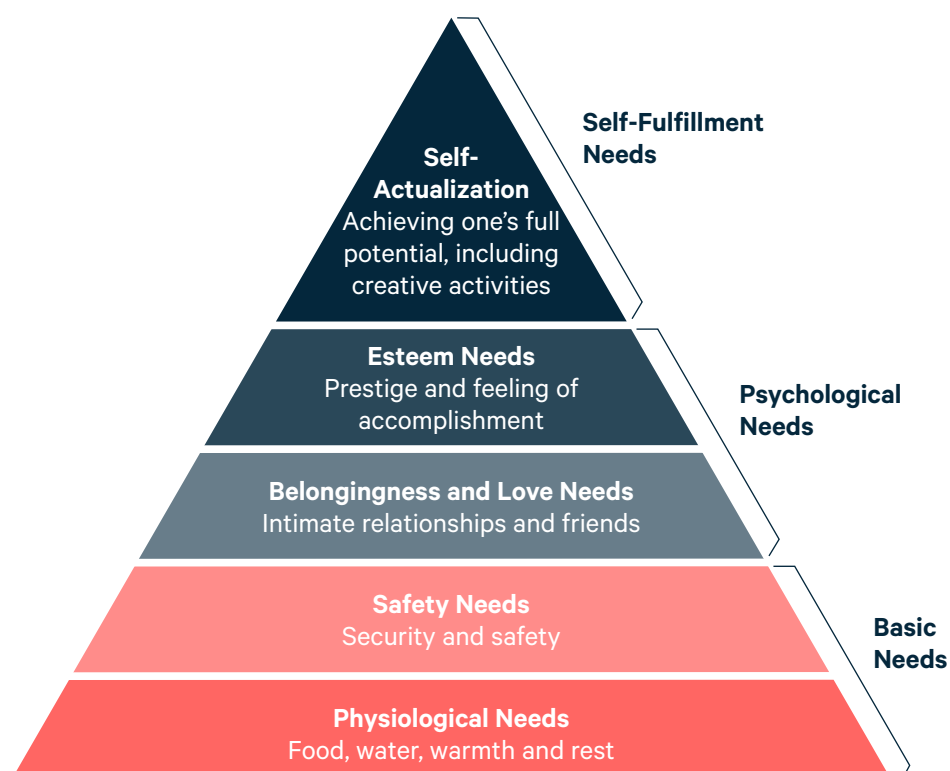
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## Introduction

Is concern about the natural environment a "luxury good"? According to one theoretical perspective, people in contemporary societies can afford to worry about protecting the planet's natural environment only if their basic survival needs have been satisfied. A plausible foundation for such an argument is American psychologist Abraham Maslow's "hierarchy of needs" (1943; 1954).

**Figure 1. Maslow's Hierarchy of Needs**



**Source:** Simply Psychology

Maslow posited that people are motivated by the desire to satisfy various sorts of needs, which have often been represented by a pyramid (Figure 1). Maslow called the lower levels of the pyramid "deficiency needs"—the basic requirements for survival that must be satisfied for people to be happy, including having enough food to eat, a place to sleep, and the security of feeling physically safe.

According to Maslow, until those basic needs are satisfied, an individual must focus on eliminating those deficiencies. Once those needs have been met, Maslow asserted, people have the opportunity to pursue psychic contentment in the form of friendships, intimate relations with others, and feelings of self-esteem and worthwhile accomplishment.

Only after the four lower tiers of needs have been met does an individual enjoy the luxury of worrying about the greater good of societies, said Maslow. And perhaps concern about the environmental health of the planet, in the present and in the future, is a possible subject of a person's attention only if all deficiency needs have first been satisfied.

The novel coronavirus pandemic and the economic crash in the United States in 2020 offer an opportunity to explore the impact of economic change on opinions about global warming. Does a sudden decline in the satisfaction of deficiency needs—loss of a job, diminished feelings of safety, reduced economic security—affect American concern about the natural environment, public support for efforts to protect the environment, and even public belief in the existence of warming?

In 2018, researchers at Stanford University, Resources for the Future (RFF), and ABC News conducted a national survey on the topic of climate change with questions about its existence, causes, and impacts, who should take action to address it, and more (RFF et al. 2018). The same questions were posed again in a new survey conducted by researchers at Stanford University, RFF, and ReconMR, with 999 American adults interviewed between May 28, 2020, and August 16, 2020. Comparing the 2018 and 2020 surveys allows us to assess whether the intervening economic upheaval would

- reduce the number of people who believe in the existence and threat of global warming or the certainty with which people hold those beliefs, perhaps to rationalize reduced support for government action on the issue;
- reduce support for a government effort to combat global warming generally, in order to redirect efforts to focus on the American economy and COVID-19;
- reduce support for specific government actions that might be implemented to combat global warming; and
- reduce willingness to fund the implementation of policies intended to mitigate global warming, perhaps due to less available money to make such payments.

This survey provides a glimpse into the collective American psyche during a unique time in the nation's history. The data from this survey show that, in spite of the array of social, economic, and public health issues affecting the United States today, considerable and sometimes huge majorities of Americans believe that global warming has been happening, will continue in the future, poses a threat, and requires ameliorative action.

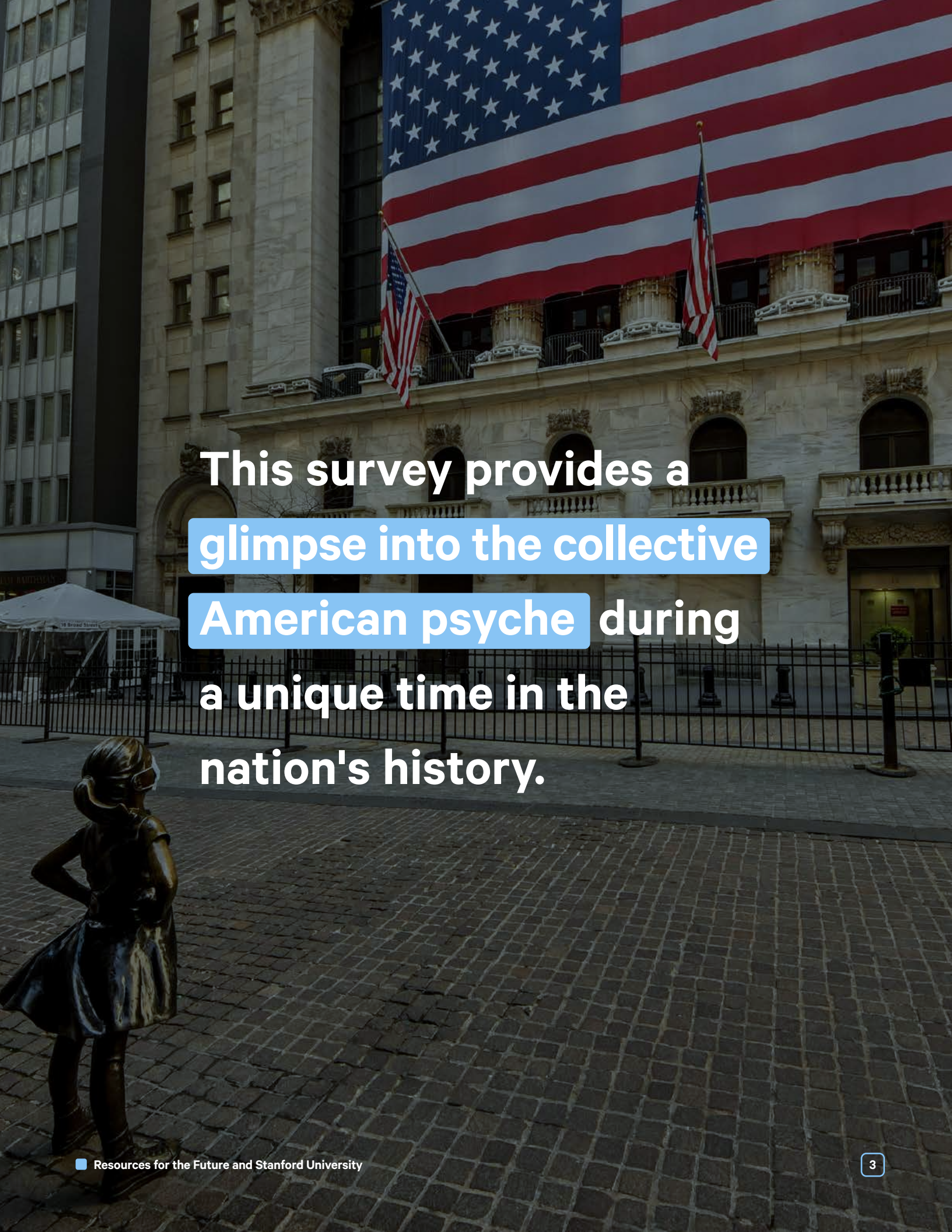
#### EXPERT INSIGHT

The COVID-19 pandemic has been a unique test for how people feel about climate change when faced with a different global crisis. The argument that we can't do anything about climate change without crashing the economy, or that we need to just focus on the pandemic and not do anything on climate right now simply doesn't resonate with Americans.

—**Ray Kopp**, RFF Vice President for Research and Policy Engagement





A large American flag is draped over the facade of a classical building, likely the U.S. Capitol. In the foreground, the bronze statue of a young girl in a red dress stands on a cobblestone plaza. The text is overlaid on the image, with some words highlighted in blue boxes.

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## Background

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The findings described here complement the work of several contemporary researchers who have studied the relationship between economic well-being and beliefs about global warming.

Maslow's theory, suggesting that the pursuit of economic well-being competes with advocacy for environmental protection, was the foundation of evidence offered in a 2011 paper in *Climate Change Economics* by economists Matthew Kahn and Matthew Kotchen. Their paper analyzes the frequency of Google searches between 2004 and 2010 for information about unemployment and information about global warming, on the assumption that searches on a topic reveal the extent of public concern about the topic (Kahn and Kotchen 2011). They conclude that "recessions increase concerns about unemployment at the expense of people's interest in climate change—in some cases leading them to deny its existence" (2010).

However, Google searches do not precisely quantify the proportion of Americans concerned about a national problem or the extent of their concern. Taken at face value, Google searches are simply queries to obtain information. They reveal a perceived deficiency of knowledge and a desire to enhance understanding. The same person might conduct multiple searches, which would increase the total count without indicating concern by more people. This methodology seems imprecise at best, as a way to measure public opinion.

Kahn and Kotchen (2011) also report evidence based on national survey data about the American "Great Recession" collected in 2008 and late 2009 through early 2010. Interestingly, unemployed Americans were no more or less likely than the employed to express belief in the existence of global warming, certainty about that belief, support for an American effort to combat warming, or support for more congressional action on the issue. This evidence refutes the most plausible version of the hierarchy of needs hypothesis: that economic suffering by an individual reduces his or her concern about environmental protection and reduces even the belief in the existence of environmental threats.

However, the researchers did find a correlation between state unemployment levels and residents' beliefs—respondents living in states with smaller decreases in employment levels tended to believe in global warming more than people living in states with greater decreases in employment. Thus, states with bigger increases in unemployment manifested bigger declines in belief in the existence of global warming, in certainty, and in support for ameliorative action.

This finding, which suggests that only changes in state-level macroeconomic conditions predict opinion change, might be viewed as consistent with an alternative, more sociotropic hypothesis—that people's priorities for the collectives to which they belong emphasize satisfying lower levels of Maslow's hierarchy for everyone before prioritizing the satisfaction of higher-level needs (Kinder and Kiewiet 1981).

But not all evidence is consistent with this reasoning. For example, a 2008 paper by Hanno Sandvik found that in a comparison of 46 countries, "gross domestic product is ... negatively correlated to the proportion of a population that regards global warming as a serious problem" (1). Thus, better economic conditions predicted less concern about global warming, rather than more concern. Complicating matters further, an analysis of data from the same surveys in 47 countries found that GDP per capita did not predict rated seriousness of global warming for the world (Kvaloy et al. 2012).

Another theory, the Gateway Belief Model, asserts that perceptions of agreement among climate scientists are important determinants of public attitudes and beliefs. In 2015, van der Linden and colleagues proposed this model, stating that Americans are more likely to accept climate change science if they are convinced that there is a high scientific consensus among climate researchers. Convincing Americans that increased scientific consensus among scientists who study climate change leads to more acceptance of that viewpoint among the general public. However, subsequent studies have failed to confirm that claim (Kerr and Wilson 2018; Kahan 2017). The 2020 survey has offered the opportunity to test this hypothesis again.

The new survey by researchers at Stanford University, Resources for the Future, and ReconMR builds on this array of research, with recent data showing that the COVID-19 crisis has not decreased American "green" attitudes and belief in global warming's existence and threat. At odds with Maslow's hierarchy of needs, the findings in this survey offer a new perspective on how global warming fits into individual and national priorities during a time of hardship.

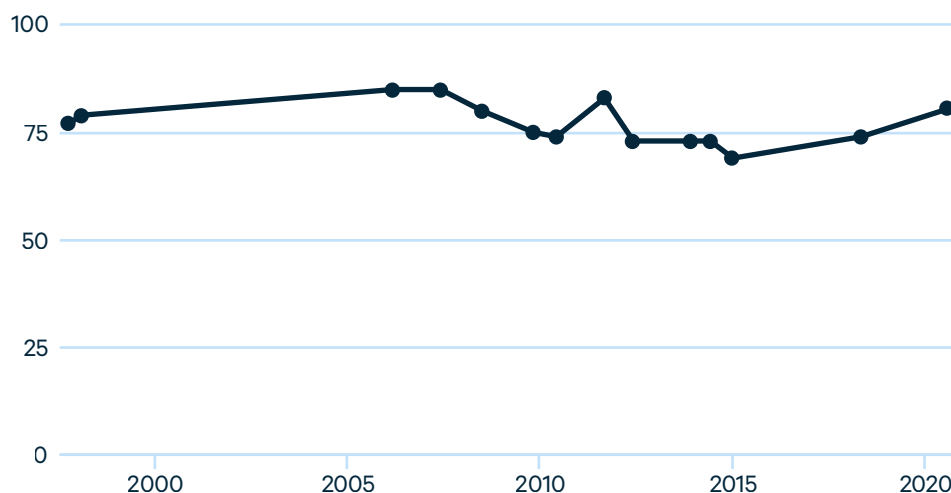
This is the first installment in a series of thematic reports analyzing the results from this survey. Described here are only a small subset of the survey's findings, with subsequent reports in this series providing more results.

## Fundamentals

Belief in the existence of global warming is near an all-time high, and people have become increasingly certain of their beliefs about whether Earth has or has not been warming in the past and will or will not warm in the future.

In 2020, 81% of Americans believed that Earth has been warming over the past 100 years—among the largest percentages observed since this surveying began in 1997, when it was 77%.

**Figure 2. Percentage of Americans who believe Earth's temperature "has probably been increasing" over past 100 years**



### EXPERT INSIGHT

The COVID-19 pandemic, the cratering economy, racial injustice, and so many other pressing societal issues have captured national attention and could be expected to shift focus away from thinking and learning about climate change. Nevertheless, the fraction of the American public who believes global warming is probably happening, a broad way of gauging belief in climate change, is both high and stable over time at around 80% over two decades and 81% this year.

That this percentage is so high is indicative of bipartisan support, as the fraction of Americans who are Republicans is higher than 20%. This is good news for public support for future actions on climate change mitigation and adaptation.

—Alan Krupnick, RFF Senior Fellow

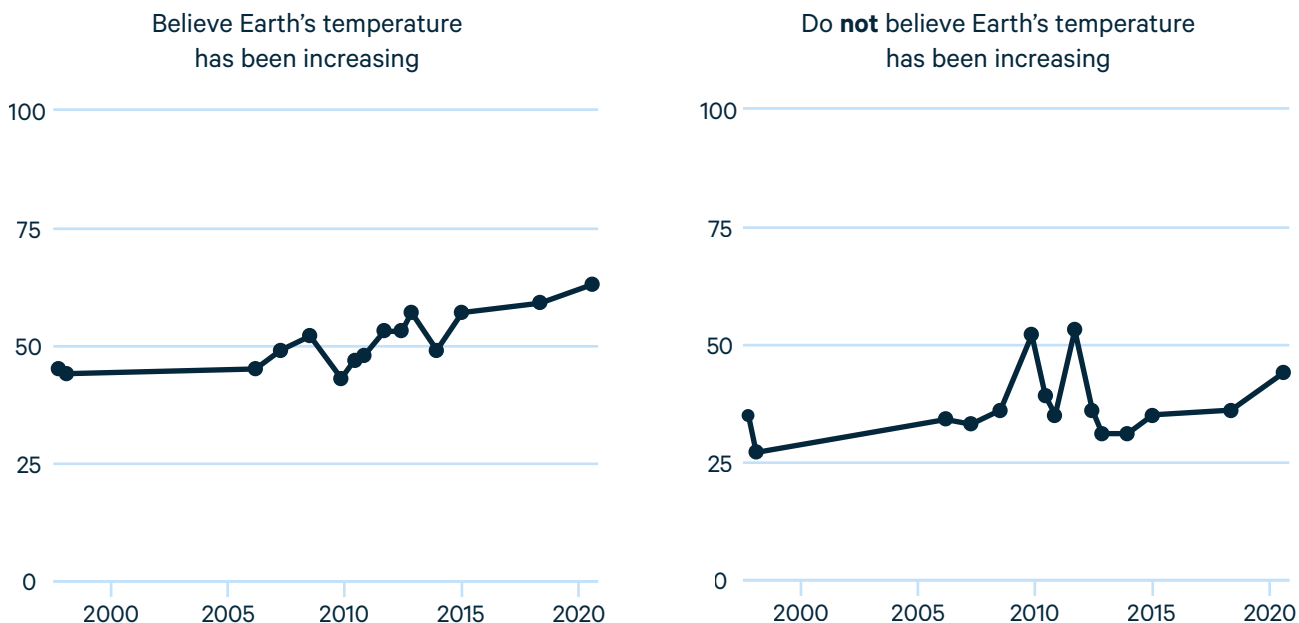


## Certainty is on the rise, reflecting increasingly entrenched views.

Among the individuals who do and do not believe that global warming has been happening, the proportions of people who are highly certain of their beliefs about global warming's existence has increased over the past 23 years. Among people who believed that global warming has been occurring, the proportion of highly certain individuals was 45% in 1997 and has reached an all-time high of 63% in 2020. Among people who have denied that global warming has been happening over the past 100 years, certainty has also escalated, reaching 44% in 2020.

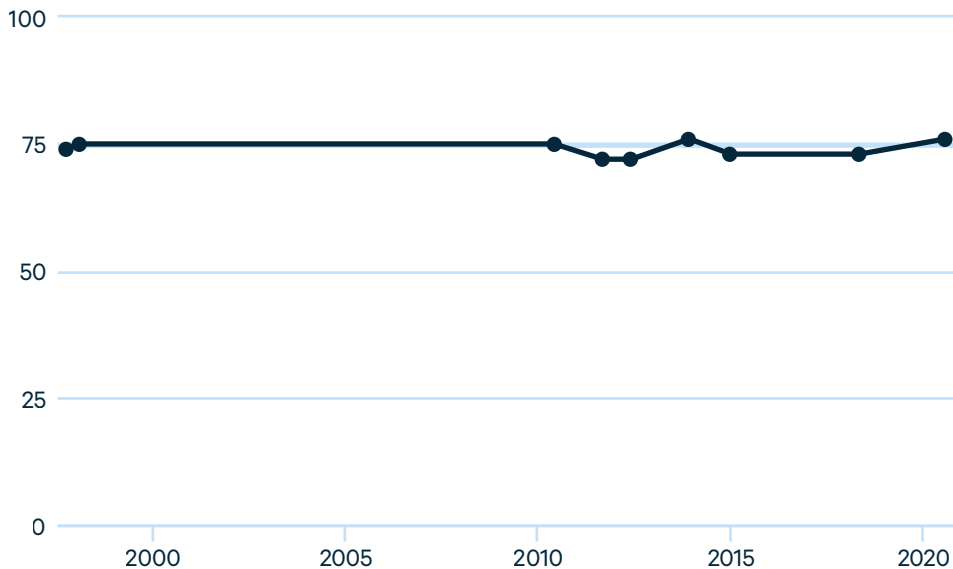
Interestingly, over the past 23 years, there have been three spikes in certainty among people who denied that Earth has been warming—all following striking declines in average global temperature. This is consistent with the hypothesis that recent changes in average global temperature are important determinants of what we call "existence beliefs" among people who do not trust scientists who study Earth's climate.

**Figure 3. Of the Americans who believe Earth's temperature has or has not been increasing, percentage who are extremely or very sure**





**Figure 4. Percentage of Americans who think Earth's temperature will probably go up over the next 100 years**



In 2020, 76% of Americans believe that Earth's temperature will probably go up over the next 100 years. Scientists agree—according to one "intermediate" model by the Intergovernmental Panel on Climate Change, global average temperature is likely to increase by 2.0 to 4.7°F by 2100 (IPCC 2014). Although that may not sound like much, a global temperature increase of this caliber would be accompanied by significant sea level rise, ocean acidification, and an increase in the strength and frequency of natural disasters.

It is interesting to note that more people—roughly 80% of Americans over the past two decades—believe that global temperature has been warming over the past 100 years. Global warming is not something that most Americans believe started recently.

Even if all carbon dioxide emissions ceased today, the global average temperature would continue to increase due to the greenhouse effect, in which gases such as carbon dioxide and methane trap and amplify heat in Earth's atmosphere. The gases that we released in the past, and are releasing right now, will remain in the atmosphere for up to a thousand years. But how much Earth will warm depends on a number of factors such as future population growth, energy choices, policy decisions, and deforestation rate.

**Around three quarters of Americans think that Earth will warm over the next century—about the same proportion as in 1997.**

# In 2020, people are more sure than ever about whether temperatures will rise in the future.

76% of respondents said that they thought global temperatures will probably increase over the next 100 years if nothing is done to stop it. Among this group of Americans, 68% were very or extremely certain.

Though there have been no notable changes in the percentage of Americans who believe Earth will warm, this high level of certainty is consistent with the general increase in Americans' certainty of their opinions on this issue.

Certainty also increased slightly in 2020 among people who believed that warming will not occur over the next 100 years: 41% of these respondents were highly certain in 2020.

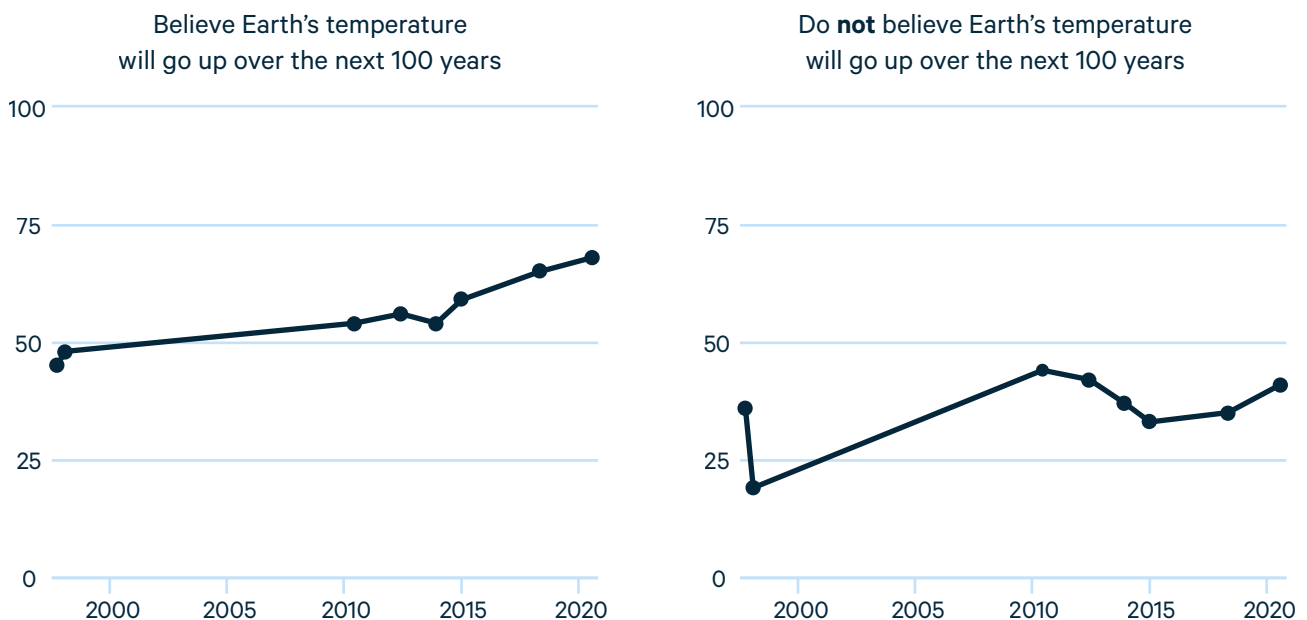
## EXPERT INSIGHT



The percentage of Americans who think that the world's temperature will probably go up over the next 100 years has only fluctuated slightly—between 72% and 76%—from 1997 to 2020. While the certainty of those who believe the temperature will not go up has, overall, fluctuated trendlessly, the certainty of those who believe the temperature will go up is clearly trending up. The question to be answered, then, is if—and how—this increased certainty will impact voting behavior.

—**Roger Cooke**, RFF Chauncey Starr Senior Fellow

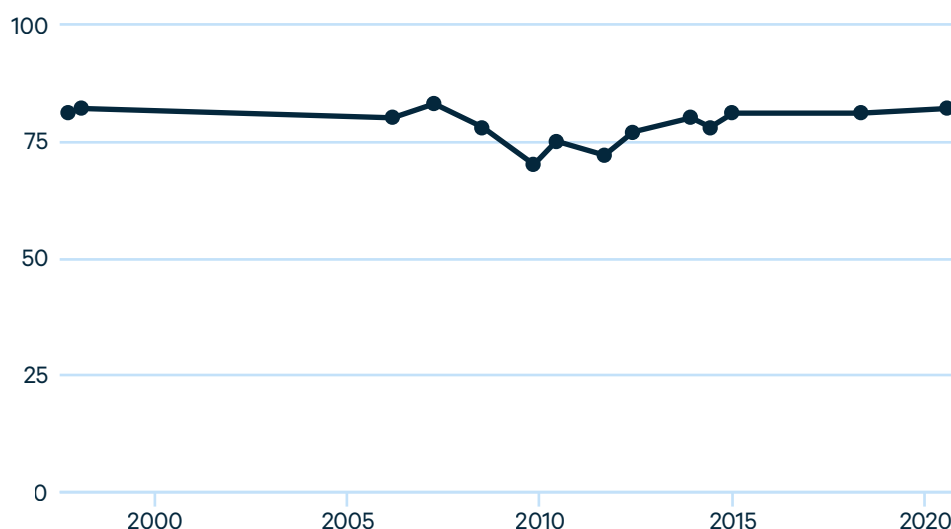
**Figure 5. Of the Americans who think Earth's temperature will or will not go up over the next 100 years, percentage who are extremely or very sure**



## Cause of Warming

The percentage of Americans who believe humans have caused global warming has not changed notably during the twenty-first century. When asked whether global warming has been caused primarily by human activity, primarily by natural processes, or by both about equally, 82% of respondents pointed to human activity in 2020—nearly the same as the 81% observed in 1997.

**Figure 6. Percentage of Americans who believe human action has been at least partly causing global warming**



### EXPERT INSIGHT

The percentage of Americans who believe Earth has been warming over the past 100 years, and the proportion of Americans who attribute this warming to human activity, has remained fairly steady over the last 23 years. In one sense, this consistency could be seen as a failure to inform an ever-growing share of the American public that human activities are the leading cause of global warming.

But on the other side of the coin, the consistently high percentage of Americans who understand the science can be seen as a success in the face of increasing political polarization and climate skepticism from prominent voices, including President Trump. In this light, public opinion could be seen as "weathering the storms" of increased politicization and growing climate denial.

—**Daniel Raimi**, RFF Senior Research Associate



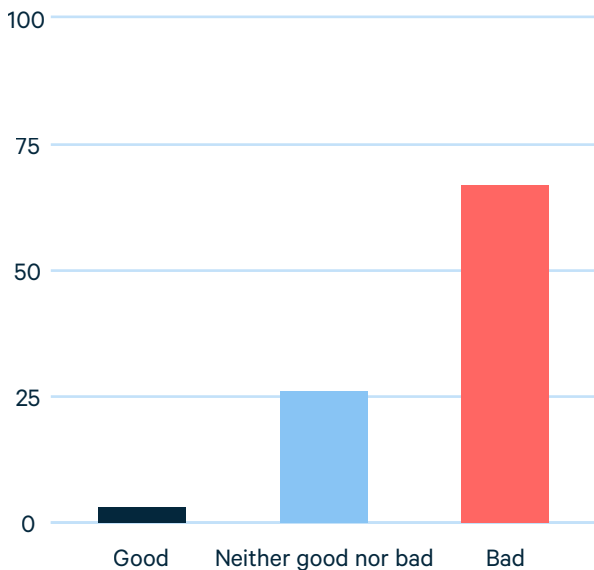


When asked what has  
been causing global  
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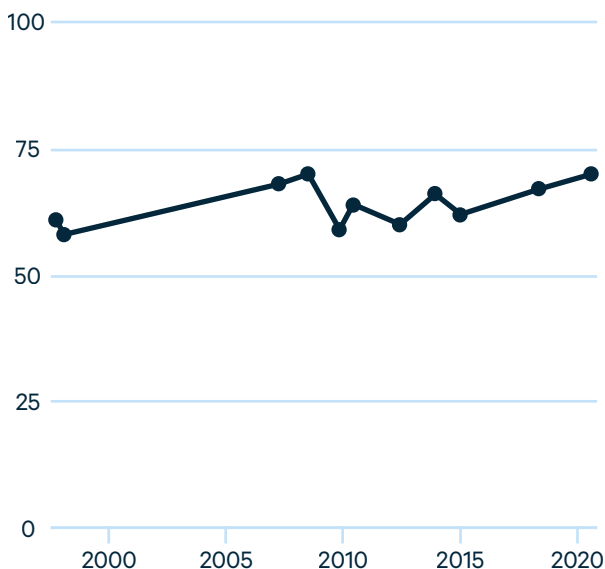


## Threat, Seriousness, and Impact

**Figure 7. Percentage of Americans who believe the increase in global temperatures over the past 100 years was good or bad**



**Figure 8. Percentage of Americans who believe a 5°F global temperature increase in 75 years would be "bad"**



## Is an increase in average global temperature good or bad?

Perceived threat of warming was measured in multiple ways, one of which involved asking respondents whether an increase in global temperatures over the past 100 years has been good, bad, or neither good nor bad. 67% of respondents said "bad" in 2020, compared to 51% in 2012, a notable increase.

When asked a similar question about future warming of 5°F 75 years from now, 70% of respondents said that would be "bad," up from 61% in 1997.

### EXPERT INSIGHT



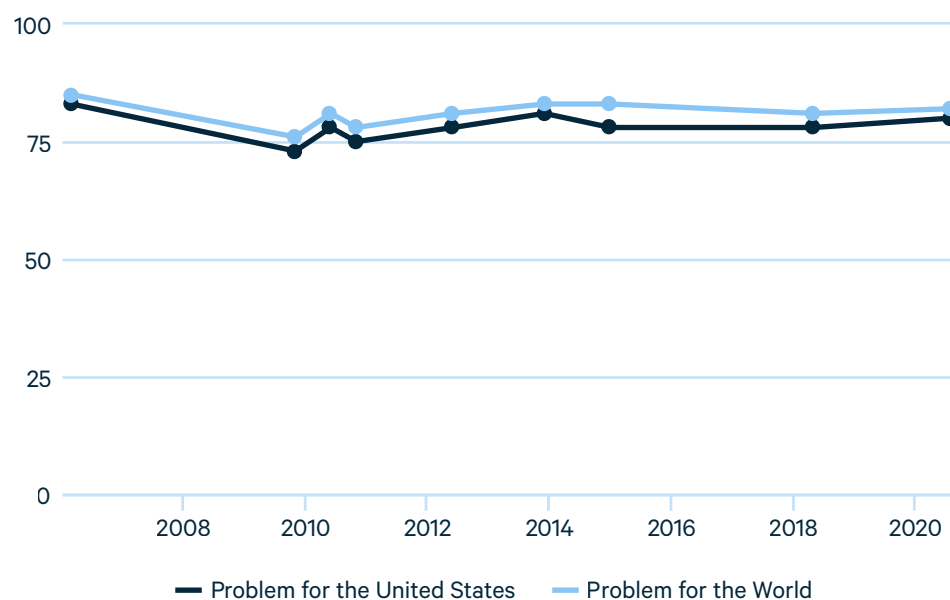
A 5°F change on a summer day may not be very noticeable to us, but on a global scale, a 5°F (2.8°C) average temperature increase would have myriad detrimental effects on both people and wildlife. Ecosystems would become disassembled as species' climatic ranges shift, with many species losing a significant amount of their current ranges. A warming climate and resulting sea level rise will have massive impacts on natural, rural, and urban coastal areas worldwide from increased inundation, storm surge, and salinity effects. An increase of 5°F—especially in a period as relatively short as 75 years—would expose much of humanity to life-altering problems such as heatwaves, droughts, and more frequent extreme weather.

—Rebecca Epanchin-Niell, RFF Senior Fellow

# Is climate change a serious problem for people, the country, and the world?

The proportion of Americans who believe that global warming will be a very or somewhat serious problem for the United States in the future if nothing is done to stop it was 80% in 2020, slightly down from the all-time high of 83% in 2006. More Americans said that global warming will be a very or somewhat serious problem for the world if nothing is done to stop it: 82% in 2020, also down slightly from the all-time high of 85% in 2006.

**Figure 9. Percentage of Americans who believe global warming will be a very or somewhat serious problem for the United States or the world**



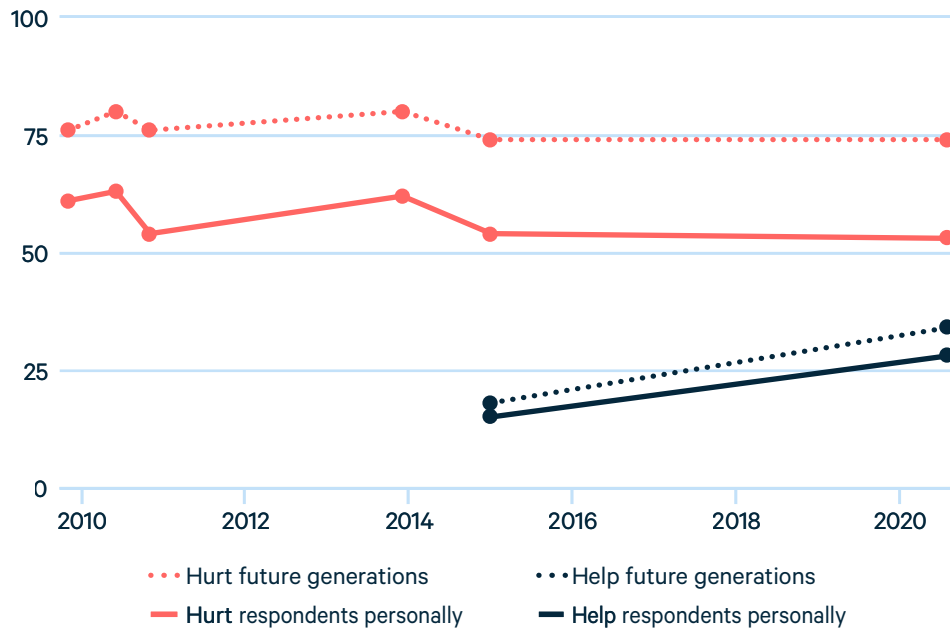
## EXPERT INSIGHT

Americans consistently state that climate change will be a problem for the United States and the world. They also consistently state that the problem will be more substantial for the world as a whole than just the United States. This perception is consistent with the large body of research demonstrating that while the bulk of the problem has been caused by high-income nations, the bulk of the suffering will be borne by low-income nations, particularly low-income individuals in the global south. While the effects of climate change will be substantial here at home, it's important to remember that climate change is, among many other things, an enormous injustice.

—**Daniel Raimi**, RFF Senior Research Associate



**Figure 10. Percentage of Americans who think that global warming will hurt/help future generations or hurt/help them personally at least a moderate amount**



In 2020, only 53% of respondents said that they believe warming will hurt them at least a moderate amount, down from the all-time high of 63% observed in June 2010. And 28% of respondents in 2020 said that they expect global warming to help them personally at least a moderate amount, up from 15% in 2015.

Consistent with the notion that people expect the effects of warming to appear gradually over coming decades, more people believe that warming will affect future generations more than it will affect them personally. In 2020, 74% of respondents said they expect warming to hurt future generations at least a moderate amount, down from 80% in June 2010 and 2013. And the proportion of respondents who said global warming will help future generations at least a moderate amount rose from 18% in 2015 to 34% in 2020.

#### EXPERT INSIGHT

The percentage of Americans who consider global warming "extremely personally important" has risen over the past 10 years, peaking today at 25 percent. But at the same time, 74 percentage of Americans believe that global warming would hurt future generations at least a moderate amount. There is an obvious conclusion here about the size of the American soul and our drive to help those who come after us.

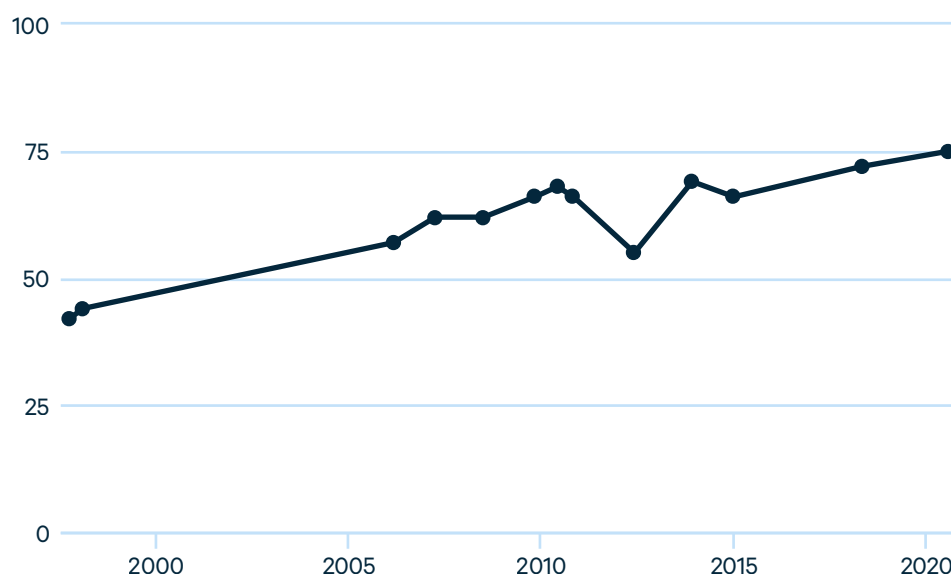
—**Roger Cooke**, RFF Chauncey Starr Senior Fellow



## Issue Engagement

From 1997 to 2020, Americans believe they have become more and more knowledgeable about global warming. In 1997, 42% of respondents said they knew at least a moderate amount about the issue, and that figure rose to an all-time high of 75% in 2020.

**Figure 11. Percentage of Americans who feel they know at least a moderate amount about global warming**



### EXPERT INSIGHT

A record-high number of Americans believe that they know at least a moderate amount about global warming. Interestingly, it appears that increased knowledge—which has grown by almost 79% since 1997—has not been accompanied by a similar increase in the number of Americans who believe that climate change is happening.

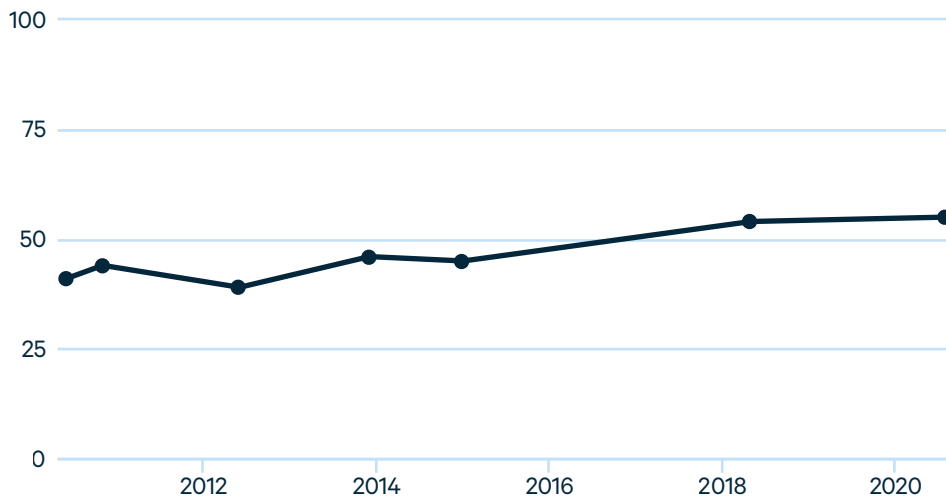
One potential theory is that this increase in perceived knowledge is the result of confirmation bias. As people are increasingly able to seek out information that aligns with their beliefs, climate believers and deniers alike are able to find information that confirms their views. Therefore, people believe they know more about climate change without actually changing their opinions.

—**Kristin Hayes**, RFF Senior Director for Research and Policy Engagement





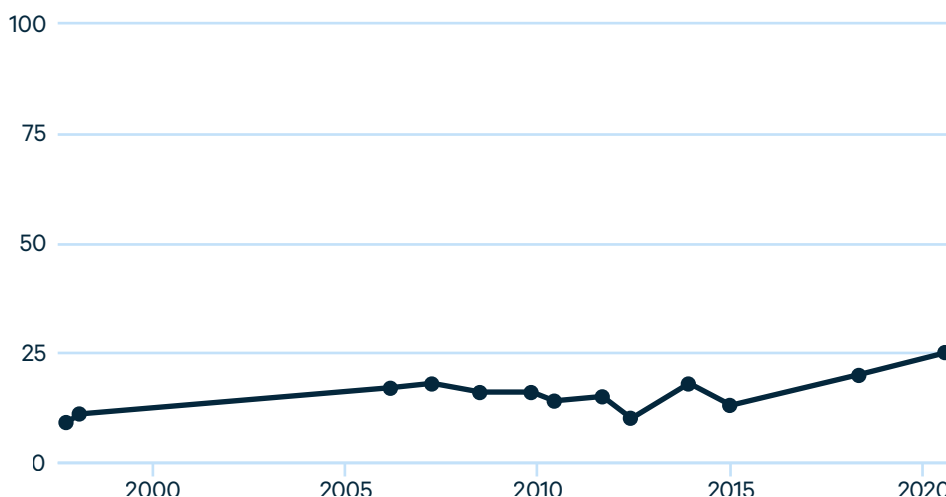
**Figure 12. Percentage of Americans who have very or extremely strong opinions on global warming**

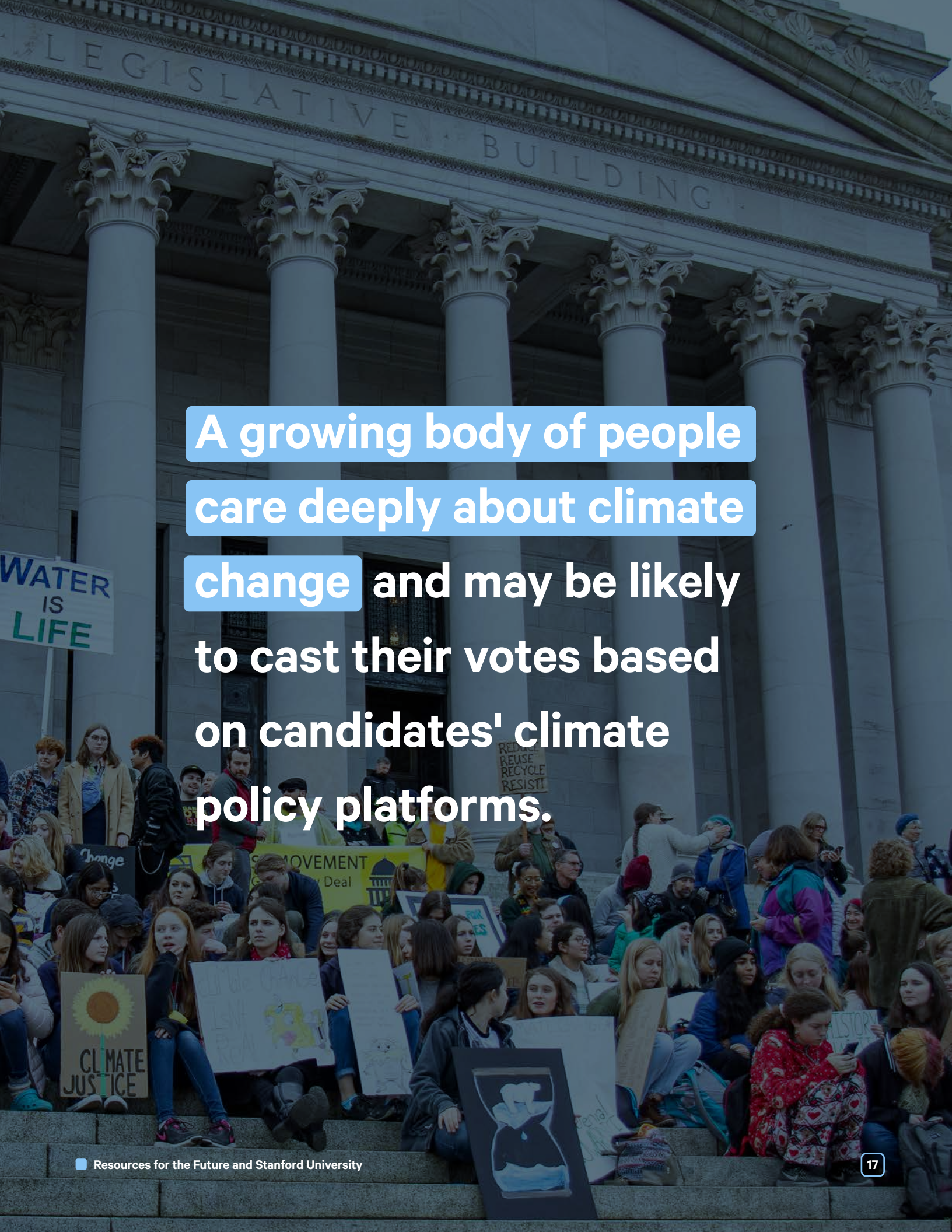


One indicator of the crystallization and, consequently, the impact of people's opinions on an issue, is the strength with which people say they hold those opinions. The proportion of people who said their opinions on global warming were extremely or very strong was 55% in 2020, up from 41% in June 2010.

For most policy issues, there is a small group of people known as the "issue public" who consider the matter to be of great personal importance (Krosnick 1990). These are the people who pay careful attention to news on the subject, think and talk a lot about it, and give money to lobbying groups to influence policy. In 2020, the global warming issue public made up an all-time high of 25% of Americans, up from 9% in 1997, showing that a growing body of people care deeply about climate change and may be likely to cast their votes based on candidates' climate policy platforms.

**Figure 13. Percentage of Americans who think global warming is extremely personally important (the global warming "issue public")**



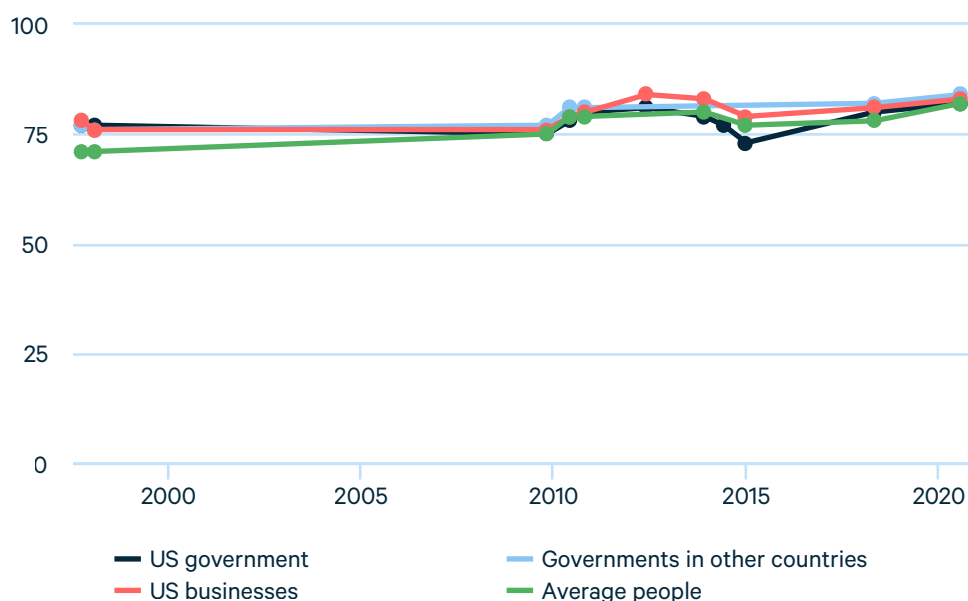


A growing body of people  
care deeply about climate  
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## Desired Effort to Deal with Global Warming

In 2020, 82% of respondents said that the US government should do at least a moderate amount about global warming—an all-time high for public opinion on the issue. The proportions of respondents who believe that governments in other countries, businesses, and individuals should do at least a moderate amount to deal with climate change are similar. For all groups, more respondents expect at least a moderate amount of action than in 1997. The increase is most notable for expectations of the US government and of average people.

**Figure 14. Percentage of Americans who believe governments, businesses, or average people should do "at least a moderate amount" to deal with global warming**



### EXPERT INSIGHT

The results show that the vast majority of Americans (over 80%) understand that dealing with global warming requires actions by individuals, by businesses, and by government—both in the US and internationally. They understand that it is not just one of these stakeholders or decisionmakers that needs to play a role in cutting emissions and mitigating climate change, but rather multiple levels of society.

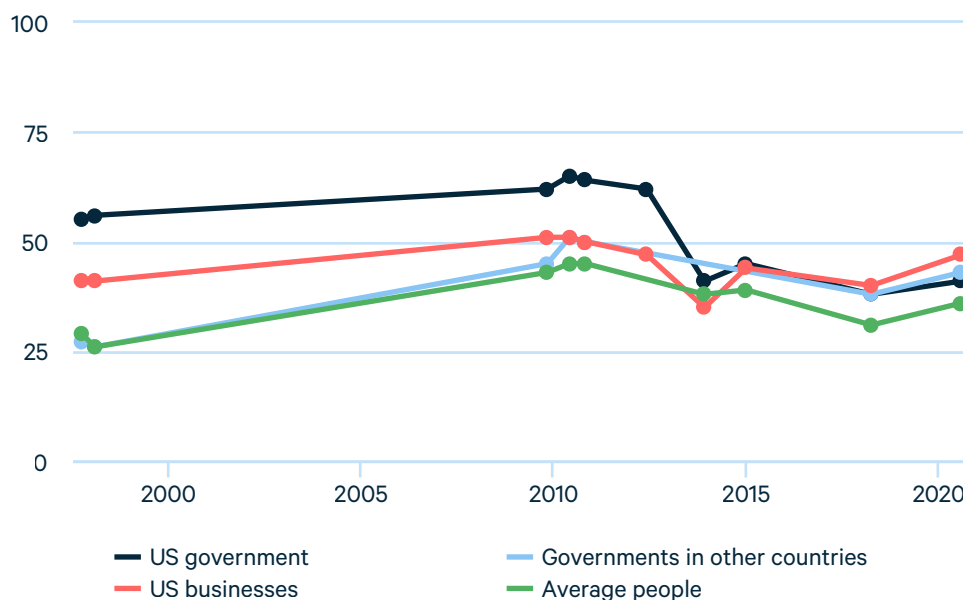
—**Richard Newell**, RFF President and CEO



# Many people want more action on climate than they think they're getting.

Whereas more than 80% of people think governments, businesses, and people should be doing at least a moderate amount to deal with climate change, far fewer believe that these groups are actually doing that much—between 35% and 45% of people think these groups are currently doing at least a moderate amount to deal with climate change.

**Figure 15. Percentage of Americans who believe that governments, businesses, or average people are currently doing "at least a moderate amount" to deal with global warming**



## EXPERT INSIGHT

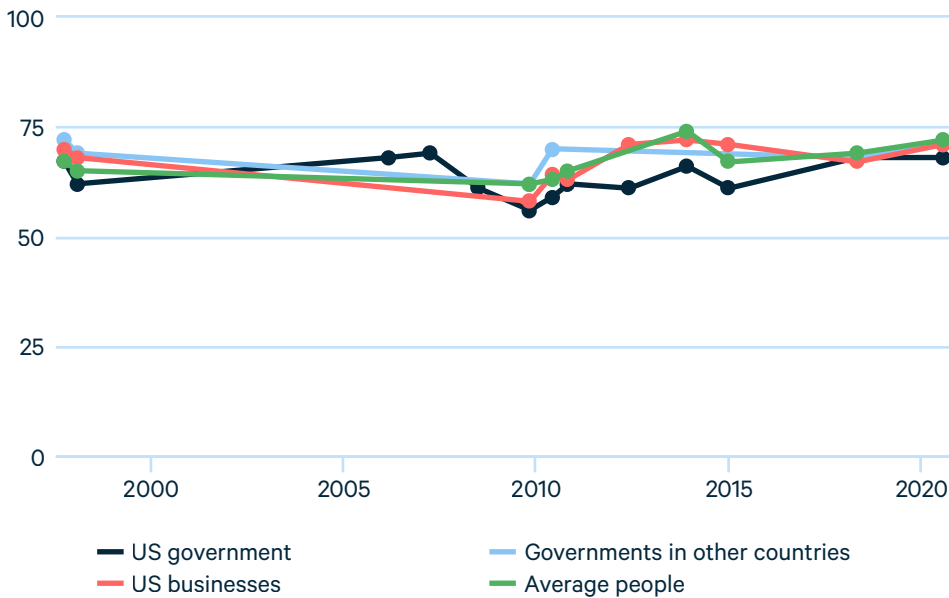
In a business climate awash with new information and ideas, companies are always looking for ways to stand out in the field. As new digital platforms have created unique environments for fostering conversation between firms and their audiences, American businesses have placed a growing emphasis on corporate social responsibility. Potential consumers want to know—what does this company stand for? Does it hold itself accountable for its actions? From brands donating to support local and national causes, to businesses advocating for climate justice, Americans increasingly expect the companies they patronize to not only supply goods, but to work toward the common good.

—**Justine Sullivan**, RFF Director of Communications





**Figure 16. Percentage of Americans who believe that governments, businesses, or average people should do more to deal with global warming**



Most people want more action on climate change from each of the four groups mentioned. When analyzed person by person, the proportion of people who believe that the US government, governments in other countries, businesses, or average people should do more to deal with climate change was approximately 70% in all categories. This desire for increased effort remains about what it was in 1997.

#### EXPERT INSIGHT



We have seen a dramatic example of how sudden action by multiple stakeholders can have a significant impact on emissions over the last six months. The COVID-19 pandemic has created an unprecedented global scenario for energy use and emissions, as examined in our 2020 Global Energy Outlook (GEO), which provides a review of energy market projections.

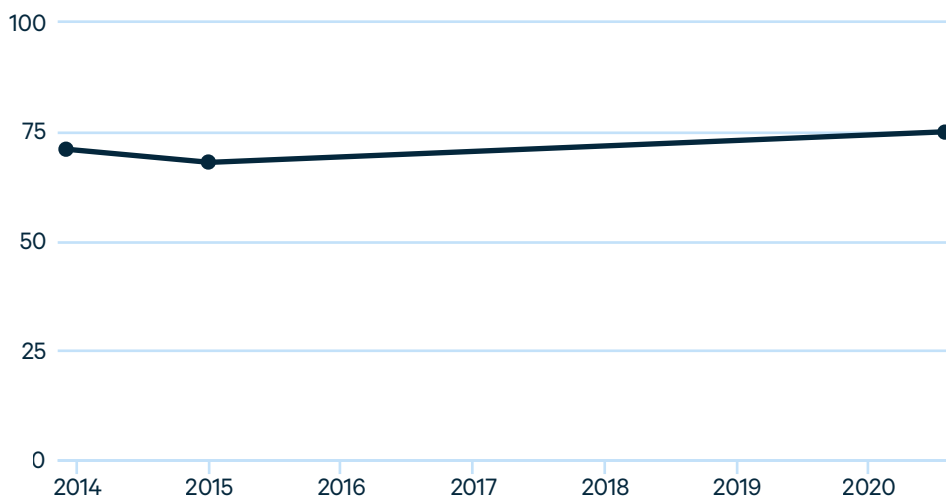
As our report explains, as businesses were shuttered due to COVID-19 and individuals restricted travel, energy demand has contracted sharply, with some projections estimating that emissions could fall by roughly 8% this year, returning to their 2010 levels. However, absent substantial changes in public policies to address climate change, a return to economic growth likely means a return to emissions growth. Projections suggest that the world may be on the cusp of its first true energy transition, but more ambitious government policies and technological innovations are needed to satisfy the energy demands of a growing world while also achieving long-term environmental goals.

—**Richard Newell**, RFF President and CEO

## Personal Observations of Recent Weather

When asked in 2020 whether they had personally observed any effects of global warming, 75% of respondents said they had—about the same as in 2013 (71%).

**Figure 17. Percentage of Americans who believe that they have seen effects of global warming**




Climate-related events close to home have the potential to change local opinions on climate change. For example, in 2018, Hurricane Florence hit the Southeastern United States in mid-September, leaving a path of destruction in its wake. In eastern North Carolina, 30 inches of rain fell and major highways were turned into rivers. After the storm, a poll from Elon University noted that 52% of North Carolinians believed that a negative impact to coastal communities from climate change was "very likely." This increased from 45% the year prior, in 2017 (Husser et al, 2018).

### EXPERT INSIGHT

Californians have been seeing the effects of climate change through, among other things, wildfires that have grown in both size and number. Even accounting for trends in wildfire activity over the past 30 to 40 years, California's recent wildfires are far outside the norm. This month, two of the three largest wildfires in California history have burned separate parts of the state. And five of the ten most destructive fires in California history have taken place in just the last four years.

—**Matthew Wibbenmeyer**, RFF Fellow

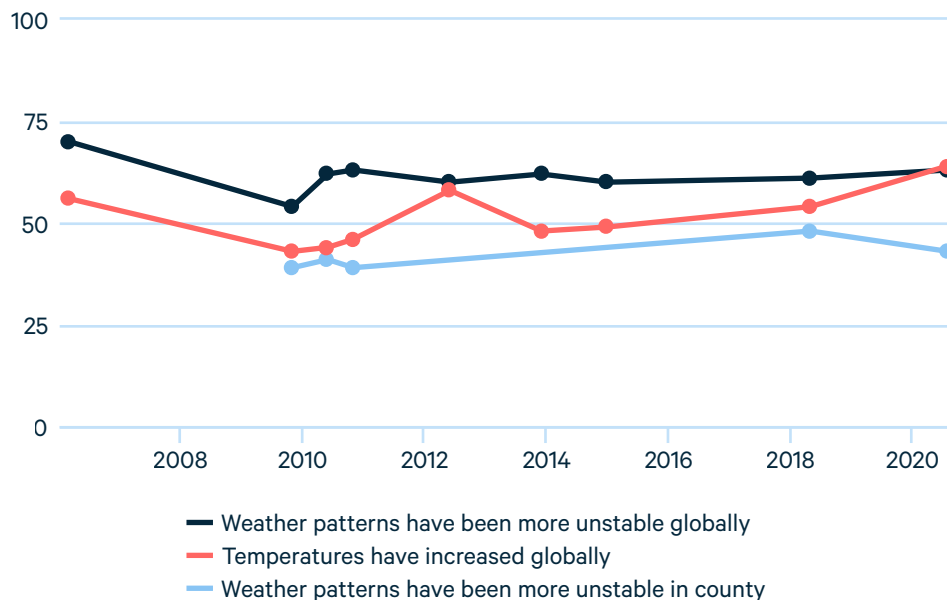




**Three in four Americans  
say they have personally  
observed effects of global  
warming.**

# More people are noticing more changes in global weather and temperature than in local weather.

**Figure 18. Percentage of Americans who think weather patterns or average world temperatures have been more unstable or temperatures have increased over the last three years**



## Global Weather Patterns

In 2020, 63% of respondents said that weather patterns around the world had been more unstable over the last three years than before that, down from the 70% observed in 2006.

## Global Temperatures

In 2020, 64% of respondents said that world temperatures had been higher during the past three years than before—an all-time high and a 10 percentage point increase from two years before.

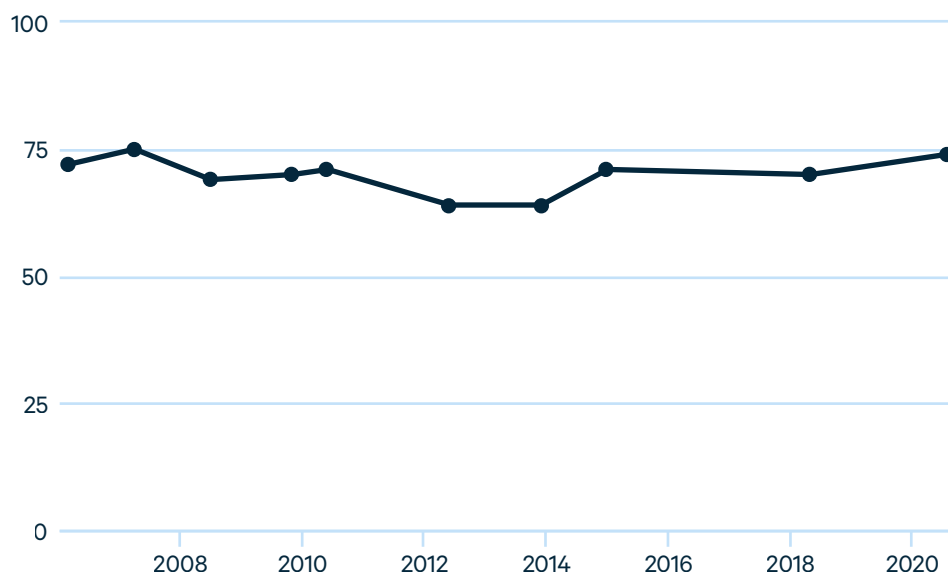
## Weather Patterns in the Respondent's County

In 2020, 43% of respondents said that weather patterns in the county where they lived were more unstable during the last three years than before that—about the same as the 39% observed in 2009.

## Trust In and Agreement among Climate Scientists

In 2020, 74% of respondents said they trust what scientists say about the environment at least a moderate amount—about the same as the 73% observed in 2006. In fact, no notable or sustained change in trust in environmental scientists occurred over the interim period, despite visible efforts to discredit scientists.

**Figure 19. Percentage of Americans who trust what scientists say about the environment at least a moderate amount**



### EXPERT INSIGHT

Rather than providing what the public might consider "definitive answers," scientists regularly couch findings with uncertainty. This uncertainty is often perceived by non-scientists as a lack of clarity and agreement, feeding the idea that disagreement among scientists should raise questions of trust.

In addition, climate science doesn't happen in a vacuum. The public is also confronting disagreements around the coronavirus, vaccines, pesticides, and any number of issues where the scientific findings should drive the conclusions. But whose science?

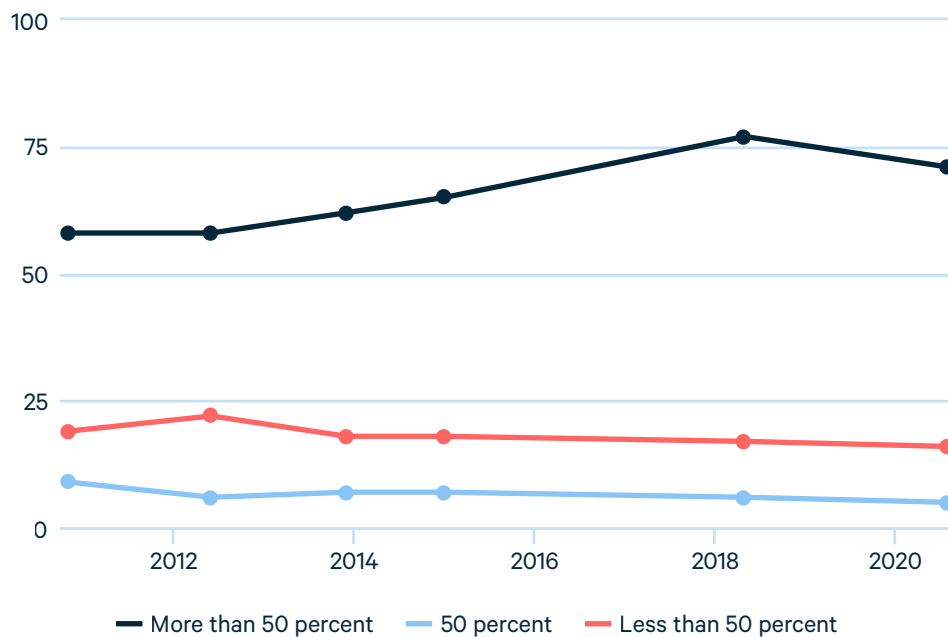
—Ann Bartuska, RFF Senior Advisor



## More people think scientists agree, but that is not reflected in the number of people who believe in climate change.

Perceptions of agreement among climate scientists have been increasing steadily since 2010. In 2020, 71% of respondents said that more than 50% of climate scientists agree that the planet has been warming, up from 58% in 2010. If this is indeed a gateway belief, we would expect to have seen dramatic increases in the opinions explored in this report. But no such dramatic increases appeared, adding further disconfirmatory evidence to the literature.

**Figure 20. Percentage of Americans who believe that more than, less than, or exactly 50% of climate scientists believe that global warming has been happening**





## Conclusion

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The results from this survey illustrate that, despite numerous efforts over the past two decades to change public opinion, Americans' views on climate change have been remarkably consistent. This finding is congruous with a pattern characterized in Page and Shapiro's landmark book, *The Rational Public* (1992). These researchers showed that, for numerous important issues in American politics, public opinion has changed extraordinarily slowly through the decades—if at all. As we see here, attitudes toward climate change have the same inertia.

As in 1997, the 2020 survey results show considerable and sometimes huge majorities expressing what might be called "green" views on climate change and related issues. These high levels of agreement are not often seen in American politics these days, and the coherent response identifies an arena that crosses party lines. This is the sort of public opinion that policymakers hope for, so that they can move forward with policymaking with the support of a large swath of their constituents. But although the majority of Americans believe that something should be done about climate change—whether it be by the federal government, world leaders, businesses or individuals—the details of how that something should be done have proven themselves to be a point of continued political contention.

Even with so much evidence of continuity over time, we see signs of change in this survey. In particular, we see Americans believing that they know more about this issue and are more certain of their opinions than in the past. And strikingly, more Americans than ever before consider this issue to be extremely important to them personally.

Nearly all the responses shown by the graphs in this report show an increase in concern about climate change and the need for action over the past two years, with only two graphs showing a decrease in concern. This is clear disconfirmation of the expectation that 2020's economic downturn would cause declines in these percentages. Thus, concern about the environment seems not to be a luxury good.

Furthermore, the results here refute the theory that perceptions of agreement among climate scientists about the existence of global warming are important determinants of public attitudes and beliefs. Between 2012 and 2018, when perceptions of agreement among scientists rose, no notable corresponding changes in public opinion occurred. And between 2018 and 2020, when perceptions of agreement among scientists fell slightly, other climate-related opinions actually rose.

This sort of evidence helps scholars of public opinion to better understand the American public—and helps Americans to better understand themselves. We hope as well that this evidence helps inform policymakers about American public opinion when leading the nation into the future.

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