CLIMATE CHANGE IN THE AMERICAN MIND

May 2017



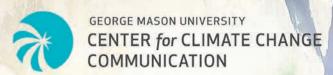


Table of Contents

Intr	oduction	2
Key	Findings	3
	Global Warming Beliefs	
2.	Worry About Global Warming	
	Perceived Risks of Global Warming	
	Personal and Social Engagement with Global Warming	
	Motivations to Take Action to Reduce Global Warming	
App	oendix I: Data Tables	26
App	oendix II: Survey Method	44
App	pendix III: Sample Demographics	46





Introduction

This report is based on findings from a nationally representative survey – *Climate Change in the American Mind* – conducted by the <u>Yale Program on Climate Change Communication</u> (climatecommunication.yale.edu) and the <u>George Mason University Center for Climate Change Communication (climatechangecommunication.org</u>). Interview dates: May 18 – June 6, 2017. Interviews: 1,266 Adults (18+). Average margin of error +/- 3 percentage points at the 95% confidence level. The research was funded by the 11th Hour Project, the Energy Foundation, the Grantham Foundation, and the MacArthur Foundation.

Principal Investigators:

Anthony Leiserowitz, PhD Yale Program on Climate Change Communication anthony.leiserowitz@yale.edu

Edward Maibach, MPH, PhD George Mason University Center for Climate Change Communication emaibach@gmu.edu

Connie Roser-Renouf, PhD George Mason University Center for Climate Change Communication croserre@gmu.edu

Seth Rosenthal, PhD Yale Program on Climate Change Communication seth.rosenthal@yale.edu

Matthew Cutler, PhD Yale Program on Climate Change Communication matthew.cutler@yale.edu

Cite as: Leiserowitz, A., Maibach, E., Roser-Renouf, C., Rosenthal, S., & Cutler, M. (2017). *Climate change in the American mind: May 2017.* Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication.





Key Findings

- Seven in ten Americans (70%) think global warming is happening, which nearly matches the highest level in our surveys (71%), recorded in 2008. By contrast, only about one in eight Americans (13%) think global warming is not happening.
- Americans are also more certain global warming is happening 46% are "extremely" or "very" sure it is happening, its highest level since 2008. By contrast, far fewer 7% are "extremely" or "very sure" global warming is not happening.
- Over half of Americans (58%) understand that global warming is mostly human caused, the
 highest level since our surveys began in November 2008. By contrast, three in ten (30%) say
 it is due mostly to natural changes in the environment the lowest level recorded since
 2008.
- Only about one in eight Americans (13%) understand that nearly all climate scientists (more than 90%) are convinced that human-caused global warming is happening.
- Over half of Americans (57%) say they are at least "somewhat worried" about global warming. About one in six (17%) are "very worried" about it.
- Six in ten Americans (59%) think global warming is affecting weather in the United States, and half think weather is being affected "a lot" (25%) or "some" (27%).
- About one in three Americans (35%) think people in the U.S. are being harmed by global warming "right now."
- Most Americans think global warming is a relatively distant threat they are most likely to think that it will harm future generations of people (71%), plant and animal species (71%), the Earth (70%), people in developing countries (62%), or the world's poor (62%). They are less likely to think it will harm people in the U.S. (58%), their own grandchildren (56%) or children (50%), people in their community (48%), their family (47%), themselves (43%), or members of their extended family living outside the U.S. (41%).
- Four in ten Americans (39%) think the odds that global warming will cause humans to become extinct are 50% or higher. Most Americans (58%) think the odds of human extinction from global warming are less than 50%.
- Four in ten Americans (40%) say they have personally experienced the effects of global warming, six in ten (60%) say they have not.
- Only one in three Americans (33%) discuss global warming with family and friends "often" or "occasionally," while most say they "rarely" or "never" discuss it (67%). Additionally, fewer than half of Americans (43%) hear about global warming in the media at least once a month, and only one in five (19%) hear people they know talk about global warming at least once a month.
- Six in ten Americans (63%) say the issue of global warming is either "extremely" (10%), "very" (16%), or "somewhat" (38%) important to them personally. Four in ten (37%) say it is either "not too" (22%) or "not at all" (15%) important personally.





- Half of Americans say they have thought "a lot" (18%) or "some" (31%) about global warming. The other half say they have thought about global warming just "a little" (33%) or "not at all" (17%).
- By a large margin, Americans say that schools should teach children about the causes, consequences, and potential solutions to global warming (78% agree vs. 21% who disagree).
- Four in ten Americans (42%) say their family and friends make at least "a moderate amount of effort" to reduce global warming. A similar number (45%) say it is at least "moderately important" to their family and friends that *they* take action to reduce global warming.
- The most common reason why Americans want to reduce global warming is to provide a better life for our children and grandchildren a reason selected by one in four Americans (24%). The next most common reasons are preventing the destruction of most life on the planet (16%) and protecting God's creation (13%).
- Few Americans are optimistic that humans will reduce global warming. Nearly half (48%) say humans could reduce global warming, but it's unclear at this point whether we will do what is necessary, and nearly one in four (24%) say we won't because people are unwilling to change their behavior. Only 7% say humans can and will successfully reduce global warming.





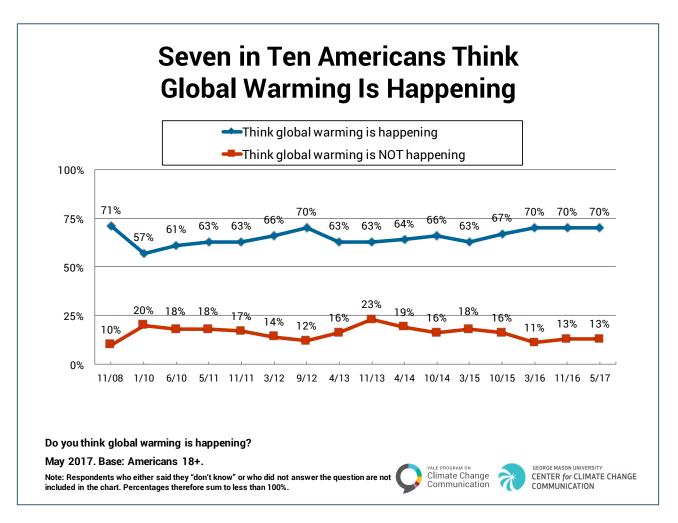
1. Global Warming Beliefs

1.1. Seven in ten Americans think global warming is happening.

Americans who think global warming is happening outnumber those who think it is not by more than 5 to 1.

Seven in ten Americans (70%) think global warming is happening. By contrast, only about one in eight Americans (13%) think global warming is not happening.

The percentage of Americans who think global warming is happening has remained steady since March 2016, and nearly matches its highest level (71%) since our surveys began in November 2008.







1.2. More than four in ten Americans are sure global warming is happening. Fewer than one in ten are sure it is not happening.

Forty-six percent of Americans are either "extremely" or "very" sure global warming is happening. Far fewer – 7% – are "extremely" or "very sure" global warming is not happening.

The percentage who are sure global warming is happening has risen steadily over the past two years, and is now at its highest level since November 2008.

More Than Four in Ten Americans Are Sure **Global Warming Is Happening** - Certainty that global warming is happening at highest level since 2008 -Extremely/Very sure global warming is happening Extremely/Very sure global warming is NOT happening 75% 51% 45% 46% 50% 43% 40% 40% 38% 37% 37% 37% 35% 35% 34% 25% 0% 6/10 5/11 11/11 3/12 9/12 4/13 11/13 4/14 10/14 3/15 10/15 3/16 11/16 5/17 How sure are you that global warming is/is not happening? CENTER for CLIMATE CHANGE COMMUNICATION Climate Change May 2017. Base: Americans 18+.

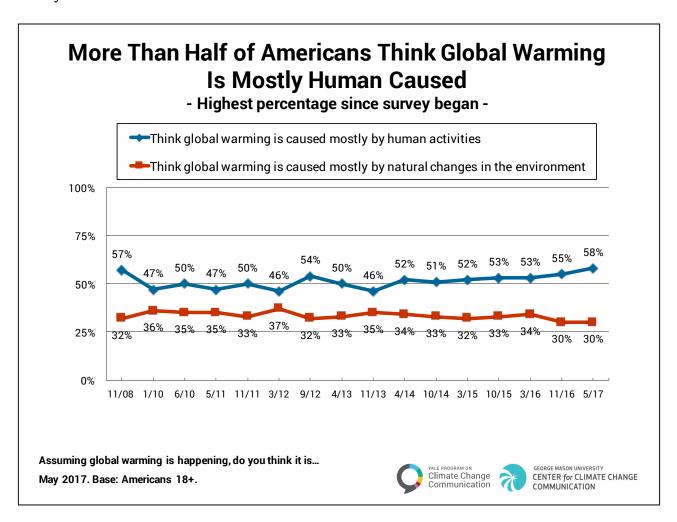




1.3. More than half of Americans think global warming is mostly human caused.

The 2014 U.S. National Climate Assessment (written and reviewed by hundreds of climate experts over the course of four years) states: "The global warming of the past 50 years is primarily due to human activities, predominantly the burning of fossil fuels. Many independent lines of evidence confirm that human activities are affecting climate in unprecedented ways" (p. 15).¹

A majority of Americans (58%) understand that global warming is mostly human caused, the highest level since our surveys began in 2008. By contrast, three in ten (30%) say it is due mostly to natural changes in the environment, matching the lowest level measured in our November 2016 survey.





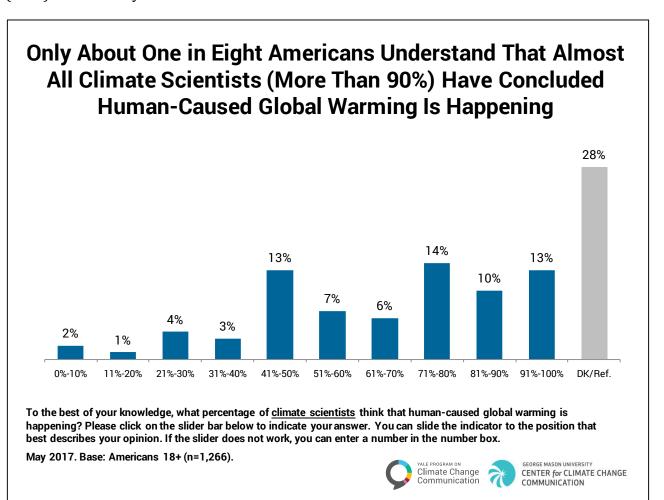


¹ http://nca2014.globalchange.gov/report

1.4. Only about one in eight Americans understand that almost all climate scientists (more than 90%) have concluded human-caused global warming is happening.

A recent review study by John Cook and colleagues² found that six, independent, peer-reviewed studies about the extent of the scientific consensus about global warming have reached similar conclusions: between 90% and 100% of climate scientists are convinced that human-caused climate change is happening. The most rigorous of these studies found that 97% of climate scientists are convinced that human-caused climate change is happening.

Only about one in eight Americans (13%) understand that nearly all climate scientists (more than 90%) are convinced that human-caused global warming is happening. While half (50%) of the public believes that a majority (more than half) of climate scientists think human-caused global warming is happening, the most common response – given by more than one in four Americans (28%) – is that they "don't know."³



² Cook, J., Oreskes, N., Doran, P. T., Anderegg, W. R. I., Verheggen, B., Maibach, E. W., Carlton, J. S., Lewendowsky, S., Skuce, A. G., Green, S. A., Nuccitelli, D., Jacobs, P., Richardson, M., Winkler, B., Painting, R., & Rice., K. (2016). Consensus on consensus: A synthesis of consensus estimates on human-caused global warming. *Environmental Research Letters* 11(4). doi: 10.1088/1748-9326/11/4/048002

³ Respondents were asked to estimate the percentage of climate scientists who have concluded that human-caused global warming is happening by moving a simulated "slider bar" which appeared on the screen of their computer. This slider allowed respondents to move the marker from "0%" on the left to "100% on the right, or to any whole number between the two.





Public misunderstanding of the scientific consensus – which has been found in each of our surveys since 2008 – has significant consequences. Other research has identified public understanding of the scientific consensus as an important "gateway belief" that influences other important beliefs (i.e., global warming is happening, human caused, a serious problem, and solvable) and support for action.

For more information, see: van der Linden, S. L., Leiserowitz, A. A., Feinberg, G. D., & Maibach, E. W. (2015). The scientific consensus on climate change as a gateway belief: Experimental evidence. *PLoS ONE, 10*(2). doi: 10.1371/journal.pone.0118489





2. Worry About Global Warming

Over half of Americans are worried about global warming; only one in six are "very worried."

Over half of Americans (57%) say they are at least "somewhat worried" about global warming, a decrease of 4 percentage points from our previous survey in November 2016. About one in six Americans (17%) are "very worried."

Over Half of Americans Are Worried About Global Warming; Only One in Six Are "Very Worried" Very worried Somewhat worried 100% 75% 62% 57% 58% 57% 58% 56% 55% 53% 53% 54% 52% 51% 52% 49% 50% 25% 0% 5/11 11/11 3/12 9/12 4/13 11/13 4/14 10/14 3/15 10/15 3/16 11/16 5/17 11/08 1/10 How worried are you about global warming? YALE PROGRAM ON Climate Change CENTER for CLIMATE CHANGE May 2017. Base: Americans 18+. COMMUNICATION





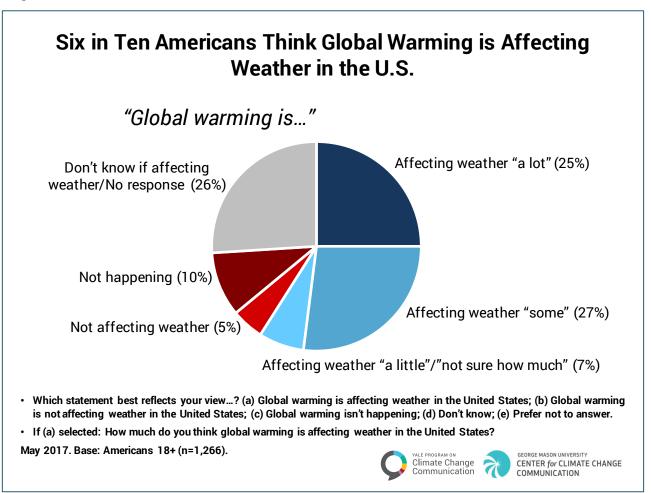
3. Perceived Risks of Global Warming

3.1. Six in ten Americans think global warming is affecting weather in the United States.

The impacts of global warming are starting to be felt in the United States. According to the 2014 U.S. National Climate Assessment:⁴

"Residents of some coastal cities see their streets flood more regularly during storms and high tides. Inland cities near large rivers also experience more flooding, especially in the Midwest and Northeast. Insurance rates are rising in some vulnerable locations, and insurance is no longer available in others. Hotter and drier weather and earlier snow melt mean that wildfires in the West start earlier in the spring, last later into the fall, and burn more acreage. In Arctic Alaska, the summer sea ice that once protected the coasts has receded, and autumn storms now cause more erosion, threatening many communities with relocation."

In line with this assessment, six in ten Americans (59%) think global warming is affecting weather in the United States, with about half thinking weather is either being affected "a lot" (25%) or "some" (27%). Only 5% think global warming is *not* affecting U.S. weather, while 10% said global warming is not happening. One in four (26%) said they did not know or did not provide a response.



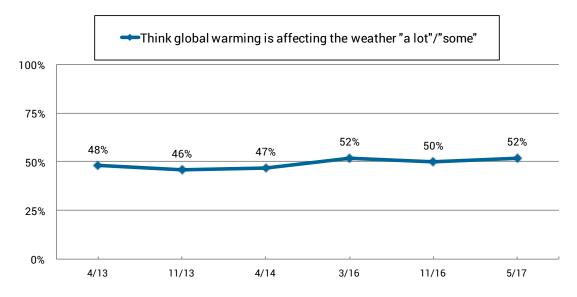
⁴ http://nca2014.globalchange.gov/highlights/overview/overview





The percentage of Americans who think global warming is affecting the weather "a lot" or "some" has risen slightly since the question was first asked in 2013, from 48% to its current level of 52%.

Half of Americans Think Global Warming Is Affecting the Weather "A Lot" or "Some"



- Which statement best reflects your view...? (a) Global warming is affecting weather in the United States; (b) Global warming is not affecting weather in the United States; (c) Global warming isn't happening; (d) Don't know; (e) Prefer not to answer.
- If (a) selected: How much do you think global warming is affecting weather in the United States?

May 2017. Base: Americans 18+.









3.2. About one in three Americans think people in the U.S. are being harmed "right now" by global warming.

Only about one in three Americans (35%) think people in the U.S. are being harmed by global warming "right now."

About One in Three Americans Think People in the U.S. Are Being Harmed "Right Now" by Global Warming 100%

75% 50% 38% 36% 36% 35% 34% 33% 32% 31% 30% 30% 29% 25% 25% 0% 11/08 1/10 9/12 4/13 11/13 4/14 10/14 3/15 10/15 3/16 11/16 5/17

When do you think global warming will start to harm people...? Base: Americans 18+. May 2017.







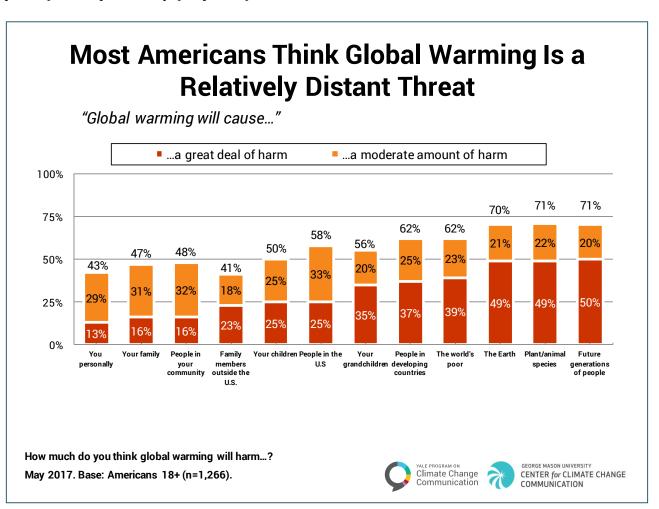


3.3. Most Americans think global warming is a relatively distant threat, although more are coming to understand that it will harm people.

Americans are most likely to think that future generations of people (71%), plant and animal species (71%), and the Earth (70%) will be harmed a "great deal" or a "moderate amount" by global warming. A majority also think people in developing countries (62%), the world's poor (62%), people in the U.S. (58%), and their own grandchildren (56%) or children (50%) will be harmed.

They are less likely to think that those closest to them – people in their community (48%), their family (47%), themselves (43%), and members of their extended family living outside the U.S. (41%) will be harmed.

Although Americans perceive global warming as a relatively distant threat, since our March 2015 survey, the number of Americans who think climate change will cause harm to humans has increased substantially. More Americans now think global warming will harm: People in developing countries (+9 percentage points since March 2015; see Tables, pp. 30-36), people in the U.S. (+9 points), the world's poor (+9 points), future generations (+7 points), their own family (+5 points), them personally (+6 points).



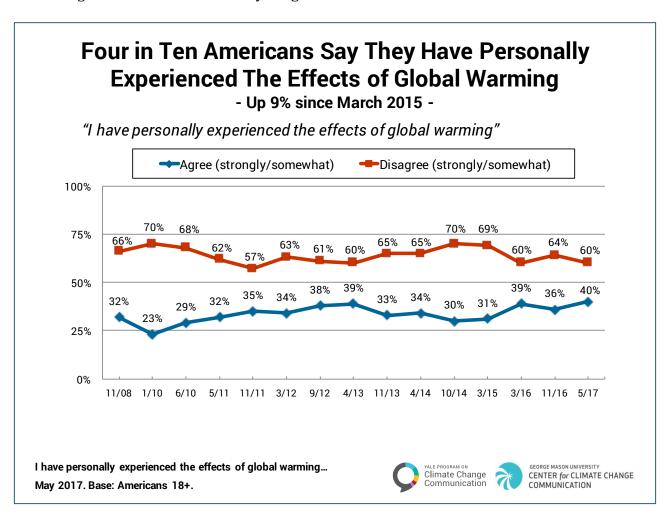




3.4. Four in ten Americans say they have personally experienced the effects of global warming, two in three say they have not.

Four in ten Americans (40%) say they have personally experienced the effects of global warming. Six in ten (60%) say they have not.

The number of Americans who say they have personally experienced the effects of global warming is at its highest level since the surveys began in 2008.







3.5. Four in ten Americans think there is at least a 50% chance that global warming will cause humans to become extinct. One in four think there is less than a 10% chance.

Four in ten Americans (39%) think the odds that global warming will cause humans to become extinct are 50% or higher. That includes 6% who think there is at least a 90% chance global warming will cause human extinction.

However, a majority of Americans (58%) think the odds of human extinction from global warming are less than 50%, with one in four (26%) saying there is less than a 10% chance.

Four in Ten Americans Think There Is At Least a 50% Chance That Global Warming Will Cause Humans To Become Extinct - One in four think there is less than a 10% chance -26% Percent of Americans 14% 14% 11% 9% 6% 6% 5% 4% 3% 3% 0%-9% 30%-39% 40%-49% 50%-59% 60%-69% 70%-79% 80%-89% 90%-100% No answer Estimated likelihood that global warming will cause humans to become extinct How likely do you think it is that global warming will cause humans to become extinct? Please click on the slider bar below to indicate your answer. You can slide the indicator to the position that best describes your opinion. If the slider does not work, you can enter a number in the number box. GEORGE MASON UNIVERSITY May 2017. Base: Americans 18+ (n=1,266). Climate Change CENTER for CLIMATE CHANGE Communication COMMUNICATION

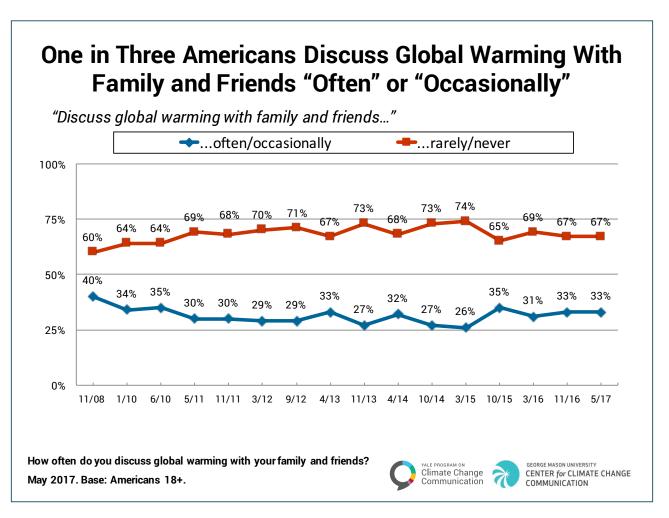




4. Personal and Social Engagement with Global Warming

4.1. Only one in three Americans discuss global warming with family and friends "often" or "occasionally."

Thirty-three percent of Americans say they discuss global warming with family and friends at least occasionally, while most say they rarely or never discuss it (67%).



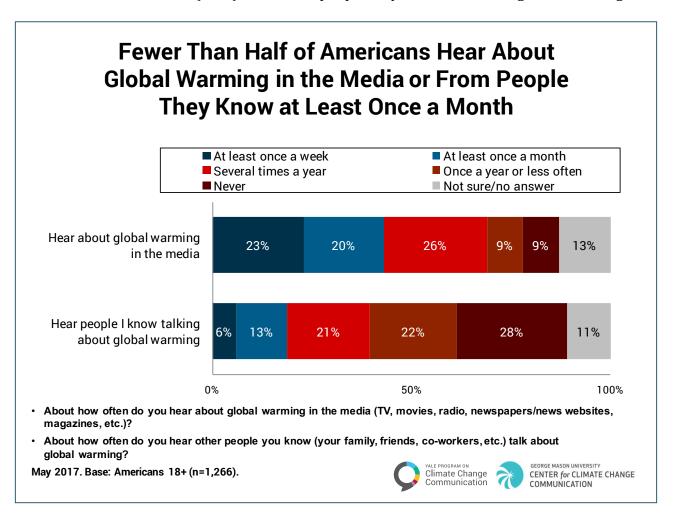




4.2. Fewer than half of Americans hear about global warming in the media or from people they know at least once a month.

Only about four in ten Americans (43%) hear about global warming in the media once a month or more frequently, compared with 35% who hear about it only several times a year or less, and an additional 9% who never hear about it.

Only one in five (19%) hear people they know talking about global warming once a month or more. In contrast, 42% hear people they know talking about it only several times a year or less, and more than one in four (28%) never hear people they know talk about global warming.

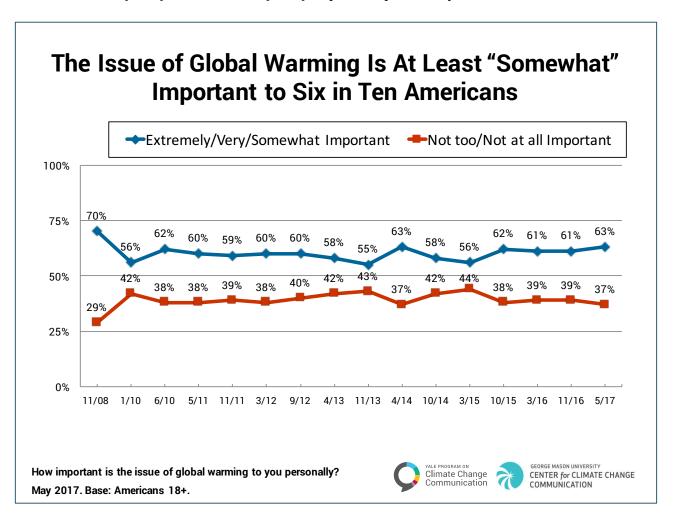






4.3. The issue of global warming is at least "somewhat" important to six in ten Americans.

About six in ten Americans (63%) say the issue of global warming is either "extremely" (10%), "very" (16%), or "somewhat" (38%) important to them personally. About four in ten (37%) say it is either "not too" (22%) or "not at all" (15%) important personally.

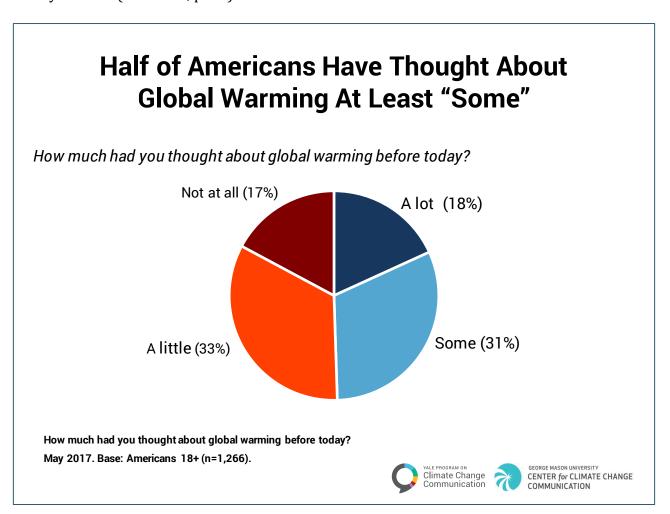






4.4. Half of Americans have thought about global warming at least "some."

Half of Americans say they have thought about global warming before today either "a lot" (18%) or "some" (31%). The other half say they have thought about global warming just "a little" (33%) or "not at all" (17%). These numbers have remained relatively stable since we first conducted this survey in 2008 (see Table, p. 40).

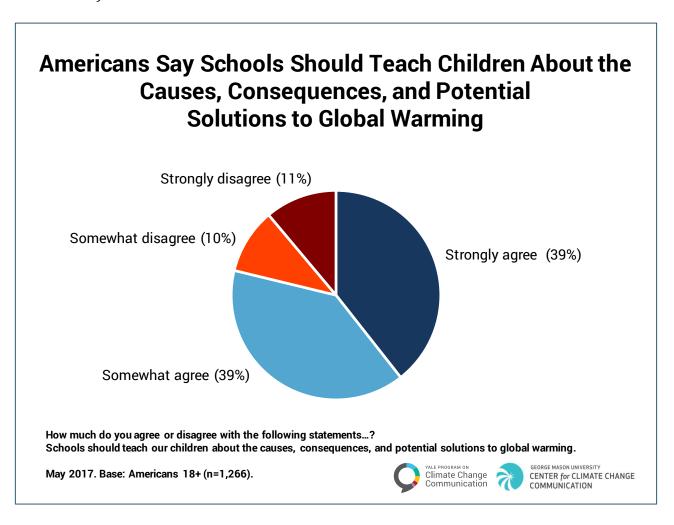






4.5. Americans say schools should teach children about the causes, consequences, and potential solutions to global warming.

The Next Generation Science Standards⁵ for K-12 STEM (Science, Technology, Engineering and Mathematics) education in the U.S. require that climate change be included in the curriculum, a mandate that is controversial in some parts of the country. Overall, however, a large majority of Americans support teaching about global warming in schools: By a large margin, Americans say that schools should teach children about the causes, consequences, and potential solutions to global warming (78% agree "strongly" or "somewhat" versus 21% who disagree "strongly" or "somewhat").



⁵ The Next Generation Science Standards were developed by a collaboration of scientists and educators at the National Research Council of the National Academy of Sciences; the American Academy for the Advancement of Science; the National Teacher's Association; 26 states; and Achieve (a non-profit organization). Released in 2013, the standards represent the most current, research-based method of educating K-12 students in STEM and preparing them for STEM careers. See: http://www.nextgenscience.org/



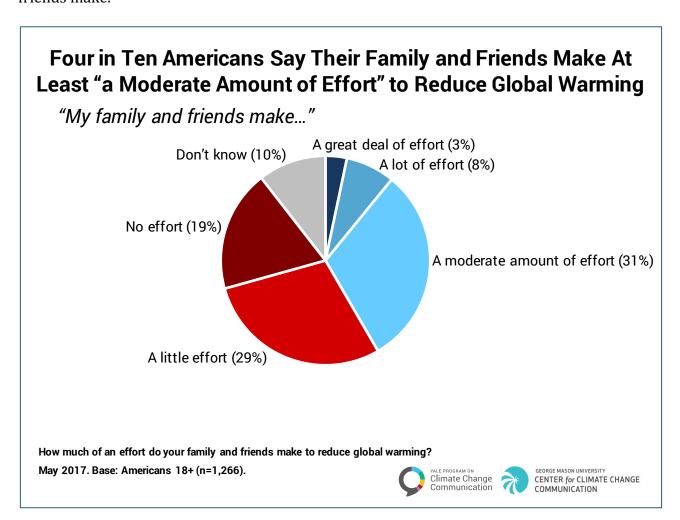


5. Motivations to Take Action to Reduce Global Warming

5.1. Four in ten Americans say their family and friends make at least "a moderate amount of effort" to reduce global warming.

The belief that people similar to you are taking action to reduce global warming can be an important motivator for taking action oneself.^{6,7} Four in ten Americans (42%) say their family and friends make either "a great deal of effort" (3%), "a lot of effort" (8%), or "a moderate amount of effort" (31%) to reduce global warming.

More Americans (48%) say their family and friends make only "a little effort" (29%) or "no effort" (19%) to reduce global warming. One in ten (10%) don't know how much effort their family and friends make.



⁶ Cialdini, R. B. (2003). Crafting normative messages to protect the environment. <u>Current Directions in Psychological Science</u>, 12(4), 105-109.

⁷ Doherty, K. L., & Webler, T. N. (2016). Social norms and efficacy beliefs drive the Alarmed segment's public-sphere climate actions. *Nature Climate Change, 6,* 879-884. doi: 10.1038/nclimate3025

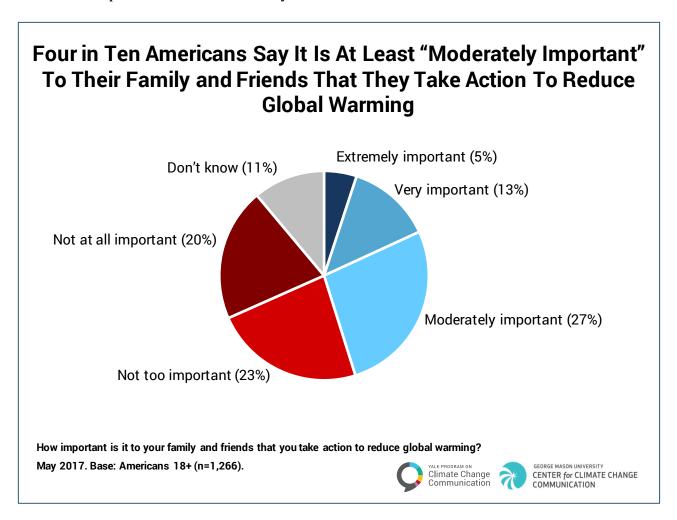




5.2. Four in ten Americans say it is at least moderately important to their family and friends that they take action to reduce global warming.

The belief that people want or expect you to take action to reduce global warming can also provide motivation to take action oneself.⁸ Four in ten Americans (45%) say it is either "extremely" (5%), "very" (13%), or "moderately" important (27%) to their family and friends that *they* take action to reduce global warming.

Slightly fewer Americans (43%) say it is "not too" (23%) or "not at all" important (20%) to their family and friends that they take action to reduce global warming. About one in ten (11%) don't know how important it is to their family and friends.



⁸ Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science*, *18*(5), 429-434. doi: 10.1111/j.1467-9280.2007.01917.x

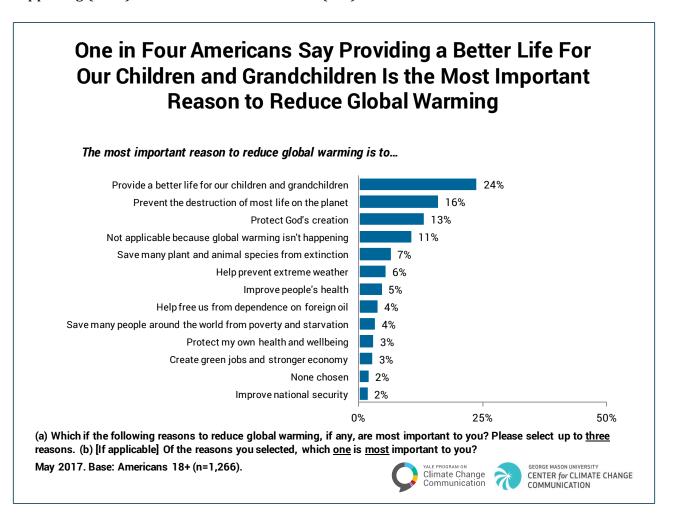




5.3. One in four Americans say providing a better life for our children and grandchildren is the most important reason to reduce global warming.

One in four Americans (24%) say providing a better life for our children and grandchildren is the most important reason, for them, to reduce global warming. More than one in ten Americans said preventing the destruction of most life on the planet (16%) or protecting God's creation (13%) was the most important reason.

Fewer than one in ten said their most important reason to reduce global warming was saving many plant and animal species from extinction (7%), preventing extreme weather (6%), improving people's health (5%), freeing us from dependence on foreign oil (4%), saving many people around the world from poverty and starvation (4%), protecting one's own health and wellbeing (3%), creating green jobs and a stronger economy (3%), or improving national security (2%). About one in seven (13%) either said this was not applicable because global warming isn't happening (11%), or did not choose a reason (2%).







5.4. A Majority of Americans think humans can reduce global warming, but few are optimistic that we will.

Nearly half of Americans (48%) say humans could reduce global warming, but it's unclear at this point whether we will do what is necessary.

Only 7% say humans can and will successfully reduce global warming. Nearly one in four (24%) say we won't because people are unwilling to change their behavior. Only 12% of Americans say humans can't reduce global warming even if it is happening.

A Majority of Americans Think Humans Can Reduce Global Warming - But few are optimistic that we will -Which of the following statements comes closest to your view? Unclear 🕶 Not willing Can't reduce —Not happening —Will do successfully 50% Humans could reduce global warming, but it's unclear at this point whether we will do what's necessary Humans could reduce global warming, but people aren't willing to change their behavior, so we're 25% not going to Humans can't reduce global warming, even if it is happening Global warming isn't happening Humans can reduce global warming and we are aoina to do so successfully Which of the following statements comes closest to your view? GEORGE MASON UNIVERSITY Climate Change CENTER for CLIMATE CHANGE Base: Americans 18+. May 2017. Communication COMMUNICATION





Appendix I: Data Tables

(Base: Americans 18+)

Recently, you may have noticed that *global warming* has been getting some attention in the news. Global warming refers to the idea that the world's average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world's climate may change as a result.

What do you think: Do you think that global warming is happening?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Yes	70	70	70	67	63	66	64	63	63	70	66	63	63	61	57	71
No	13	13	11	16	18	16	19	23	16	12	14	17	18	18	20	10
Don't know	16	17	18	18	19	18	17	14	20	18	20	20	18	21	23	19

(Base: Americans 18+ who say global warming is happening) How sure are you that global warming is happening?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(889)	(859)	(855)	(899)	(793)	(815)	(649)	(521)	(674)	(722)	(658)	(619)	(614)	(622)	(558)	(1,745)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Extremely sure	31	35	30	28	27	24	30	27	27	27	19	22	21	20	24	35
Very sure	34	30	31	32	32	35	32	31	33	30	34	35	33	37	35	37
Somewhat sure	33	32	34	37	38	38	33	39	37	40	42	39	40	40	37	24
Not at all sure	2	4	4	3	3	4	5	3	4	3	5	5	6	3	5	4





(Base: Americans 18+ who say global warming is <u>not</u> happening) How sure are you that global warming is not happening?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(169)	(155)	(144)	(215)	(251)	(228)	(196)	(179)	(164)	(160)	(156)	(175)	(188)	(199)	(227)	(301)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Extremely sure	26	24	20	21	21	23	15	20	18	15	15	21	21	20	28	26
Very sure	26	29	37	32	31	30	26	36	28	27	41	37	30	31	31	28
Somewhat sure	41	39	34	36	37	35	47	36	42	45	35	37	38	44	34	38
Not at all sure	7	8	9	12	11	11	12	9	12	13	8	5	11	4	7	8

(Base: Americans 18+) Assuming global warming is happening, do you think it is...

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Caused mostly by human activities	58	55	53	53	52	51	52	46	50	54	46	50	47	50	47	57
Caused mostly by natural changes in the environment	30	30	34	33	32	33	34	35	33	32	37	33	35	35	36	32
Neither because global warming isn't happening	6	8	7	8	10	9	8	8	8	7	5	8	8	6	9	4
Other (please specify), caused by human activities and natural changes	6	5	5	5	5	6	5	9	7	5	9	6	7	7	6	5
Other (please specify), unclassified	1	1	1	1	2	1	1	3	2	1	2	2	1	1	1	1





(Base: Americans 18+)

To the best of your knowledge, what percentage of <u>climate scientists</u> think that human-caused global warming is happening? Please click on the slider bar below to indicate your answer. You can slide the indicator to the position that best describes your opinion. If the indicator does not work, you can enter a number in the number box.

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)
	%	%	%	%	%	%
0% - 10%	2	2	1	2	1	1
11% - 20%	1	1	1	2	1	1
21% - 30%	4	7	4	4	4	4
31% - 40%	3	3	2	2	2	2
41% - 50%	13	13	13	12	14	15
51% - 60%	7	6	6	5	6	7
61% - 70%	6	7	8	6	8	7
71% - 80%	14	17	15	18	15	17
81% - 90%	10	9	8	10	8	7
91% - 100%	13	15	11	12	9	9
Don't know enough to say	28	21	32	27	31	30
Of those who provided an estimate:						
Mean	67	66	67	67	64	65
Median	73	74	71	74	68	67





(Base: Americans 18+) How worried are you about global warming?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Very worried	17	19	16	16	11	11	15	15	14	16	11	12	9	12	11	16
Somewhat worried	39	42	42	41	41	45	41	39	37	42	42	41	42	41	37	46
Not very worried	27	24	25	27	29	25	27	25	30	25	30	30	28	30	27	24
Not at all worried	17	15	18	16	19	18	18	20	19	17	16	15	20	18	22	13

(Base: Americans 18+)

Which statement below best reflects your view?

(Base: Americans 18+ who say global warming is affecting weather in the United States) How much do you think global warming is affecting weather in the United States?

	May 2017	Nov 2016	March 2016	April 2014	Nov 2013	April 2013
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,013)	(830)	(1,045)
	%	%	%	%	%	%
Global warming is affecting the weather in the United States (Total)	59	60	60	57	56	58
A lot	25	24	24	22	20	24
Some	27	26	28	25	25	24
A little	5	8	7	8	10	10
Don't know	1	2	1	1	6	6
Global warming is not affecting weather in the United States	5	7	5	8	7	7
Global warming isn't happening	10	9	9	10	13	10
Don't know	21	21	20	19	17	19
Prefer not to answer	5	4	5	5	5	5





(Base: Americans 18+) When do you think global warming will start to harm people in the United States?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
They are being harmed right now	35	36	38	34	32	33	32	34	34	36	30	30	31	29	25	34
In 10 years	11	14	12	13	11	10	9	10	11	13	12	10	11	12	12	13
In 25 years	13	15	13	14	13	14	14	14	12	11	14	13	13	12	14	13
In 50 years	13	10	12	11	11	12	15	11	12	12	14	15	12	13	13	13
In 100 years	13	9	10	11	13	13	14	12	13	13	15	15	11	15	13	12
Never	15	16	14	18	20	18	16	18	17	15	16	16	19	19	23	15

You personally

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	13	14	12	14	10	12	13	13	15	16	11	9	11	10	14	10
A moderate amount	29	27	28	27	26	24	25	25	25	26	18	21	18	21	23	22
Only a little	26	25	24	26	26	26	26	27	26	25	30	28	27	27	22	24
Not at all	22	25	23	20	25	27	25	26	23	20	29	25	25	24	31	22
Don't know	9	8	12	12	13	11	11	8	11	13	11	17	17	18	11	23





Your family

	May 2017	Nov 2016	March 2016	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	16	17	15	13	15	16	17	17	18	12	10	12	11	15	11
A moderate amount	31	30	30	28	28	27	25	27	28	21	24	21	25	25	24
Only a little	25	24	22	23	23	24	25	23	23	29	27	25	24	21	23
Not at all	19	21	21	22	23	21	24	20	17	26	21	23	21	28	19
Don't know	9	8	12	13	11	11	9	12	14	12	18	17	19	11	23

People in your community

	May 2017	Nov 2016	March 2016	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	16	19	15	14	16	17	14	17	19	12	11	12	11	15	13
A moderate amount	32	30	31	29	27	28	29	28	29	22	24	21	25	27	26
Only a little	23	22	23	24	23	24	24	23	23	29	27	25	24	22	20
Not at all	18	20	19	20	22	20	23	18	15	24	21	21	21	24	17
Don't know	10	9	12	14	11	11	10	13	13	13	18	18	19	12	23





Members of your extended family living outside the U.S.

	May 2017
(Unweighted base)	(1,266)
	%
A great deal	23
A moderate amount	18
Only a little	13
Not at all	15
Don't know	7
Does not apply	23

Your children

	May 2017
(Unweighted base)	(1,266)
	%
A great deal	25
A moderate amount	25
Only a little	19
Not at all	17
Don't know	4
Does not apply	10





People in the United States

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	25	28	24	23	19	23	23	23	22	26	18	15	16	16	22	21
A moderate amount	33	32	35	34	30	30	30	30	30	31	28	29	26	28	29	28
Only a little	19	17	16	18	20	20	18	19	19	17	24	23	22	22	16	15
Not at all	15	15	15	14	17	17	18	20	16	12	18	17	17	17	22	14
Don't know	9	8	10	12	14	11	11	8	12	13	12	16	18	18	12	22

Your grandchildren

	May 2017
(Unweighted base)	(1,266)
	%
A great deal	35
A moderate amount	20
Only a little	12
Not at all	16
Don't know	4
Does not apply	12





People in developing countries

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	37	40	36	34	27	29	31	32	30	35	26	22	23	22	29	31
A moderate amount	25	25	27	27	26	26	24	24	25	29	26	28	21	28	25	22
Only a little	16	12	12	13	17	16	17	17	18	10	19	17	19	17	14	11
Not at all	13	13	13	13	15	17	16	19	13	11	16	15	16	15	19	13
Don't know	9	11	12	13	15	12	12	9	13	15	14	18	18	18	13	24

The world's poor

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)
	%	%	%	%	%
A great deal	39	43	40	36	30
A moderate amount	23	21	22	26	23
Only a little	15	11	12	12	16
Not at all	13	13	13	13	16
Don't know	10	12	14	13	15





The Earth

	May 2017
(Unweighted base)	(1,266)
	%
A great deal	49
A moderate amount	21
Only a little	10
Not at all	11
Don't know	9

Plant and animal species

	May 2017	Nov 2016	March 2016	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	49	50	48	42	44	47	46	39	43	43	41	38	40	43	45
A moderate amount	22	19	23	21	20	19	19	24	25	21	19	18	21	19	17
Only a little	10	10	9	12	10	12	11	13	11	13	16	12	12	11	8
Not at all	11	11	11	12	13	12	15	13	8	10	10	12	13	15	9
Don't know	8	9	10	13	12	11	8	10	13	12	15	17	15	12	20





(Base: Americans 18+) How much do you think global warming will harm...? (Cont'd.)

Future generations of people

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A great deal	50	53	48	51	42	46	49	46	42	47	43	40	36	39	42	44
A moderate amount	20	18	22	19	21	18	18	19	21	21	22	22	22	22	22	17
Only a little	10	9	8	8	10	11	10	11	12	9	12	13	10	11	9	7
Not at all	11	10	10	11	12	13	12	15	12	8	11	10	11	12	15	10
Don't know	8	10	11	11	15	13	11	9	12	14	13	16	18	16	12	22

(Base: Americans 18+) How much do you agree with the following statements?

I have personally experienced the effects of global warming.

	May 2017	Nov 2016	March 2016	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Strongly/ Somewhat Agree	40	36	39	31	30	34	33	39	38	34	35	32	29	23	32
Strongly Agree	5	7	7	4	4	5	6	6	4	5	7	5	5	4	4
Somewhat Agree	34	29	33	27	26	29	27	33	34	30	28	27	24	19	28
Strongly/ Somewhat Disagree	60	64	60	69	70	65	65	60	61	63	57	62	68	70	66
Somewhat Disagree	29	29	29	29	29	29	29	29	30	30	34	32	34	32	42
Strongly Disagree	31	35	31	40	41	35	36	31	31	33	23	30	34	37	24





(Base: Americans 18+)

How likely do you think it is that global warming will cause humans to become extinct? Please click on the slider bar below to indicate your answer. You can slide the indicator to the position that best describes your opinion. If the slider does not work, you can enter a number in the number box.

	May 2017
(Unweighted base)	(1,266)
	%
0% - 9%	26
10% - 19%	9
20% - 29%	14
30% - 39%	4
40% - 49%	6
50% - 59%	14
60% - 69%	5
70% - 79%	11
80% - 89%	3
90% - 100%	6
No answer	3
Of those who provided an estimate:	
Mean	37
Median	31





(Base: Americans 18+) How often do you discuss global warming with your family and friends?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Often	5	6	4	5	3	3	4	3	4	3	5	4	4	5	5	5
Occasionally	28	27	27	30	23	24	28	23	28	26	24	26	26	30	29	35
Rarely	36	36	36	33	38	36	39	39	39	38	40	39	41	39	34	33
Never	31	31	32	32	36	37	29	34	28	34	30	29	28	25	30	26

(Base: Americans 18+) About how often do you hear about global warming in the media (TV, movies, radio, newspapers/news websites, magazines, etc.)?

	May 2017
(Unweighted base)	(1,266)
	%
At least once a week	23
At least once a month	20
Several times a year	26
Once a year or less often	9
Never	9
Not sure/No answer	13





(Base: Americans 18+) About how often do you hear other people you know (your family, friends, co-workers, etc.) talk about global warming?

	May 2017
(Unweighted base)	(1,266)
	%
At least once a week	6
At least once a month	13
Several times a year	21
Once a year or less often	22
Never	28
Not sure/No answer	11

(Base: Americans 18+) How important is the issue of global warming to you personally?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Extremely important	10	10	9	7	6	5	8	8	8	6	6	6	7	6	5	10
Very important	16	17	17	18	15	16	17	14	13	17	14	13	15	18	14	20
Somewhat important	38	34	35	37	35	37	38	33	36	36	40	40	37	38	37	39
Not too important	22	22	22	21	24	24	21	25	24	24	23	24	24	24	23	18
Not at all important	15	16	17	17	20	18	16	18	18	17	15	15	14	14	19	11





(Base: Americans 18+)
How much had you thought about global warming before today?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A lot/Some	50	47	51	50	44	45	51	45	47	49	44	44	45	55	45	55
A lot	18	20	16	17	15	14	16	14	16	17	15	14	12	17	14	20
Some	31	27	35	34	29	31	35	31	30	32	30	30	33	37	30	35
A little/Not at all	50	53	49	50	56	55	49	54	53	51	55	54	53	45	53	45
A little	33	37	33	33	35	35	34	37	37	34	39	38	37	32	35	32
Not at all	17	16	16	17	21	20	15	17	16	17	16	16	16	13	18	12

(Base: Americans 18+) How much do you agree or disagree with the following statement(s)? "Schools should teach our children about the causes, consequences, and potential solutions to global warming."

	May 2017	Nov 2016	March 2016
(Unweighted base)	(1,266)	(1,226)	(1,204)
	%	%	%
Strongly agree	39	38	36
Somewhat agree	39	38	41
Somewhat disagree	10	12	11
Strongly disagree	11	12	12





(Base: Americans 18+)
How much of an effort do your family and friends make to reduce global warming?

	May 2017
(Unweighted base)	(1,266)
	%
A great deal of effort	3
A lot of effort	8
A moderate amount of effort	31
A little effort	29
No effort	19
Don't know	10

(Base: Americans 18+) How important is it to your family and friends that you take action to reduce global warming?

	May 2017
(Unweighted base)	(1,266)
	%
Extremely important	5
Very important	13
Moderately important	27
Not too important	23
Not at all important	20
Don't know	11





(Base: Americans 18+)

Which of the following reasons to reduce global warming, if any, are most important to you? Please select up to <u>three</u> reasons.

(If applicable) Of the reasons you selected, which one is most important to you?

		May 2017						
(Unweighted base)	(1,266)							
	%							
	Most important reason	Three most important reasons						
Provide a better life for our children and grandchildren	24	44						
Prevent the destruction of most life on the planet	16	34						
Protect God's creation	13	21						
Not applicable because global warming isn't happening	11	11						
Save many plant and animal species from extinction	7	31						
Help prevent extreme weather	6	27						
Improve people's health	5	23						
Help free us from dependence on foreign oil	4	17						
Save many people around the world from poverty and starvation	4	16						
Protect my own health and well being	3	12						
Create green jobs and a stronger economy	3	15						
None chosen	2	2						
Improve national security	2	4						





(Base: Americans 18+) Which of the following statements comes closest to your view?

	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014	April 2014	Nov 2013	April 2013	Sept 2012	March 2012	Nov 2011	May 2011	June 2010	Jan 2010	Nov 2008
(Unweighted base)	(1,266)	(1,226)	(1,204)	(1,330)	(1,263)	(1,275)	(1,013)	(830)	(1,045)	(1,061)	(1,008)	(1,000)	(1,010)	(1,024)	(1,001)	(2,164)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Humans can reduce global warming, and we are going to do so successfully	7	5	6	4	6	7	6	5	3	5	4	4	5	5	10	6
Humans could reduce global warming, but it's unclear at this point whether we will do what's needed	48	48	47	42	46	44	42	40	45	49	46	47	40	47	45	51
Humans could reduce global warming, but people aren't willing to change their behavior, so we're not going to	24	23	25	26	24	22	25	25	24	22	21	25	24	21	17	22
Humans can't reduce global warming, even if it is happening	12	15	13	18	12	17	16	16	16	15	20	15	18	18	15	16
Global warming isn't happening	8	9	8	9	13	10	10	13	11	8	9	10	10	10	13	5





Appendix II: Survey Method

The data in this report are based on a nationally representative survey of 1,266 American adults, aged 18 and older. The survey was conducted May 18 – June 6, 2017. All questionnaires were self-administered by respondents in a web-based environment. The survey took, on average, about 24 minutes to complete.

The sample was drawn from GfK's KnowledgePanel®, an online panel of members drawn using probability sampling methods. Prospective members are recruited using a combination of random digit dial and address-based sampling techniques that cover virtually all (non-institutional) resident phone numbers and addresses in the United States. Those contacted who would choose to join the panel but do not have access to the Internet are loaned computers and given Internet access so they may participate.

The sample therefore includes a representative cross-section of American adults – irrespective of whether they have Internet access, use only a cell phone, etc. Key demographic variables were weighted, post survey, to match US Census Bureau norms.

The survey instrument was designed by Anthony Leiserowitz, Seth Rosenthal, and Matthew Cutler of Yale University, and Edward Maibach and Connie Roser-Renouf of George Mason University.

Sample details and margins of error

All samples are subject to some degree of sampling error – that is, statistical results obtained from a sample can be expected to differ somewhat from results that would be obtained if every member of the target population were interviewed. Average margins of error each wave, at the 95% confidence level, are plus or minus 3 percentage points except where noted.

- May 2017: Fielded May 18 June 6 (n=1,266)
- November 2016: Fielded November 18 December 1 (n=1,226).
- March 2016: Fielded March 18 31 (n=1,204).
- October 2015: Fielded September 30 October 19 (n=1,330).
- March 2015: Fielded February 27 March 10 (n=1,263).
- October 2014: Fielded October 17 28 (n=1,275).
- April 2014: Fielded April 15 22 (n=1,013).
- November 2013: Fielded November 23 December 9 (n=830).
- April 2013: Fielded April 10 15 (n=1,045).
- September 2012: Fielded August 31 September 12 (n=1,061).
- March 2012: Fielded March 12 March 30 (n=1,008).
- November 2011: Fielded October 20 November 16 (n=1,000).
- May 2011: Fielded April 23 May 12 (n=1,010).
- June 2010: Fielded May 14 June 1 (n=1,024).
- January 2010: Fielded December 24, 2009 January 3, 2010 (n=1,001).
- November 2008: Fielded October 7 November 12 (n=2,164).
 - Data were collected over two periods: from October 7 October 20 and from October 24 –
 November 12. Margin of error plus or minus 2 percentage points.





Rounding error

For tabulation purposes, percentage points are rounded off to the nearest whole number. As a result, percentages in a given chart may total slightly higher or lower than 100%. Summed response categories (e.g., "strongly agree" + "somewhat agree") are rounded after sums are calculated (e.g., 1.3% + 1.3% = 2.6%, which, after rounding = 3%).





Appendix III: Sample Demographics

	N	%
	(unweighted)	(weighted)
Total	1,266	100
Men	630	48
Women	636	52
Millennial (18-36)	281	33
Generation X (37-52)	268	24
Baby Boomer (53-71)	549	34
Silent Generation (72+)	168	9
Less than high school	96	12
High school graduate	366	29
Some college/Associate degree/Technical degree	350	29
College graduate	250	17
Post graduate	204	13
<\$25K	192	16
\$25K - <\$50K	290	21
\$50K - <\$75K	232	17
\$75K - <\$100K	187	14
\$100K - <\$125K	147	12
\$125K+	218	20
Hispanic	126	16
White, non-Hispanic	932	64
Black, African-American non-Hispanic	123	12
Other non-Hispanic	85	8
Northeast	252	18
Midwest	286	21
South	418	37
West	310	24





