

CLIMATE CHANGE IN THE AMERICAN MIND

December 2018



YALE PROGRAM ON
Climate Change
Communication



GEORGE MASON UNIVERSITY
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Table of Contents

Introduction.....	2
Executive Summary.....	3
1. Global Warming Beliefs	5
2. Emotional Responses to Global Warming.....	10
3. Perceived Risks of Global Warming	13
4. Personal and Social Engagement with Global Warming.....	16
5. Global Warming and Severe Weather	21
Appendix I: Data Tables.....	25
Appendix II: Survey Method	47
Appendix III: Sample Demographics.....	49

Introduction

This report is based on findings from a nationally representative survey – *Climate Change in the American Mind* – conducted by the [Yale Program on Climate Change Communication \(climatecommunication.yale.edu\)](http://climatecommunication.yale.edu) and the [George Mason University Center for Climate Change Communication \(climatechangecommunication.org\)](http://climatechangecommunication.org). Interview dates: November 28 – December 11, 2018. Interviews: 1,114 Adults (18+). Average margin of error +/- 3 percentage points at the 95% confidence level. The research was funded by the 11th Hour Project, the Endeavor Foundation, the Energy Foundation, the Grantham Foundation, and the MacArthur Foundation.

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Executive Summary

This report documents a continued upward trend in Americans' concern about global warming, as reflected in several key indicators tracked since 2008, including substantial increases in Americans' certainty that global warming is happening and harming people in the United States now. The proportion of Americans who are very worried about global warming has more than tripled since its lowest point in 2011. Increasing numbers of Americans say they have personally experienced global warming and that the issue is personally important to them. Notable findings include:

- Seven in ten Americans (73%) think global warming is happening, an increase of ten percentage points since March 2015. Only about one in seven Americans (14%) think global warming is not happening. Americans who think global warming is happening outnumber those who think it isn't by more than a 5 to 1 ratio.
- Americans are also increasingly certain that global warming is happening – 51% are "extremely" or "very" sure it is happening, an increase of 14 percentage points since March 2015, matching the highest level since 2008. By contrast, far fewer – 7% – are "extremely" or "very sure" global warming is not happening.
- About six in ten Americans (62%) understand that global warming is mostly human-caused. By contrast, about one in four (23%) say it is due mostly to natural changes in the environment.
- More than half of Americans (57%) understand that most scientists agree that global warming is happening, the highest level since 2008. However, only one in five (20%) understand how strong the level of consensus among scientists is (i.e., that more than 90% of climate scientists have concluded that human-caused global warming is happening).
- About seven in ten Americans (69%) say they are at least "somewhat worried" about global warming. About three in ten (29%) are "very worried" about it – the highest level since our surveys began in 2008.
- About seven in ten Americans are "interested" in global warming (69%). Majorities also feel "disgusted" (53%) and/or "helpless" (51%). Nearly half are "hopeful" (48%).
- Few Americans think it's too late to do anything about global warming (14%).
- Nearly half of Americans (46%) say they have personally experienced the effects of global warming, an increase of 15 percentage points since March 2015.
- Nearly half of Americans (48%) think people in the United States are being harmed by global warming "right now." The proportion who believe people are being harmed "right now" has increased by 16 percentage points since March 2015 and by nine points since our previous survey in March 2018.
- About half or more Americans think they (49%), their family (56%), and/or people in their community (57%) will be harmed by global warming. Even more think global warming will harm people in the U.S. (65%), the world's poor (67%), people in developing countries (68%), plant and animal species (74%), and/or future generations of people (75%).
- About seven in ten Americans (72%) say the issue of global warming is either "extremely," "very," or "somewhat" important to them personally, while only about three in ten (28%) say it is either "not too" or "not at all" personally important. The proportion who say it is personally important has increased by 16 percentage points since March 2015, and by nine points since our previous survey in March 2018.

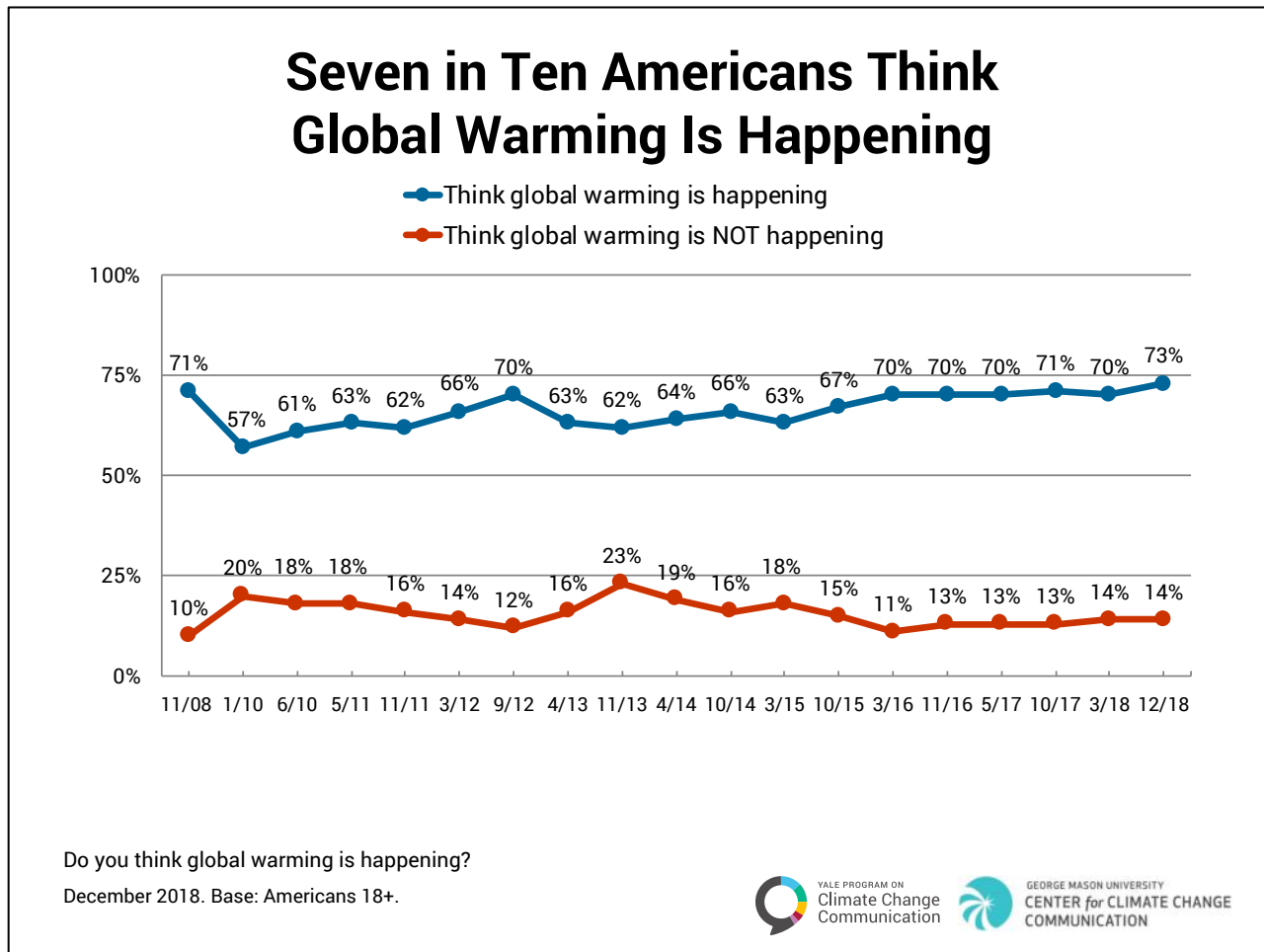
- About four in ten Americans (41%) say they discuss global warming with family and friends "often" or "occasionally," an increase of 15 percentage points since March 2015. However, more say they "rarely" or "never" discuss it (59%), although this reflects a 15-point decrease since March 2015.
- More than half of Americans (56%) say they hear about global warming in the media at least once a month, an increase of 13 percentage points since our previous survey in March 2018.
- Fewer than half of Americans perceive a social norm in which their friends and family expect them to take action on global warming. Forty-six percent think it is at least moderately important to their family and friends that they take action (an injunctive norm), and four in ten (40%) say their family and friends make at least a moderate effort to reduce global warming (a descriptive norm).
- About two in three Americans (65%) think global warming is affecting weather in the United States, and three in ten think weather is being affected "a lot" (32%). About half think global warming made the 2018 wildfires in the Western U.S. (50%) and/or hurricanes Florence and Michael (49%) worse.
- A majority of Americans are worried about harm from extreme events in their local area including extreme heat (61%), flooding (61%), droughts (58%), and/or water shortages (51%).

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 isn't by more than 5 to 1.

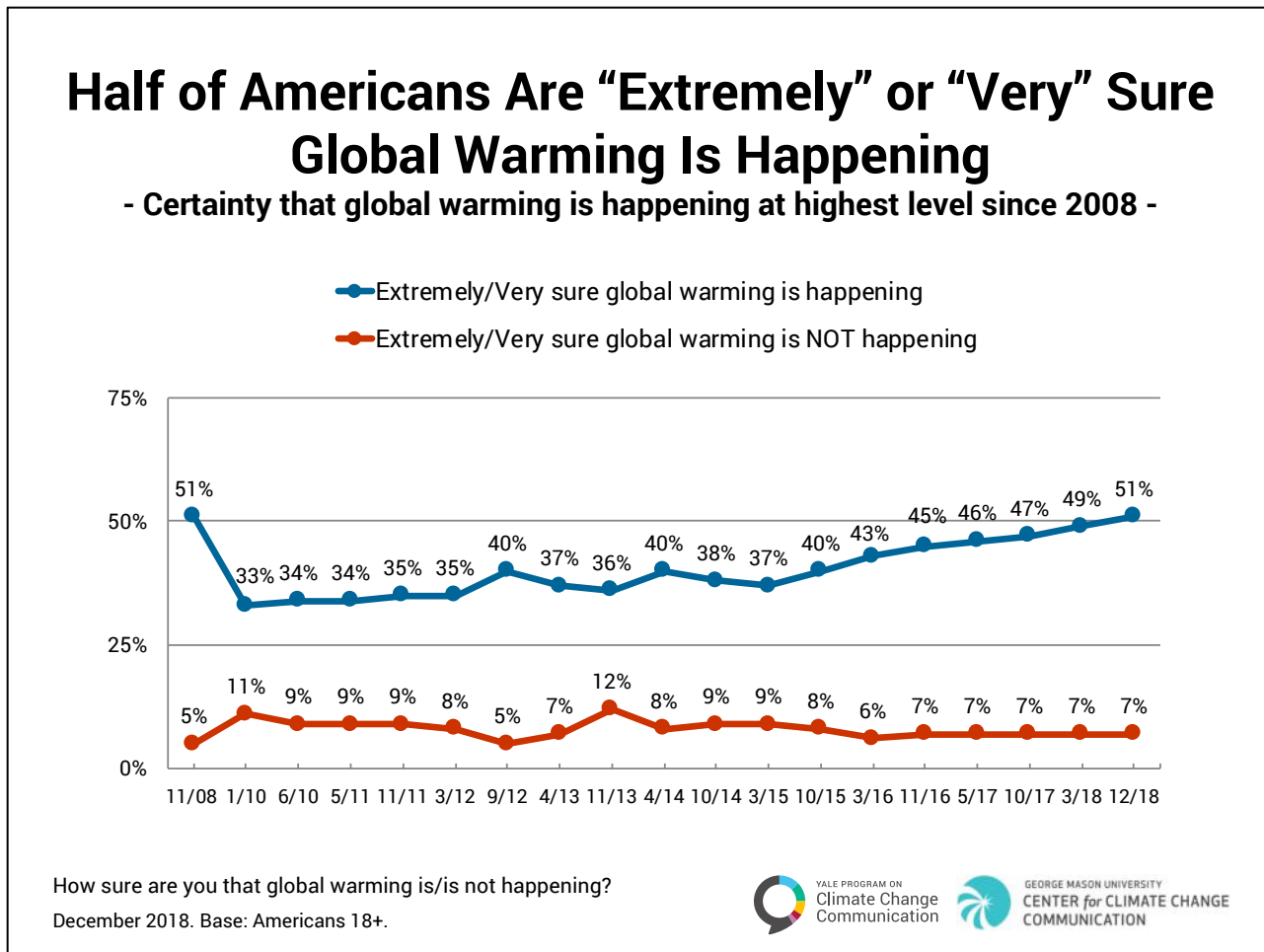
About seven in ten Americans (73%) think global warming is happening, the highest percentage since our surveys began in 2008. By contrast, only about one in seven Americans (14%) think global warming is not happening.



1.2. Half of Americans are "extremely" or "very" sure global warming is happening. Fewer than one in ten are as sure it isn't happening.

Fifty-one percent of Americans are either "extremely" or "very" sure global warming is happening. Far fewer – 7% – are "extremely" or "very sure" global warming isn't happening.

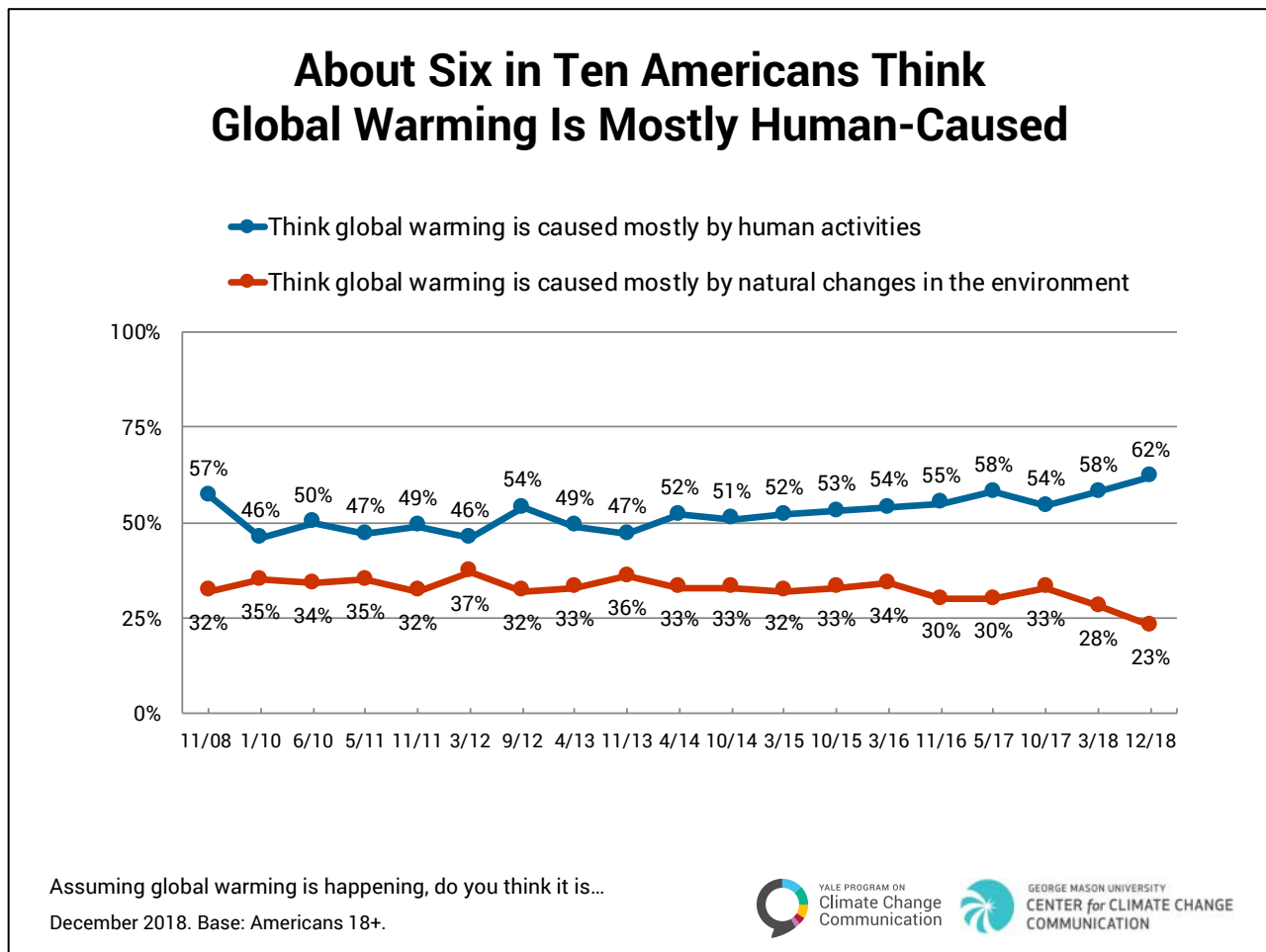
The percentage who are sure global warming is happening has risen steadily over the past three years and now matches the highest level since our surveys began in 2008.



1.3. About six in ten Americans think global warming is mostly human-caused.

The 2018 U.S. National Climate Assessment (written and reviewed by hundreds of climate experts over the course of four years) states: "Greenhouse gas emissions from human activities are the only factors that can account for the observed warming over the last century; there are no credible alternative human or natural explanations supported by the observational evidence" (pp. 39-40).¹

A majority of Americans (62%) understand that global warming is mostly human-caused, the highest level since our surveys began in 2008. By contrast, about one in four (23%) say it is due mostly to natural changes in the environment, the lowest level since our surveys began.

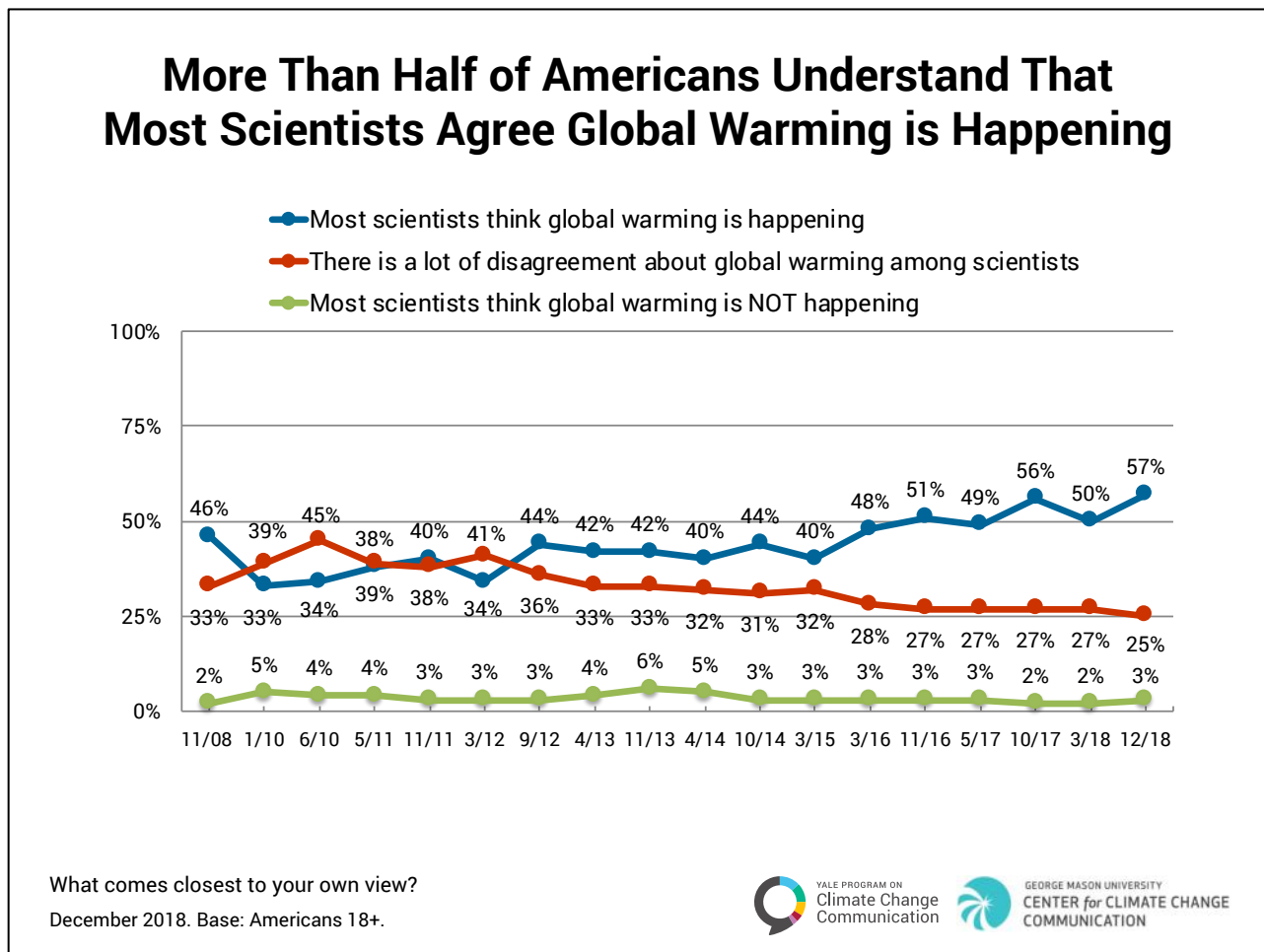


¹ <https://nca2018.globalchange.gov/>

1.4. More than half of Americans understand that most scientists agree global warming is happening.

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

Now, more than half of Americans (57%) understand most scientists agree that global warming is happening, the highest level since our surveys began in 2008, and a large increase (+24 percentage points) since the lowest level for this response in 2010. By contrast, one in four Americans (25%) think there is a lot of disagreement among scientists about whether or not global warming is happening, the lowest level since our surveys began. Very few Americans (3%) think most scientists agree that global warming is *not* happening.

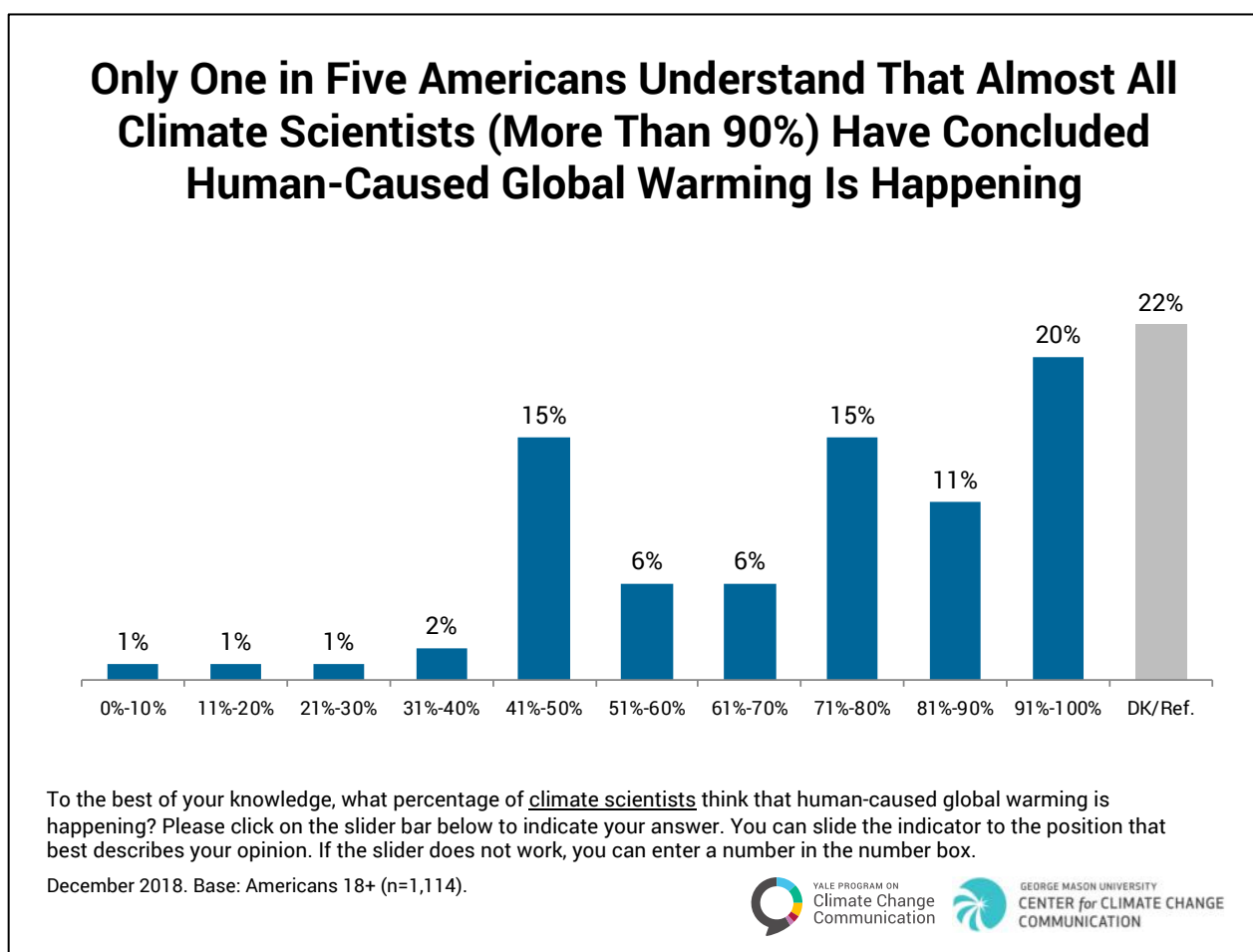


² Cook, J., Oreskes, N., Doran, P. T., Anderegg, W. R. I., Verheggen, B., Maibach, E. W., Carlton, J. S., Lewandowski, S., Skuce, A. G., Green, S. A., Nuccitelli, D., Jacobs, P., Richardson, M., Winkler, B., Painting, R., & Rice, K. (2016). Consensus on consensus: A synthesis of consensus estimates on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

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

Although the majority of Americans now understand that most scientists think global warming is happening, fewer understand just how strong the level of consensus among scientists is. Only one in five Americans (20%) understand that nearly all climate scientists (more than 90%) are convinced that human-caused global warming is happening, an increase of five percentage points since our previous survey in March 2018. About the same proportion of Americans (22%) say they "don't know" what percentage of climate scientists think human-caused climate change is happening, an eight point decrease since March.³

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, and worrisome) and support for action.⁴



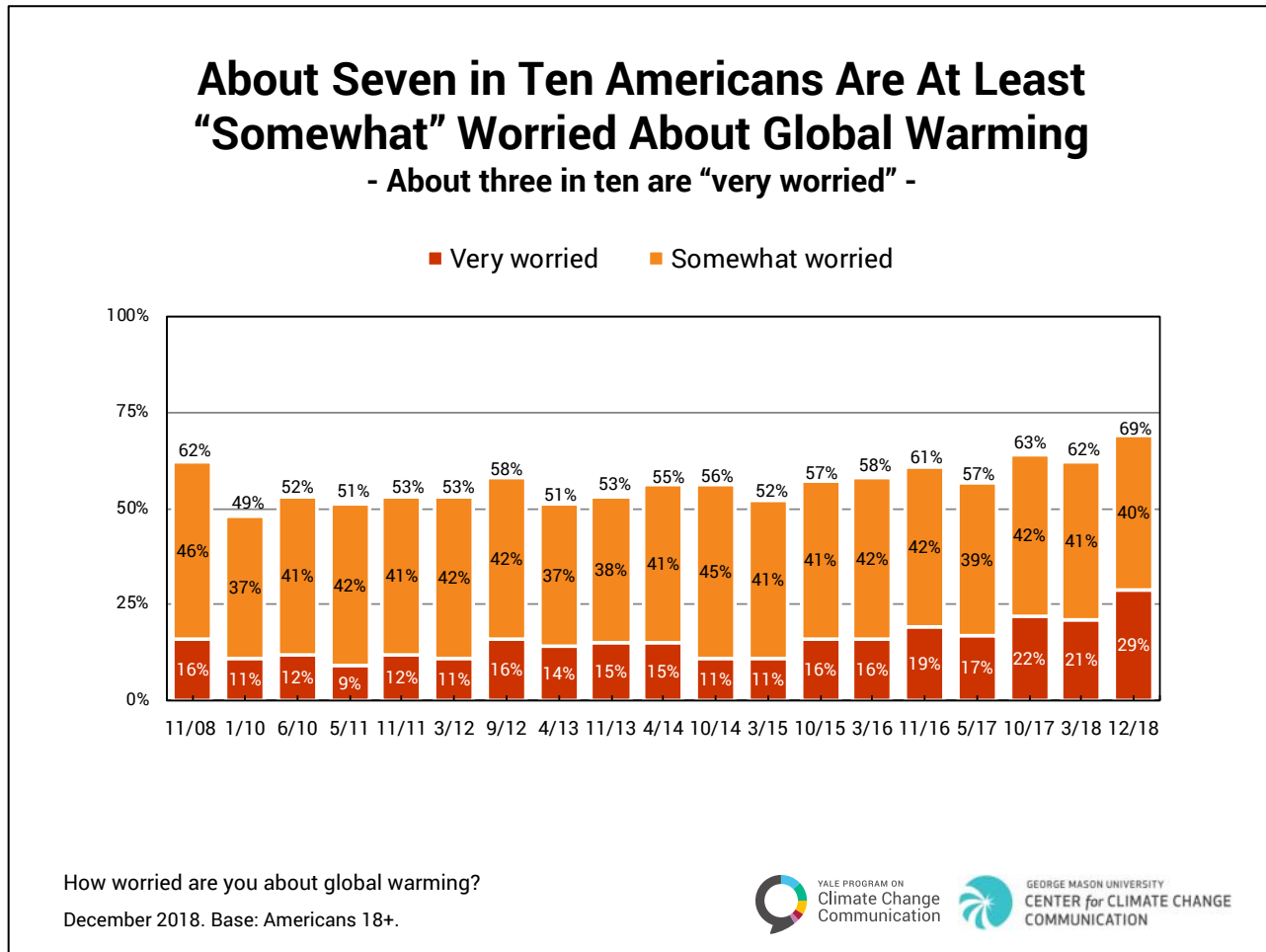
³ Respondents were asked to estimate the percentage of climate scientists who have concluded that human-caused global warming is happening by moving a simulated "slider bar" which appeared on the screen of their computer. This slider allowed respondents to move the marker from "0%" on the left to "100%" on the right, or to any whole number between the two. A "don't know" response option appeared below the slider bar.

⁴ 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](https://doi.org/10.1371/journal.pone.0118489)

2. Emotional Responses to Global Warming

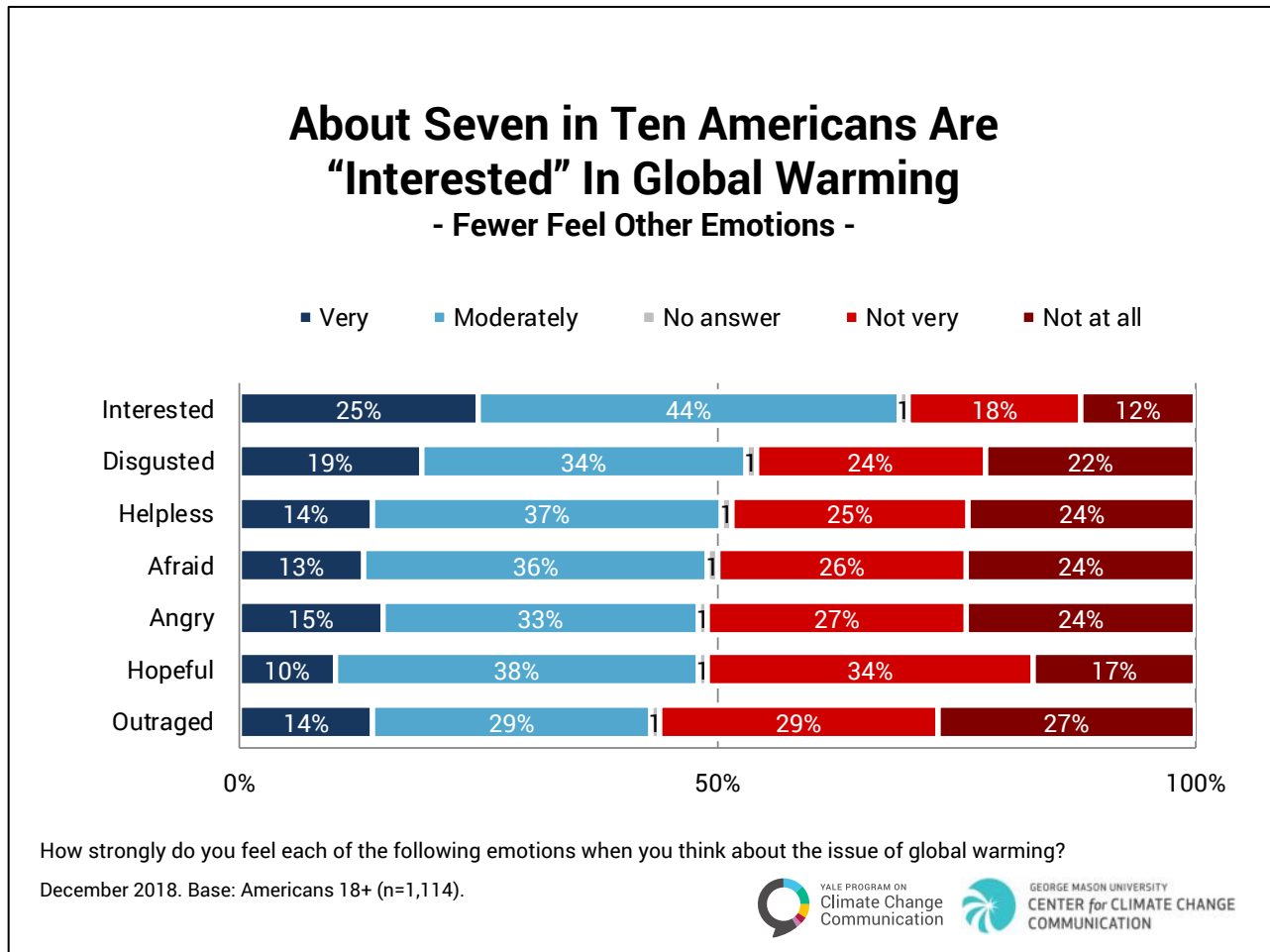
2.1. About seven in ten Americans are at least “somewhat worried” about global warming, with about three in ten “very worried.”

About seven in ten Americans (69%) say they are at least “somewhat worried” about global warming, the highest level since our surveys began in 2008, and an increase of seven percentage points since our previous survey in March 2018. About three in ten Americans (29%) are “very worried,” an eight-point increase since March.



2.2. About seven in ten Americans are "interested" in global warming, but fewer feel other emotions.

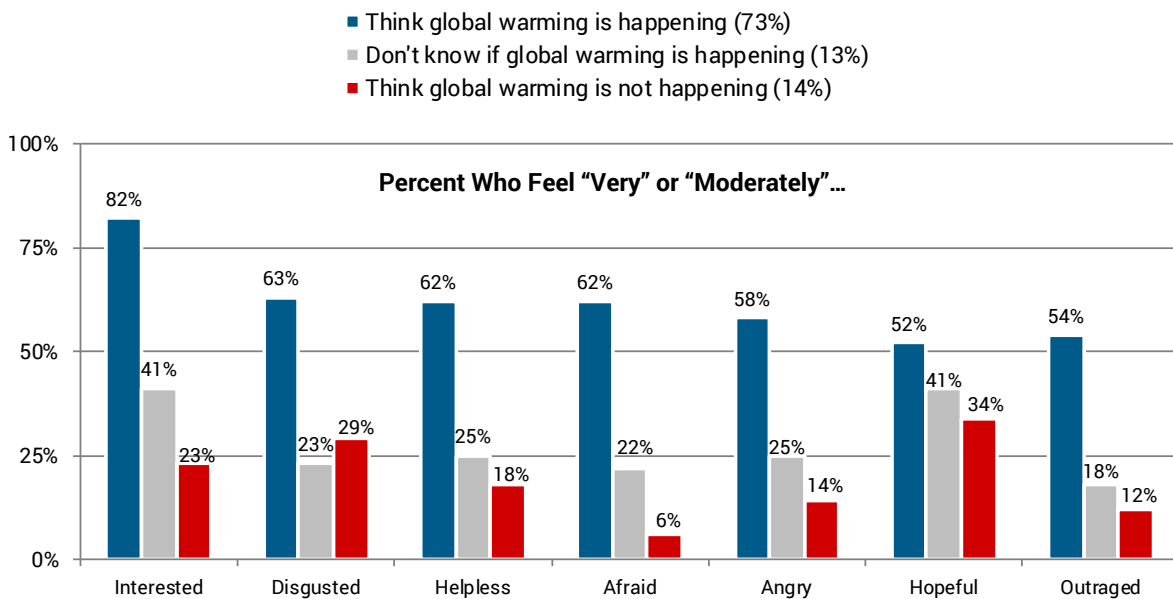
When asked how strongly they feel various emotions when they think about global warming, about seven in ten Americans (69%, +7 percentage points since March 2018) say they feel very or moderately "interested" in it, followed by those who say they feel "disgusted" (53%, +6 points), "helpless" (51%, +6 points), "afraid" (49%, +11 points), "angry" (48%, +9 points), "hopeful" (48%, +7 points), and/or "outraged" (43%, +6 points).



Emotional reactions to global warming may be felt for different reasons, and signify different meanings, depending on an individual’s beliefs about global warming. For instance, someone who thinks global warming is happening may feel "disgusted" about it for different reasons than someone who thinks global warming is *not* happening. For that reason, we looked separately at people’s emotional reactions to global warming depending on whether they think it *is* happening, don’t know whether it is happening, or think it is *not* happening.

About eight in ten (82%) Americans who think global warming is happening say they are very or moderately "interested" in it. Half, or more, feel negative emotions, including "disgusted" (63%), "helpless" (62%), "afraid" (62%), "angry" (58%), and/or "outraged" (54%). About half feel "hopeful" (52%). Conversely, relatively few Americans who think global warming isn’t happening feel any emotions about it, the most common being “hopeful” (34%).

A Majority of Americans Who Think Global Warming is Happening Feel A Range of Emotions



How strongly do you feel each of the following emotions when you think about the issue of global warming?

December 2018. Base: Americans 18+ (n=1,114).

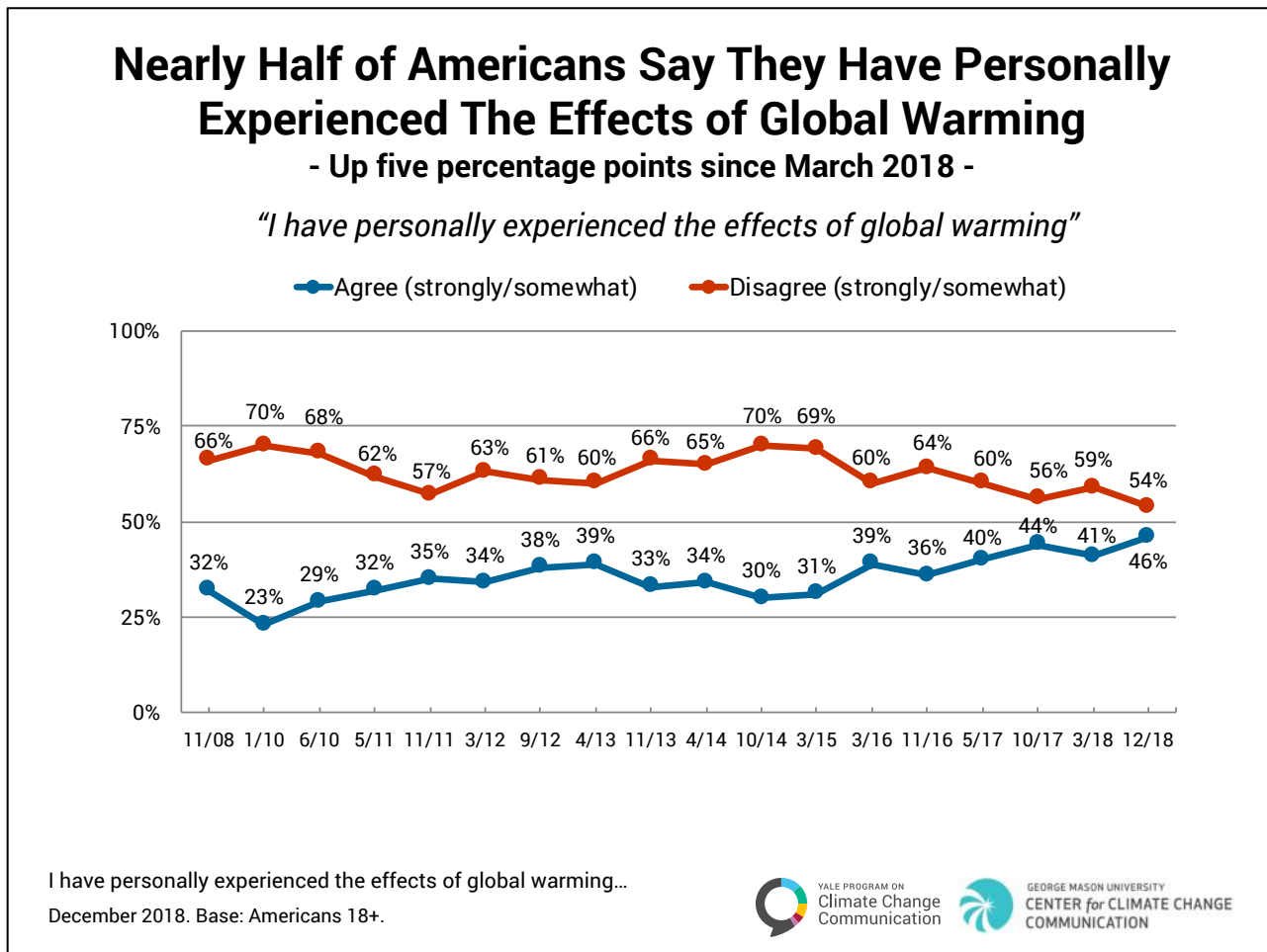


3. Perceived Risks of Global Warming

3.1. Nearly half of Americans say they have personally experienced the effects of global warming.

Nearly half of Americans (46%) say they have personally experienced the effects of global warming, while slightly more than half (54%) say they have not.

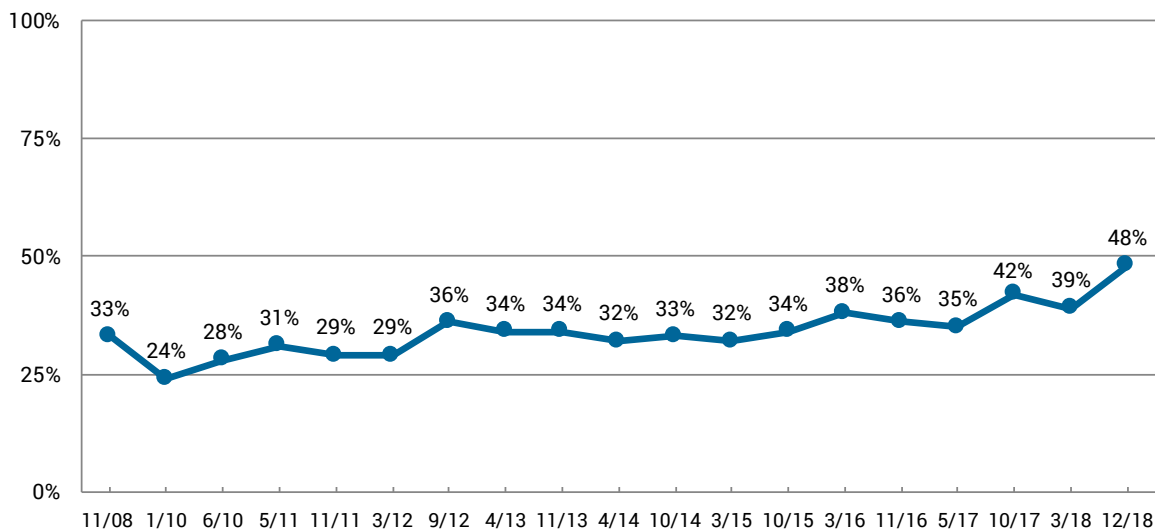
The percentage of Americans who say they have personally experienced the effects of global warming has increased by five percentage points since our previous survey in March 2018, and is at its highest level since our surveys began in 2008.



3.2. Nearly half of Americans think people in the U.S. are being harmed "right now" by global warming.

Nearly half of Americans (48%) think people in the U.S. are being harmed by global warming "right now," the highest level since our surveys began in 2008, and an increase of nine percentage points since our previous survey in March 2018.

Nearly Half of Americans Think People in the U.S. Are Being Harmed "Right Now" by Global Warming

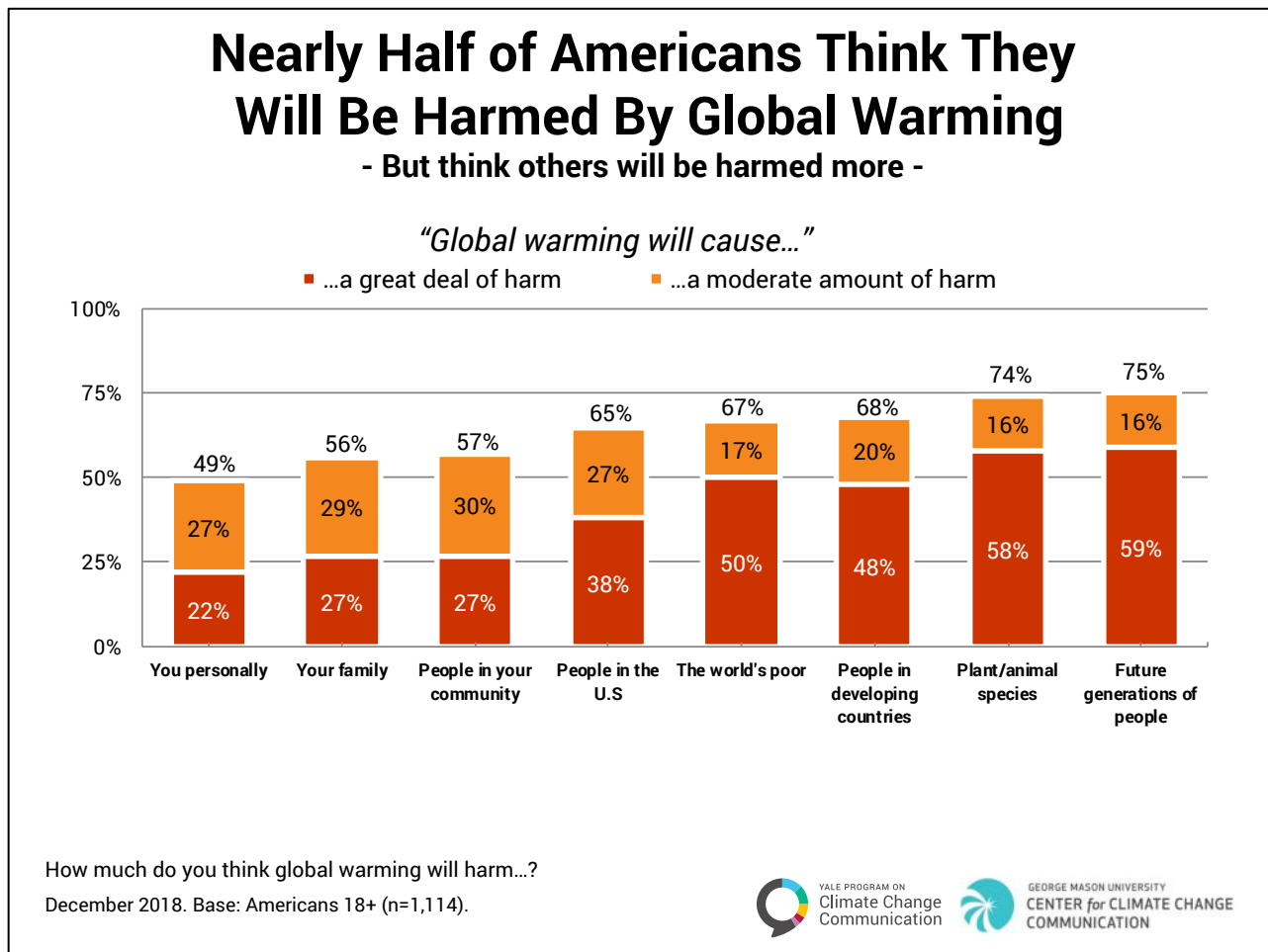


When do you think global warming will start to harm people...?
December 2018. Base: Americans 18+.



3.3. Nearly half of Americans think they will be harmed by global warming, and they think others will be harmed more.

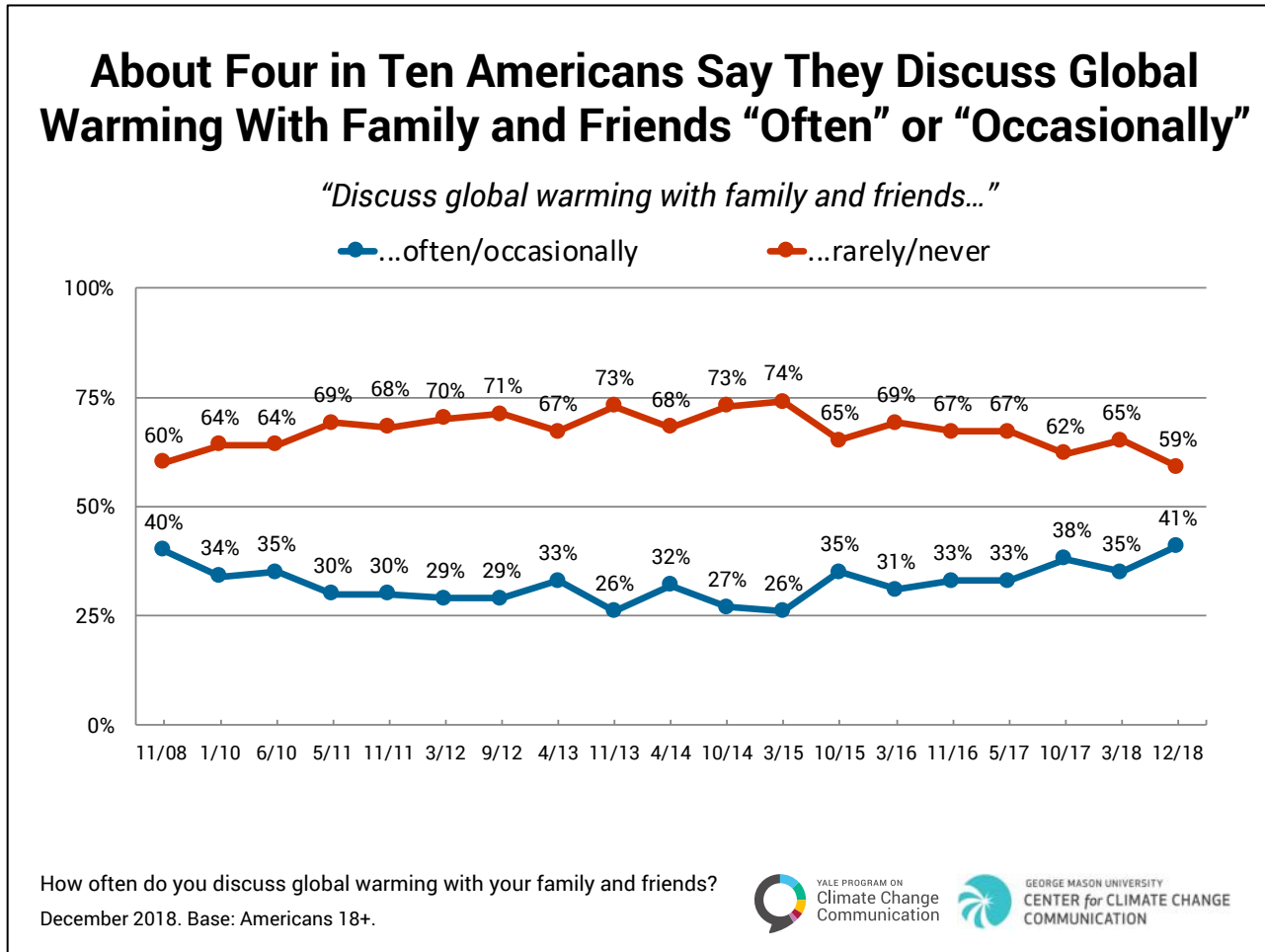
Many Americans understand that global warming will cause harm, and that understanding has increased since our previous survey in March 2018. Americans are most likely to think that future generations of people (75%, +4 percentage points since March) and plant and animal species (74%, +3 points) will be harmed a "great deal" or a "moderate amount" by global warming. Majorities also think people in developing countries (68%, +6 percentage points since March), the world's poor (67%, +4 points), people in the U.S. (65%, +7 points), people in their community (57%, +8 points), and/or their family (56%, +9 points) will be harmed. Nearly half (49%, +7 points) think they themselves will be harmed.



4. Personal and Social Engagement with Global Warming

4.1. About four in ten Americans say they discuss global warming with family and friends "often" or "occasionally."

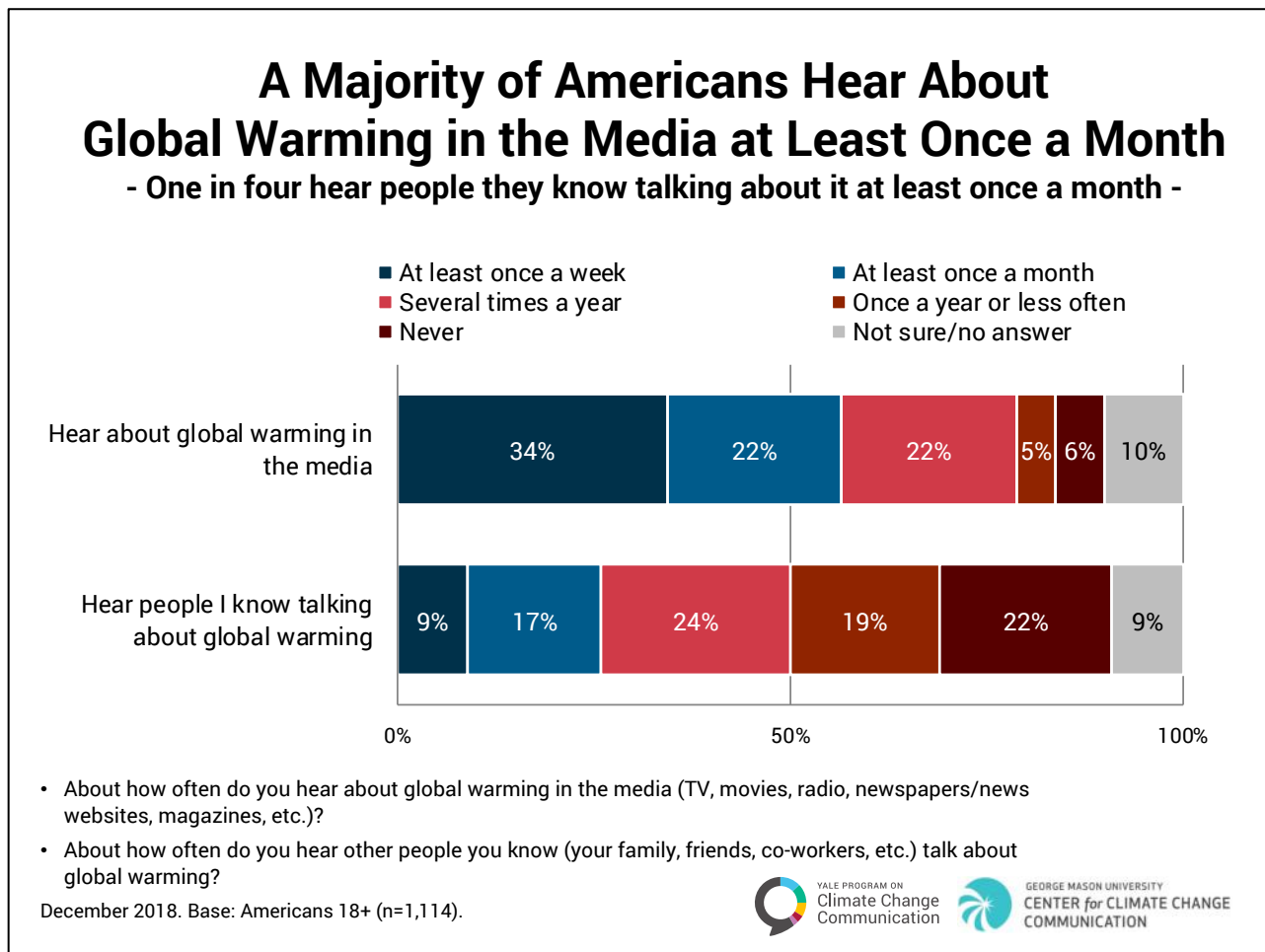
About four in ten (41%) Americans say they discuss global warming with family and friends at least occasionally. Although the majority of Americans (59%) rarely or never discuss global warming with family and friends, the percentage who do discuss global warming is six points higher than in March 2018, and is at its highest level since our surveys began in 2008.



4.2. A majority of Americans hear about global warming in the media at least once a month; about one in four hear people they know talking about it at least once a month.

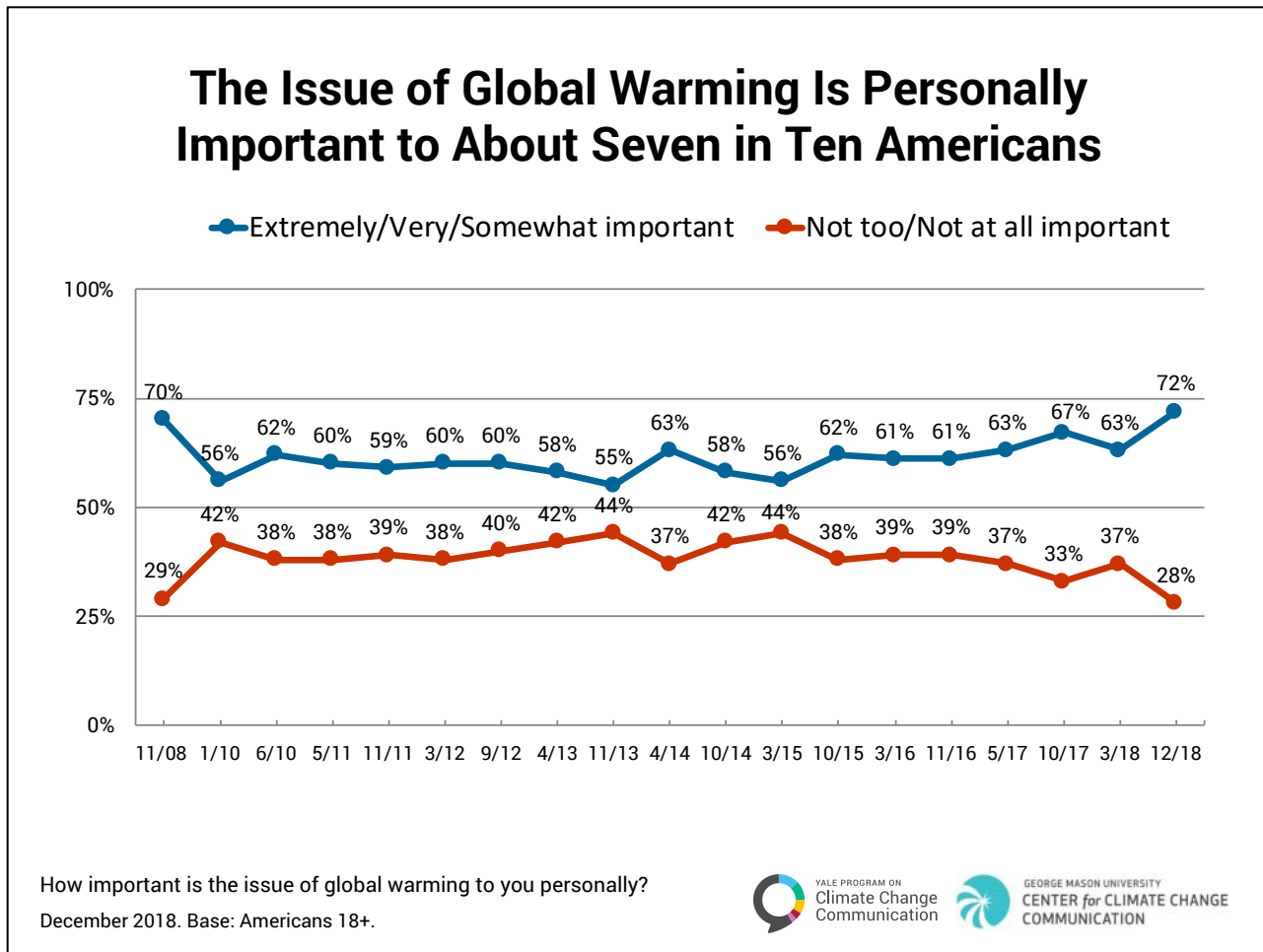
A majority of Americans (56%) say they hear about global warming in the media once a month or more frequently, an increase of 13 percentage points since our previous survey in March 2018. About one in four Americans (27%, a 10-point decrease since March) say they hear about it in the media only several times a year or less, and 6% say they never hear about it.

Only one in four Americans (26%, +6 points) say they hear people they know talking about global warming once a month or more. In contrast, 43% say they hear people they know talking about it only several times a year or less, and about one in five (22%) say they never hear people they know talk about global warming.



4.3. The issue of global warming is personally important to about seven in ten Americans.

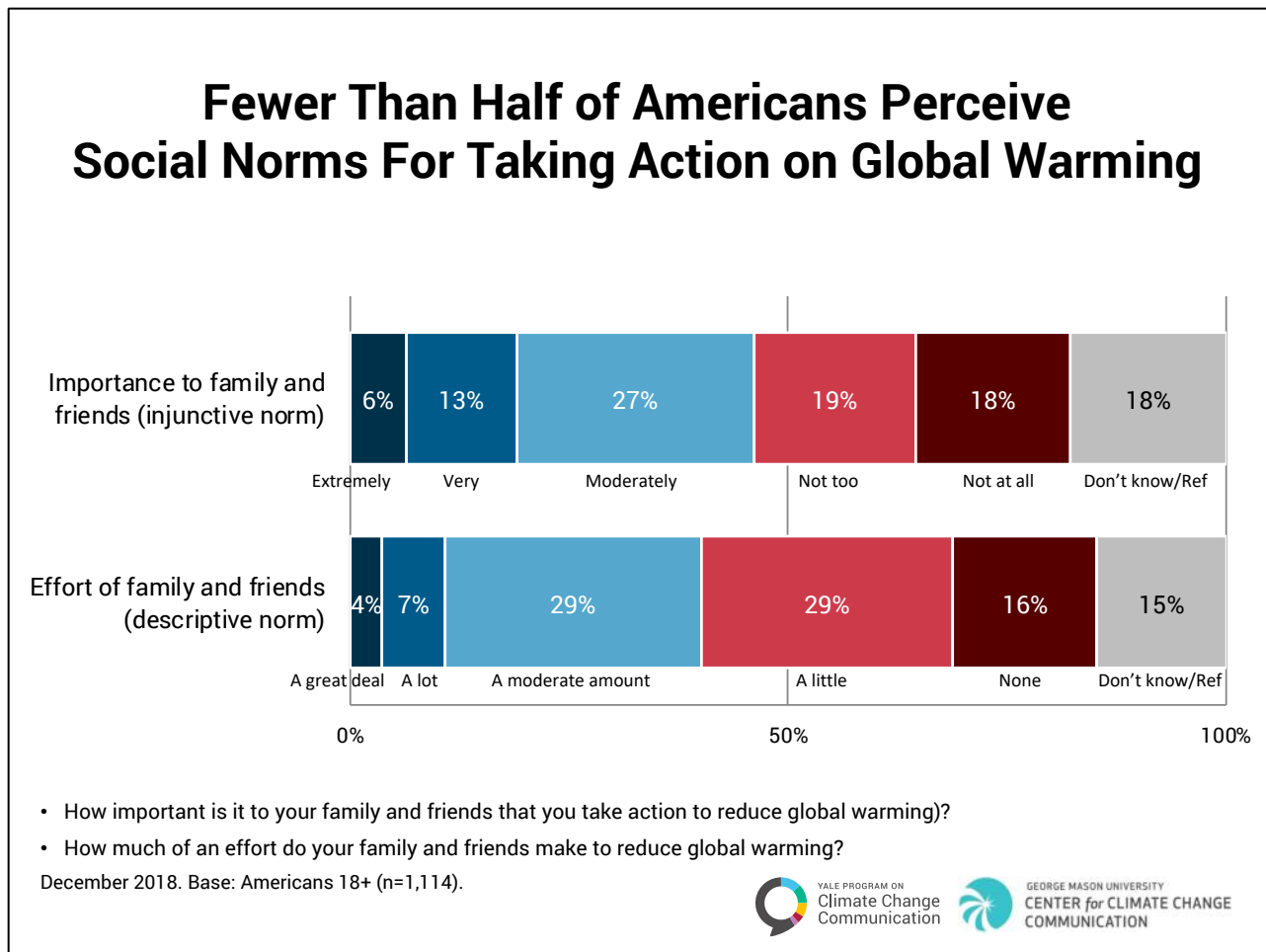
About seven in ten Americans (72%, +9 percentage points since our previous survey in March 2018) say the issue of global warming is either "extremely" (16%, +6 points), "very" (24%, +6 points), or "somewhat" (32%, -3 points) important to them personally, the highest level since our surveys began in 2008. About one in four (28%, -9 points) say global warming is either "not too" (15%) or "not at all" (14%) important personally, the lowest level since our surveys began.



4.4. Fewer than half of Americans perceive social norms for taking action on global warming.

The belief that people similar or close to you want or expect you to take action to reduce global warming – an "injunctive norm" – and the belief that people similar or close to you are taking action themselves to reduce global warming – a "descriptive norm" – can provide motivation to take action oneself.^{5,6,7,8}

Fewer than half of Americans (46%) perceive an injunctive norm, saying it is either "extremely" (6%), "very" (13%), or "moderately" important (27%) to their family and friends that they take action to reduce global warming. Four in ten Americans (40%) perceive a descriptive norm, saying their family and friends make either "a great deal of effort" (4%), "a lot of effort" (7%), or "a moderate amount of effort" (29%) to reduce global warming.



⁵ Ballew, M. T., Goldberg, M. H., Rosenthal, S. A., Cutler, M. J., & Leiserowitz, A. (2019). Climate change activism among Latino and White Americans. *Frontiers in Communication*, 3(58), 1-15. [doi: 10.3389/fcomm.2018.00058](https://doi.org/10.3389/fcomm.2018.00058)

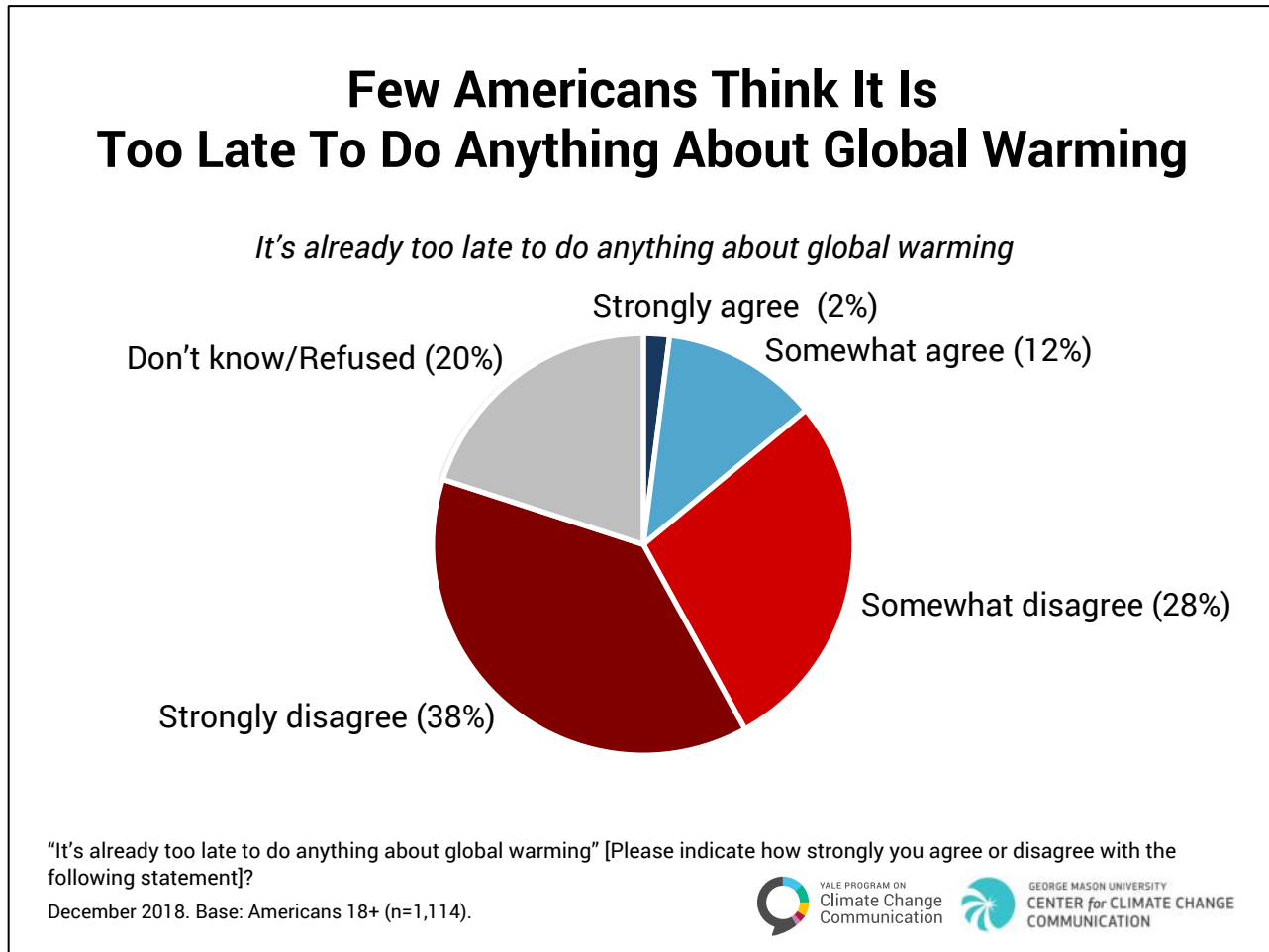
⁶ Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, 12(4), 105-109. [doi: 10.1111/1467-8721.01242](https://doi.org/10.1111/1467-8721.01242)

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](https://doi.org/10.1038/nclimate3025)

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](https://doi.org/10.1111/j.1467-9280.2007.01917.x)

4.5. Few Americans think it is too late to do anything about global warming.

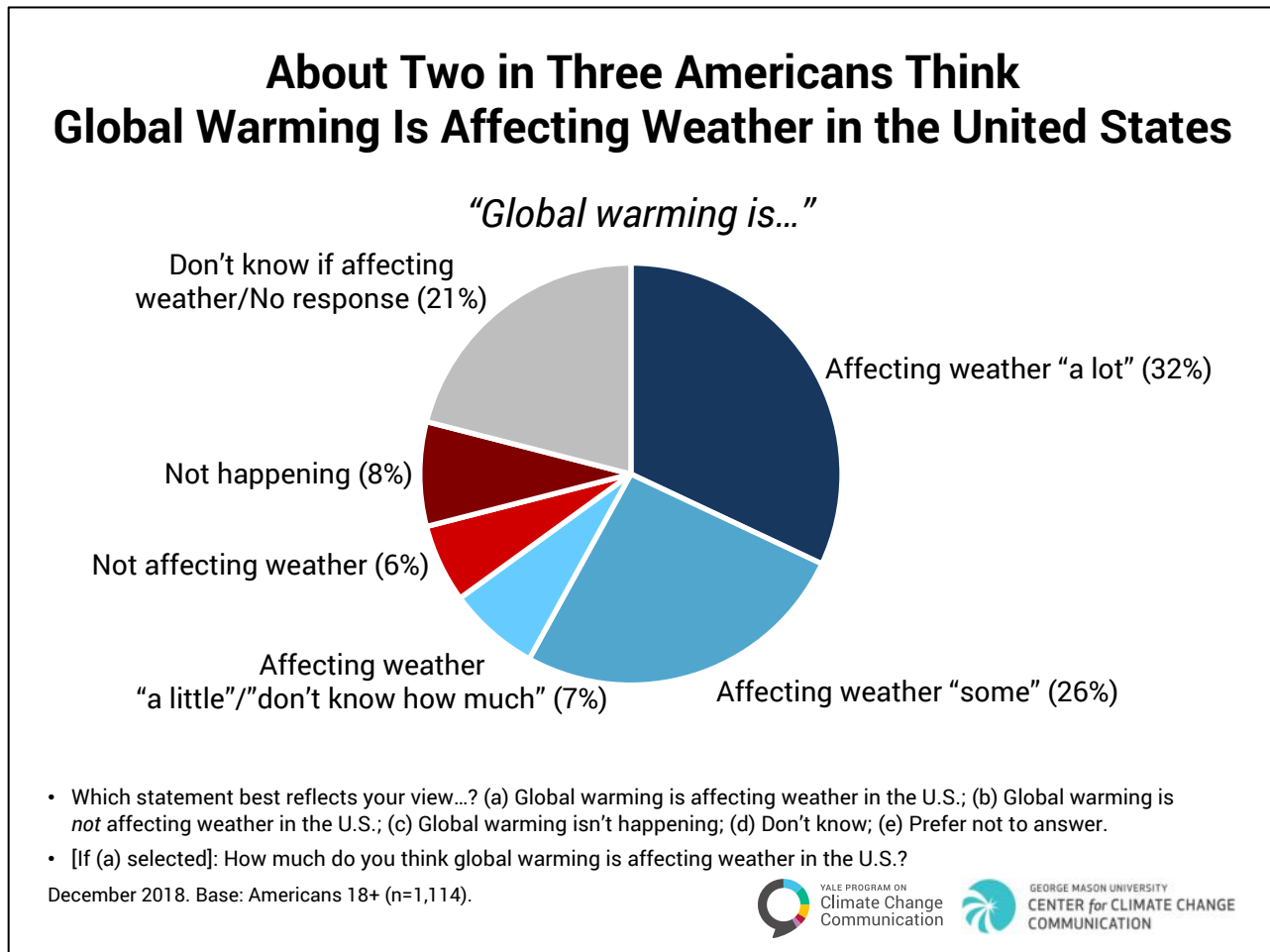
Only about one in seven Americans (14%) either strongly (2%) or somewhat (12%) agree that it is too late to do anything about global warming. In contrast, two in three Americans (66%) are more optimistic – they either strongly (38%) or somewhat (28%) disagree that it is too late to do anything about global warming.



5. Global Warming and Severe Weather

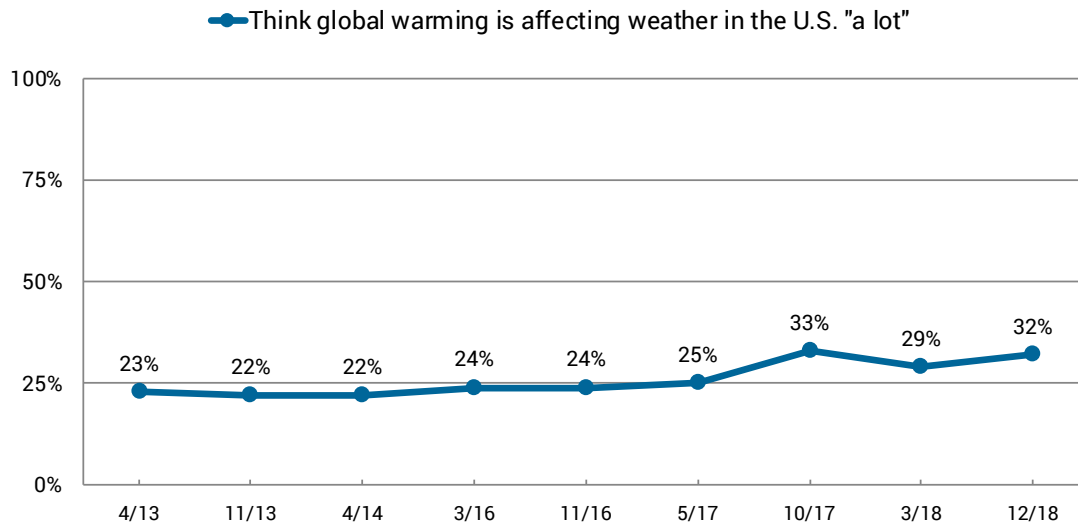
5.1. About two in three Americans think global warming is affecting weather in the United States.

About two in three Americans (65%) think global warming is affecting weather in the United States, including more than half (58%) who either think global warming is affecting U.S. weather "a lot" (32%) or "some" (26%).



The percentage of Americans who think global warming is affecting weather "a lot" has increased by three percentage points since March 2018. This is the second-highest level since 2013, second only to our October 2017 survey (which was conducted after a summer that included severe hurricanes, wildfires, and other extreme weather events).

Three in Ten Americans Think Global Warming Is Affecting Weather in the U.S. "A Lot"



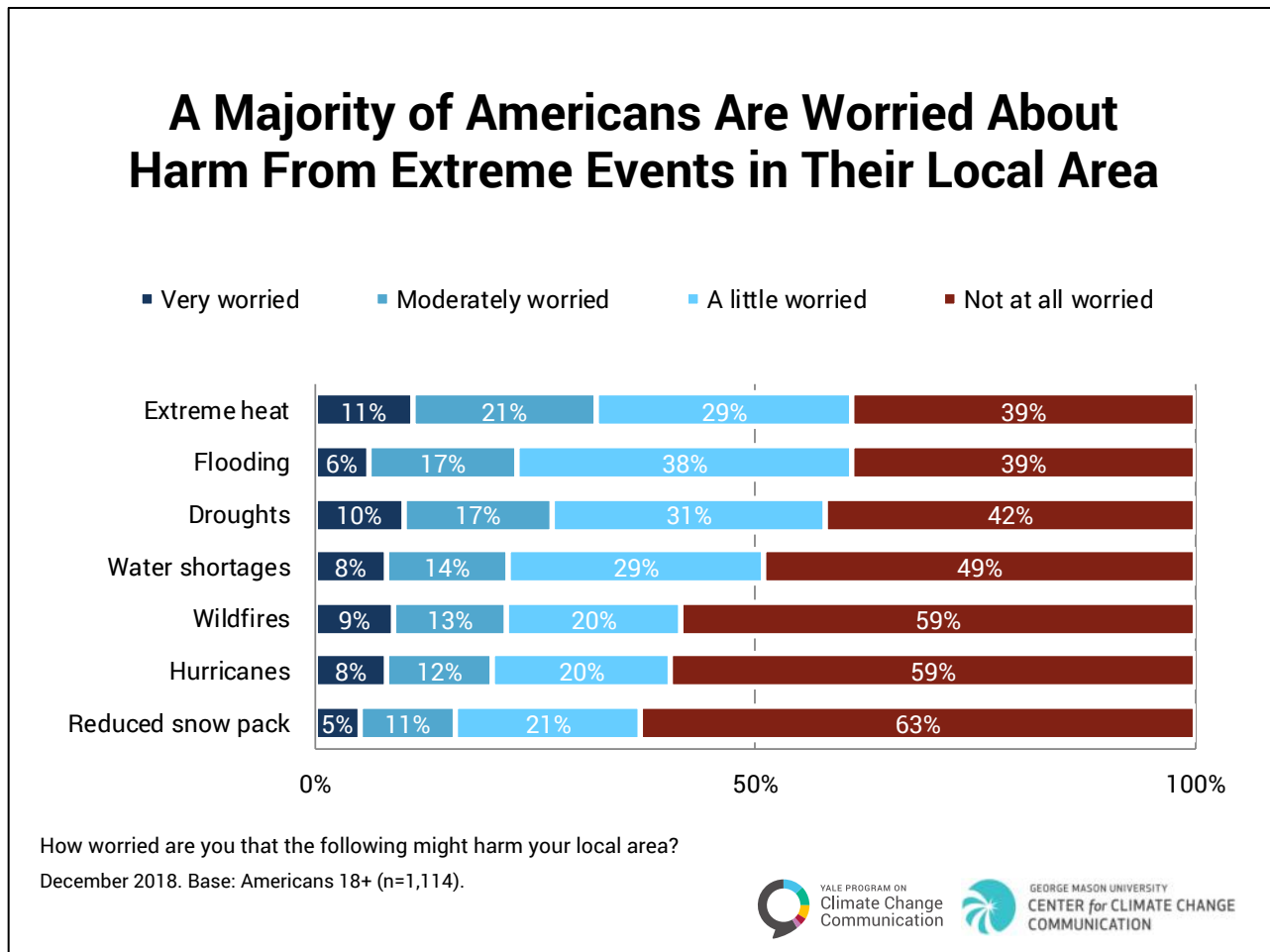
- Which statement best reflects your view...? (a) Global warming is affecting weather in the United States; (b) Global warming is not affecting weather in the United States; (c) Global warming isn't happening; (d) Don't know; (e) Prefer not to answer.
- If (a) selected: How much do you think global warming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

March 2018. Base: Americans 18+.



5.3. Majority of Americans are worried about harm from extreme events in their local area.

A majority of Americans are at least "a little worried" about extreme events in their local areas, including extreme heat (61%), flooding (61%), droughts (58%), and/or water shortages (51%). Fewer are worried about wildfires (41%), hurricanes (41%), and/or reduced snow pack (37%).



Appendix I: Data Tables

Note: In the data tables, -- denotes that there were no responses in that cell, whereas * denotes that the value is > 0 but < 0.5.

(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?

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	73	70	71	70	70	70	67	63	66	64	62	63	70	66	62	63	61	57	71
No	14	14	13	13	13	11	15	18	16	19	23	16	12	14	16	18	18	20	10
Don't know	13	16	15	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?

	Dec 2018	March 2018	Oct 2017	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	828	900	927	889	859	855	899	793	815	649	521	674	722	658	619	614	622	558	1,745
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Extremely sure	42	41	34	31	35	30	28	27	24	30	27	27	27	19	22	21	20	24	35
Very sure	28	29	32	34	30	31	32	32	35	32	31	33	30	34	35	33	36	35	37
Somewhat sure	27	27	32	33	32	34	37	38	38	33	39	37	40	42	39	40	40	37	24
Not at all sure	3	3	2	2	4	4	3	3	4	5	3	4	3	5	5	6	3	5	4

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

	Dec 2018	March 2018	Oct 2017	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	159	179	178	169	155	144	215	251	228	196	179	164	160	156	175	188	199	227	301
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Extremely sure	20	15	19	26	24	20	21	21	23	15	20	18	15	15	21	21	20	28	26
Very sure	30	39	33	26	29	37	32	31	30	26	35	28	27	41	37	30	31	31	28
Somewhat sure	41	34	39	41	39	34	36	37	35	47	36	42	45	35	37	38	44	34	38
Not at all sure	8	12	9	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...

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	62	58	54	58	55	54	53	52	51	52	47	49	54	46	49	47	50	46	57
Caused mostly by natural changes in the environment	23	28	33	30	30	34	33	32	33	33	36	33	32	37	32	35	34	35	32
Neither because global warming isn't happening	8	7	6	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	6	6	5	5	5	5	6	5	9	7	5	9	6	7	7	6	5
Other (please specify), unclassified	*	1	1	1	1	1	1	2	1	1	3	2	1	2	2	1	1	1	1

(Base: Americans 18+)**Which comes closest to your own view?**

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Most scientists think global warming is happening	57	49	56	49	51	48	40	44	40	42	42	44	34	40	38	34	33	46
There is a lot of disagreement among scientists about whether or not global warming is happening	25	27	27	27	27	28	32	31	32	33	33	36	41	38	39	45	39	33
Most scientists think global warming is not happening	3	2	2	3	3	3	3	3	5	6	4	3	3	3	4	4	5	2
Don't know enough to say	14	21	14	21	18	21	25	22	23	18	20	18	21	17	18	17	21	18

(Base: Americans 18+)

To the best of your knowledge, what percentage of climate scientists 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.

	Dec 2018	March 2018	Oct 2017	May 2017	Nov 2016	March 2016	Oct 2015	March 2015	Oct 2014
Unweighted base	1,114	1,278	1,304	1,266	1,226	1,204	1,330	1,263	1,275
	%	%	%	%	%	%	%	%	%
0% - 10%	1	1	1	2	2	1	2	1	1
11% - 20%	1	1	1	1	1	1	2	1	1
21% - 30%	1	4	5	4	7	4	4	4	4
31% - 40%	2	1	3	3	3	2	2	2	2
41% - 50%	15	10	13	13	13	13	12	14	15
51% - 60%	6	4	5	7	6	6	5	6	7
61% - 70%	6	5	5	6	7	8	6	8	7
71% - 80%	15	15	17	14	17	15	18	15	17
81% - 90%	11	10	10	10	9	8	10	8	7
91% - 100%	20	15	15	13	15	11	12	9	9
Don't know enough to say	22	34	24	28	21	32	27	31	30
Of those who provided an estimate:									
Mean	72	71	68	67	66	67	67	64	65
Median	75	75	75	73	74	71	74	68	67

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

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	29	21	22	17	19	16	16	11	11	15	15	14	16	11	12	9	12	11	16
Somewhat worried	40	41	42	39	42	42	41	41	45	41	38	37	42	42	41	42	41	37	46
Not very worried	19	22	23	27	24	25	27	29	25	27	25	30	25	30	30	28	30	27	24
Not at all worried	13	16	14	17	15	18	16	19	18	18	20	19	17	16	15	20	18	22	13

(Base: Americans 18+)**How strongly do you feel each of the following emotions when you think about the issue of global warming?****Interested**

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016	Oct 2015		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204	1,330		828	126	159
	%	%	%	%	%	%		%	%	%
Very	25	19	24	23	22	23		31	10	4
Moderately	44	42	43	43	45	43		51	31	19
Not very	18	20	20	15	16	19		13	34	29
Not at all	12	15	12	18	16	14		4	24	47

(Base: Americans 18+)**How strongly do you feel each of the following emotions when you think about the issue of global warming? (Cont'd.)****Disgusted**

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204		828	126	159
	%	%	%	%	%		%	%	%
Very	19	14	22	15	14		23	6	13
Moderately	34	33	33	28	34		40	17	16
Not very	24	26	25	28	25		23	39	14
Not at all	22	25	19	28	26		13	36	55

Helpless

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016	Oct 2015		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204	1,330		828	126	159
	%	%	%	%	%	%		%	%	%
Very	14	10	15	12	13	14		19	5	1
Moderately	37	35	37	34	36	39		43	20	17
Not very	25	27	26	26	23	25		25	35	15
Not at all	24	25	20	26	27	21		13	40	66

(Base: Americans 18+)**How strongly do you feel each of the following emotions when you think about the issue of global warming? (Cont'd.)****Hopeful**

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016	Oct 2015		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204	1,330		828	126	159
	%	%	%	%	%	%		%	%	%
Very	10	7	7	11	10	11		9	10	13
Moderately	38	35	37	38	38	39		42	31	22
Not very	34	36	39	30	30	32		38	27	22
Not at all	17	19	16	21	20	17		10	30	41

Afraid

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204		828	126	159
	%	%	%	%	%		%	%	%
Very	13	10	14	12	11		17	7	1
Moderately	36	28	34	30	31		45	15	5
Not very	26	31	28	27	26		25	34	23
Not at all	24	28	22	29	30		13	43	69

(Base: Americans 18+)**How strongly do you feel each of the following emotions when you think about the issue of global warming? (Cont'd.)****Angry**

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204		828	126	159
	%	%	%	%	%		%	%	%
Very	15	11	16	12	12		18	7	6
Moderately	33	28	32	26	29		40	18	9
Not very	27	31	28	31	29		28	33	20
Not at all	24	28	22	30	29		13	42	63

Outraged

	Dec 2018	March 2018	Oct 2017	Nov 2016	March 2016		Global Warming is Happening, Dec 2018	Don't Know if Global Warming is Happening, Dec 2018	Global Warming is <i>Not</i> Happening, Dec 2018
Unweighted base	1,114	1,278	1,304	1,226	1,204		828	126	159
	%	%	%	%	%		%	%	%
Very	14	11	15	12	12		18	6	2
Moderately	29	26	28	24	29		36	12	11
Not very	29	32	32	32	28		29	37	17
Not at all	27	29	23	31	30		16	43	69

(Base: Americans 18+)**How much do you agree with the following statements?****I have personally experienced the effects of global warming.**

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	46	41	44	40	36	39	31	30	34	33	39	38	34	35	32	29	23	32
Strongly Agree	11	5	8	5	7	7	4	4	5	6	6	4	5	7	5	5	4	4
Somewhat Agree	35	36	36	34	29	33	27	26	29	27	33	34	30	28	27	24	19	28
Strongly/ Somewhat Disagree	54	59	56	60	64	60	69	70	65	66	60	61	63	57	62	68	70	66
Somewhat Disagree	24	27	30	29	29	29	29	29	29	30	29	30	30	34	32	34	32	42
Strongly Disagree	31	32	26	31	35	31	40	41	35	36	31	31	33	23	30	34	37	24

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

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	48	39	42	35	36	38	34	32	33	32	34	34	36	29	29	31	28	24	33
In 10 years	7	11	12	11	14	12	13	11	10	9	10	11	13	12	10	11	12	12	13
In 25 years	14	12	12	13	15	13	14	13	14	14	14	12	11	14	13	13	12	14	13
In 50 years	7	12	11	13	10	12	11	11	12	15	11	12	12	14	15	12	13	13	13
In 100 years	9	11	11	13	9	10	11	13	13	14	12	13	13	15	15	11	15	13	12
Never	14	15	12	15	16	14	18	20	18	16	18	17	15	16	16	19	19	23	15

(Base: Americans 18+)**How much do you think global warming will harm...?****You personally**

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	22	14	16	13	14	12	14	10	12	13	13	15	16	11	9	11	10	14	10
A moderate amount	27	28	33	29	27	28	27	26	24	25	25	25	26	18	21	18	21	23	22
Only a little	20	27	24	26	25	24	26	26	26	26	27	26	25	30	28	27	27	22	24
Not at all	20	20	19	22	25	23	20	25	27	25	26	23	20	29	25	25	24	31	22
Don't know	10	11	7	9	8	12	12	13	11	11	8	11	13	11	17	17	18	11	23

Your family

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	27	17	19	16	17	15	13	15	16	17	17	18	12	10	12	11	15	11
A moderate amount	29	30	35	31	30	30	28	28	27	25	27	28	21	24	21	25	25	24
Only a little	17	25	22	25	24	22	23	23	24	25	23	23	29	27	25	24	21	23
Not at all	17	17	16	19	21	21	22	23	21	24	20	17	26	21	23	21	28	19
Don't know	9	12	8	9	8	12	13	11	11	9	12	14	12	18	17	19	11	23

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

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	27	17	21	16	19	15	14	16	17	14	17	19	12	11	12	11	15	13
A moderate amount	30	32	34	32	30	31	29	27	28	29	28	29	22	24	21	25	27	26
Only a little	16	22	22	23	22	23	24	23	24	24	23	23	29	27	25	24	22	20
Not at all	16	16	15	18	20	19	20	22	20	23	18	15	24	21	21	21	24	17
Don't know	10	12	8	10	9	12	14	11	11	10	13	13	13	18	18	19	12	23

People in the United States

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	38	28	34	25	28	24	23	19	23	23	23	22	26	18	15	16	16	22	21
A moderate amount	27	30	33	33	32	35	34	30	30	30	30	30	31	28	29	26	28	29	28
Only a little	12	18	14	19	17	16	18	20	20	18	19	19	17	24	23	22	22	16	15
Not at all	13	12	11	15	15	15	14	17	17	18	20	16	12	18	17	17	17	22	14
Don't know	10	12	7	9	8	10	12	14	11	11	8	12	13	12	16	18	18	12	22

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

	Dec 2018	March 2018	Oct 2017	May 2017	Nov 2016	March 2016	Oct 2015	March 2015
Unweighted base	1,114	1,278	1,304	1,266	1,226	1,204	1,330	1,263
	%	%	%	%	%	%	%	%
A great deal	50	40	49	39	43	40	36	30
A moderate amount	17	22	21	23	21	22	26	23
Only a little	8	13	10	15	11	12	12	16
Not at all	12	12	10	13	13	13	13	16
Don't know	13	13	9	10	12	14	13	15

People in developing countries

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	48	38	47	37	40	36	34	27	29	31	32	30	35	26	22	23	22	29	31
A moderate amount	20	24	25	25	25	27	27	26	26	24	24	25	29	26	28	21	28	25	22
Only a little	8	12	10	16	12	12	13	17	16	17	17	18	10	19	17	19	17	14	11
Not at all	11	12	10	13	13	13	13	15	17	16	19	13	11	16	15	16	15	19	13
Don't know	13	13	9	9	11	12	13	15	12	12	9	13	15	14	18	18	18	13	24

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

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	58	53	54	49	50	48	42	44	47	46	39	43	43	41	38	40	43	45
A moderate amount	16	18	21	22	19	23	21	20	19	19	24	25	21	19	18	21	19	17
Only a little	8	9	9	10	10	9	12	10	12	11	13	11	13	16	12	12	11	8
Not at all	9	9	8	11	11	11	12	13	12	15	13	8	10	10	12	13	15	9
Don't know	9	10	8	8	9	10	13	12	11	8	10	13	12	15	17	15	12	20

Future generations of people

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	59	52	54	50	53	48	51	42	46	49	46	42	47	43	40	36	39	42	44
A moderate amount	16	18	21	20	18	22	19	21	18	18	19	21	21	22	22	22	22	22	17
Only a little	6	9	8	10	9	8	8	10	11	10	11	12	9	12	13	10	11	9	7
Not at all	9	9	9	11	10	10	11	12	13	12	15	12	8	11	10	11	12	15	10
Don't know	10	12	8	8	10	11	11	15	13	11	9	12	14	13	16	18	16	12	22

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

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	8	5	6	5	6	4	5	3	3	4	3	4	3	5	4	4	5	5	5
Occasionally	34	30	32	28	27	27	30	23	24	28	23	28	26	24	26	26	30	29	35
Rarely	33	34	37	36	36	36	33	38	36	39	38	39	38	40	39	41	39	34	33
Never	26	31	25	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.)?**

	Dec 2018	March 2018	Oct 2017	May 2017
Unweighted base	1,114	1,278	1,304	1,266
	%	%	%	%
At least once a week	34	20	24	23
At least once a month	22	23	28	20
Several times a year	22	28	25	26
Once a year or less often	5	9	7	9
Never	6	7	3	9
Not sure/No answer	10	13	13	13

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

	Dec 2018	March 2018	Oct 2017	May 2017
Unweighted base	1,114	1,278	1,304	1,266
	%	%	%	%
At least once a week	9	5	7	6
At least once a month	17	15	17	13
Several times a year	24	24	24	21
Once a year or less often	19	20	21	22
Never	22	22	18	28
Not sure/No answer	9	14	12	11

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

	Dec 2018	March 2018	Oct 2017	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	1,114	1,278	1,304	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	16	10	12	10	10	9	7	6	5	8	8	8	6	6	6	7	6	5	10	
Very important	24	18	19	16	17	17	18	15	16	17	14	13	17	14	13	15	18	14	20	
Somewhat important	32	35	37	38	34	35	37	35	37	38	33	36	36	40	40	37	38	37	39	
Not too important	15	22	19	22	22	22	21	24	24	21	25	24	24	23	24	24	24	23	18	
Not at all important	14	15	14	15	16	17	17	20	18	16	18	18	17	15	15	14	14	19	11	

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

	Dec 2018	May 2017
Unweighted base	1,114	1,266
	%	%
Extremely important	6	5
Very important	13	13
Moderately important	27	27
Not too important	19	23
Not at all important	18	20
Don't know/Refused	18	12

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

	Dec 2018	May 2017
Unweighted base	1,114	1,266
	%	%
A great deal of effort	4	3
A lot of effort	7	8
A moderate amount of effort	29	31
A little effort	29	29
No effort	16	19
Don't know/Refused	15	11

(Base: Americans 18+)

Please indicate how strongly you agree or disagree with the following statement:

It's already too late to do anything about global warming.

	Dec 2018
Unweighted base	1,114
	%
Strongly agree	2
Somewhat agree	12
Somewhat disagree	28
Strongly disagree	38
Don't know	15
Prefer not to answer/Refused	5

(Base: Americans 18+)**Which statement below best reflects your view?****[For those who respond “global warming is affecting weather in the United States”]****How much do you think global warming is affecting weather in the United States?**

	Dec 2018	March 2018	Oct 2017	May 2017	Nov 2016	March 2016	April 2014	Nov 2013	April 2013
Unweighted base	1,114	1,278	1,304	1,266	1,226	1,204	1,013	830	1,045
	%	%	%	%	%	%	%	%	%
Global warming is affecting the weather in the United States (Total)	65	61	64	59	60	60	57	56	58
<i>A lot</i>	32	29	33	25	24	24	22	22	23
<i>Some</i>	26	25	23	28	26	28	25	26	27
<i>A little</i>	5	6	6	5	8	7	9	6	6
<i>Don't know/Refused</i>	2	1	2	2	2	1	2	2	2
Global warming is not affecting weather in the United States	6	5	6	5	7	5	8	7	7
Global warming isn't happening	8	9	8	10	9	9	10	13	10
Don't know	15	18	18	21	21	20	19	17	19
Prefer not to answer/No response	5	7	5	5	4	6	6	7	6

(Base: Americans 18+)

Do you think global warming made each of the following worse or not?

[For those who respond “yes, global warming made this worse”]

Do you think global warming made each of the following a little worse, moderately worse, or a lot worse?

Wildfires in the western U.S., including California, in the summer and fall, 2018

	Dec 2018
Unweighted base	1,114
	%
Yes, global warming made this worse (Total)	50
<i>A lot worse</i>	31
<i>Moderately worse</i>	13
<i>A little worse</i>	6
<i>Don't know</i>	1
No, global warming did not make this worse	24
Don't know/No response	25

Hurricanes Florence and Michael (which struck the U.S. in the summer and fall, 2018)

	Dec 2018
Unweighted base	1,114
	%
Yes, global warming made this worse (Total)	49
<i>A lot worse</i>	26
<i>Moderately worse</i>	17
<i>A little worse</i>	5
<i>Don't know</i>	1
No, global warming did not make this worse	23
Don't know/No response	28

(Base: Americans 18+)

Do you think global warming made each of the following worse or not? (Cont'd)

[For those who respond “yes, global warming made this worse”]

Do you think global warming made each of the following a little worse, moderately worse, or a lot worse?

The earthquake and tsunami that struck Indonesia in the fall, 2018

	Dec 2018
Unweighted base	1,114
	%
Yes, global warming made this worse (Total)	34
<i>A lot worse</i>	17
<i>Moderately worse</i>	11
<i>A little worse</i>	5
<i>Don't know</i>	1
No, global warming did not make this worse	30
Don't know/No response	35

(Base: Americans 18+)**How worried are you that the following might harm your local area?****Extreme heat**

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	11	13
Moderately worried	21	21
A little worried	29	29
Not at all worried	39	36
No answer	--	1

Flooding

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	6	7
Moderately worried	17	22
A little worried	38	31
Not at all worried	39	39
No answer	*	1

Droughts

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	10	11
Moderately worried	17	19
A little worried	31	31
Not at all worried	42	39
No answer	*	1

Water shortages

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	8	9
Moderately worried	14	17
A little worried	29	25
Not at all worried	49	48
No answer	*	1

(Base: Americans 18+)**How worried are you that the following might harm your local area? (Cont'd.)****Wildfires**

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	9	9
Moderately worried	13	12
A little worried	20	21
Not at all worried	59	57
No answer	*	1

Hurricanes

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	8	9
Moderately worried	12	12
A little worried	20	17
Not at all worried	59	62
No answer	*	1

Reduced snow pack

	Dec 2018	March 2018
Unweighted base	1,114	1,278
	%	%
Very worried	5	5
Moderately worried	11	10
A little worried	21	16
Not at all worried	63	68
No answer	*	1

Appendix II: Survey Method

The data in this report are based on a nationally representative survey of 1,114 American adults, aged 18 and older. The survey was conducted November 28 – December 11, 2018. All questionnaires were self-administered by respondents in a web-based environment. The survey took, on average, 27 minutes to complete.

The sample was drawn from the Ipsos (formerly GfK) 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 U.S. Census Bureau norms.

The survey instrument was designed by Anthony Leiserowitz, Seth Rosenthal, Matthew Ballew, Matthew Goldberg, and Abel Gustafson of Yale University, and Edward Maibach and John Kotcher 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 for each wave, at the 95% confidence level, are plus or minus 3 percentage points except where noted.

- December 2018: Fielded November 28 – December 11 (n=1,114)
- March 2018: Fielded March 7 – March 24 (n=1,278)
- October 2017: Fielded October 20 – November 1 (n=1,304)
- 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 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, would be reported as $1\% + 1\% = 3\%$).

Appendix III: Sample Demographics

	N (unweighted)	% (weighted)
Total	1,114	100
Men	530	48
Women	584	52
iGen (18-21)	24	6
Millennial (22-37)	247	29
Generation X (38-53)	274	24
Baby Boomer (54-72)	449	34
Silent Generation (73+)	120	8
Less than high school	45	10
High school graduate	197	29
Some college/Associate degree/Technical degree	354	29
College graduate	292	18
Post graduate	226	15
<\$25K	136	14
\$25K - <\$50K	206	19
\$50K - <\$75K	185	17
\$75K - <\$100K	191	14
\$100K - <\$125K	131	12
\$125K+	265	24
White, non-Hispanic	811	64
Black, African-American non-Hispanic	104	12
Hispanic	120	16
Other non-Hispanic	79	8
Northeast	203	18
Midwest	247	21
South	386	37
West	278	24

