

NATIONAL SURVEY OF PUBLIC OPINION ON GLOBAL WARMING

STANFORD UNIVERSITY

RESOURCES FOR THE FUTURE

RECONMR

Interviewing conducted by ReconMR

Survey designed by

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with

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Interview dates: May 28- August 16, 2020

Interviews: 999 adults nationwide

Margin of error: +/- 4.0 percentage points at the 95% confidence level for full sample results

Notes:

All results show percentages among all respondents unless otherwise labeled.

All results shown are percentages unless otherwise labeled.

The sum might not add to exactly 100 due to rounding.

Some "0"s are numbers less than .5 rounded down

DK/RF is the sum of the percent of respondents who said "don't know" and the percent of respondents who declined to answer a question.

"(Vol.)" means that interviewers were instructed to record a particular answer if a respondent provided it, despite that answer not being offered explicitly as a response option by the question.

Q1. How much do you trust the things that scientists say about the environment - completely, a lot, a moderate amount, a little, or not at all?

Q1	Completely	A lot	A moderate amount	A little	Not at all	DK/RF	Total	N
Mar-2006	5	27	41	22	5	1	100	1002
Apr-2007	5	27	43	19	5	1	100	1002
Jul-2008	6	24	39	23	7	1	100	1000
Nov-2009	8	24	38	21	9	1	100	1005
Jun-2010	5	26	40	22	7	0	100	1000
Nov-2010	7	23	41	22	7	0	100	1001
Jun-2012	4	22	38	28	7	0	100	804
Dec-2013	8	22	34	24	12	0	100	801
Jan-2015	11	27	32	20	8	1	100	1006
May-2018	12	24	34	20	8	1	100	1000
Aug-2020	18	28	28	17	7	1	100	999

Q4a¹. As far as you know, would you say that weather patterns around the world have been more stable in the last three years than before that, more unstable, or about the same?

Q4b. As far as you know, would you say that weather patterns around the world have been more unstable in the last three years than before that, more stable, or about the same?

Q4a/Q4b	More stable	More unstable	About the Same	DK/RF	Total	N
Mar-2006	3	70	26	1	100	1002
Nov-2009	5	54	38	3	100	1005
Jun-2010	5	62	32	2	100	1000
Nov-2010	3	63	30	4	100	1001
Jun-2012	3	60	36	1	100	804
Dec-2013	5	62	32	0	100	801
Jan-2015	4	60	34	1	100	1006
May-2018	4	61	33	2	100	1000
Aug-2020	3	63	32	2	100	999

Q5a². As far as you know, would you say that average temperatures around the world have been higher in the last three years than before that, lower, or about the same?

Q5b. As far as you know, would you say that average temperatures around the world have been lower in the last three years than before that, higher, or about the same?

¹ Half of the sample was asked Q4A, and the other half of the sample was asked Q4B.

² Half of the sample was asked Q5A, and the other half of the sample was asked Q5B.

Q5a/b	Higher	Lower	About the Same	DK/RF	Total	N
Mar-2006	56	8	33	3	100	1002
Apr-2007	56	9	28	7	100	1002
Jul-2008	58	8	31	3	100	1000
Nov-2009	43	11	40	5	100	1005
Jun-2010	44	9	41	6	100	1000
Nov-2010	46	9	38	7	100	1001
Jun-2012	58	9	30	3	100	804
Dec-2013	48	15	36	1	100	801
Jan-2015	49	17	31	3	100	1006
May-2018	54	10	33	4	100	1000
Aug-2020	64	4	29	3	100	999

[Nov-2010, 2020] Q6a³. As far as you know, would you say that weather patterns in the county where you live have been more stable in the last three years than before that, more unstable, or about the same?

[Nov-2010, 2020] Q6b. As far as you know, would you say that weather patterns in the county where you live have been more unstable in the last three years than before that, more stable, or about the same?

[2009, Jun-2010] Q6a. Would you say that weather patterns in the county where you live have been more stable in the last three years than before that, more unstable, or about the same?

Q6a/Q6b	More stable	More unstable	About the Same	DK/RF	Total	N
Nov-2009	8	39	51	2	100	1005
Jun-2010	4	41	54	2	100	1000
Nov-2010	6	39	52	3	100	1001
May-2018	6	48	45	1	100	1000

³ Half of the sample was asked Q6A, and the other half of the sample was asked Q6B.

[2013-2018] Q12. What is your personal opinion? Do you think that the world's temperature probably has been going up over the past 100 years, or do you think this probably has not been happening?

[2012] Q12. What is your personal opinion? Do you think that the world's temperature probably has been going up [HALF SAMPLE, slowly]⁴ over the past 100 years, or do you think this probably has not been happening?

[1997-8, 2006-2011]. Q12. You may have heard about the idea that the world's temperature may have been going up slowly over the past 100 years. What is your personal opinion on this - do you think this has probably been happening, or do you think it probably has not been happening?

Q12/Q12A	Has been happening	Has not been happening	DK/RF	Total	N
Oct-1997	77	20	3	100	688
Feb-1998	79	19	2	100	725
Mar-2006	85	13	2	100	1002
Apr-2007	84	13	3	100	1002
Jul-2008	80	18	2	100	1000
Nov-2009	75	22	3	100	1005
Jun-2010	74	24	2	100	1000
Nov-2010	75	23	2	100	1001
Sep-2011	83	15	3	100	1134
Jun-2012	73	25	2	100	804
Dec-2013	73	26	1	100	801
6/8/2014	73	24	3	100	1023
Jan-2015	69	25	6	100	1006
May-2018	74	22	4	100	1000
Aug-2020	81	16	3	100	999

⁴ Half the sample was asked the question with the word "slowly" and the other half was asked the question without the word "slowly".

[1997-8, 2006-2011, 2013-2020] Q13. How sure are you that the world's temperature has [IF Q12 = 2 "PROBABLY HAS NOT BEEN HAPPENING", not] been going up over the past 100 years - extremely sure, very sure, somewhat sure, or not sure at all?

[2012] Q13. How sure are you that the world's temperature has [IF Q12 = 2 "PROBABLY HAS NOT BEEN HAPPENING", not] been going up [HALF SAMPLE, slowly]⁵ over the past 100 years - extremely sure, very sure, somewhat sure, or not sure at all?

Q13A/B	Extremely sure	Very sure	Somewhat sure	Not sure at all	DK/RF	Total	N
Oct-1997	14	29	40	17	1	100	672
Feb-1998	15	26	38	20	1	100	705
Mar-2006	17	26	43	13	0	100	985
Apr-2007	16	31	41	11	1	100	977
Jul-2008	20	29	37	13	0	100	975
Nov-2009	20	26	38	17	0	100	981
Jun-2010	18	27	40	15	0	100	976
Nov-2010	16	29	43	12	1	100	971
Sep-2011	24	29	34	12	1	100	1108
Jun-2012	20	29	40	11	1	100	784
Dec-2013	18	26	44	11	0	100	792
Jan-2015	18	33	35	12	1	100	960
May-2018	26	28	36	10	0	100	1000
Aug-2020	31	29	30	10	1	100	964

Q13A "Has been happening"	Extremely sure	Very sure	Somewhat sure	Not sure at all	DK/RF	Total	N
Oct-1997	14	31	41	14	0	100	526
Feb-1998	16	28	39	16	1	100	571
Mar-2006	19	26	44	11	0	100	849
Apr-2007	17	32	40	10	1	100	837
Jul-2008	20	31	37	10	0	100	796
Nov-2009	19	25	41	16	0	100	750
Jun-2010	20	27	41	13	0	100	729
Nov-2010	18	30	42	10	0	100	764
Sep-2011	25	28	35	11	1	100	927
Jun-2012	22	31	39	8	1	100	591
Dec-2013	20	28	45	6	0	100	588
Jan-2015	22	36	33	8	1	100	705
May-2018	29	31	33	7	1	100	735
Aug-2020	34	29	29	7	0	100	790

⁵ Half the sample was asked the question with the word "slowly" and the other half was asked the question without the word "slowly".

Q13B "Has not been happening"	Extremely sure	Very sure	Somewhat sure	Not sure at all	DK/RF	Total	N
Oct-1997	14	21	36	29	0	100	146
Feb-1998	12	15	36	36	1	100	134
Mar-2006	10	24	38	28	0	100	136
Apr-2007	10	23	48	19	1	100	140
Jul-2008	16	20	38	26	0	100	179
Nov-2009	24	28	27	21	0	100	231
Jun-2010	12	27	40	21	0	100	253
Nov-2010	9	26	45	20	0	100	207
Sep-2011	21	32	28	20	0	100	181
Jun-2012	15	21	43	21	1	100	193
Dec-2013	11	20	44	24	1	100	204
Jan-2015	10	25	41	21	2	100	255
May-2018	16	20	46	18	0	100	231
Aug-2020	14	30	35	20	1	100	174

- [2014-2020] Q14A. If the world's temperature did increase over the past 100 years, do you think this increase was caused mostly by things people did, mostly by natural causes, or about equally by things people did and by natural causes?
- [2014-2020] Q14B. Assuming it's happening, do you think a rise in the world's temperature would have been caused mostly by things people do, mostly by natural causes, or about equally by things people do and by natural causes?
- [2012-2013] Q14A1. Do you think that the increase in the world's temperature over the past 100 years was caused mostly by things people did, mostly by natural causes, or about equally by things people did and by natural causes?
- [2012-2013] Q14B1. If the world's temperature did increase over the past 100 years, do you think this increase was caused mostly by things people did, mostly by natural causes, or about equally by things people did and by natural causes?
- [2006-2011]. Do you think a rise in the world's temperature is being caused mostly by things people do, mostly by natural causes, or about equally by things people do and by natural causes?
- [2006-2011]. Assuming it's happening, do you think a rise in the world's temperature would be caused mostly by things people do, mostly by natural causes, or about equally by things people do and by natural causes?
- [2006-2011]. Would you lean toward saying it would be caused mostly by things people do or mostly by natural causes?
- [1997-8] Now I'd like to ask you what you think might cause global warming. [I realized that you don't expect global warming to happen, but I would like to ask you what you think might cause it. Some people have told us that global warming would be brought about mostly by things people do. Others have said that global warming would be brought about mostly by what nature does itself. Still others think that people and nature would play about equal roles in causing global warming. Which of these views is closest to yours?

Q14A/B	Things people did	Natural Causes	About equally	DK/RF	Total	N
Oct-1997	40	18	41	2	100	688
Feb-1998	42	16	40	2	100	725
Mar-2006	31	19	49	1	100	1002
Apr-2007	41	17	42	1	100	1001
Jul-2008	34	21	44	1	100	1000
Nov-2009	30	27	40	3	100	901
Jun-2010	30	25	45	0	100	1000
Nov-2010	31	24	45	1	100	1001
Sep-2011	27	27	45	2	100	1134
Jun-2012	30	22	47	1	100	804
Dec-2013	32	20	48	0	100	801
6/8/2014	33	20	45	1	100	1023
Jan-2015	40	18	41	1	100	1006
May-2018	41	19	40	1	100	1000
Aug-2020	47	17	35	1	100	999

[2013-2020] Q14C. Do you think the increase in the world's temperature over the past 100 years is good, bad, or neither good nor bad?

[2013-2020] Q14D. If the world's temperature did increase over the past 100 years, do you think that that increase would be good, bad, or neither good nor bad?

[2012] Q14C. Do you think the [HALF SAMPLE, slow]⁶ increase in the world's temperature over the past 100 years is good, bad, or neither good nor bad?

[2012] Q14D. If the world's temperature did increase [HALF SAMPLE: slowly]⁷ over the past 100 years, do you think that that increase would be good, bad, or neither good nor bad?

[2012-2020] Q14D1e. Do you lean toward thinking it [IF Q14C = 3, is/IF Q14D= 3, would be] good, lean toward thinking it [IF Q14C = 3, is/IF Q14D= 3, would be] bad, or don't you lean either way?

[2012-2020] Q014D1. Would you say it [IF Q14C = 1 "GOOD", is/IF Q14D = 1 "GOOD", would be] very good or somewhat good?

[2012-2020] Q014D2. Would you say it [IF Q14C = 2 "BAD", is/IF Q14D = 2 "BAD", would be] very bad or somewhat bad?

Q14C/Q14D	Bad	Neither good nor bad	Good	DK/RF	Total	N
Jun-2012	51	43	4	1	100	804
Dec-2013	52	42	5	1	100	801
Jan-2015	57	38	3	2	100	1006
May-2018	58	37	4	1	100	1000
Aug-2020	62	34	2	2	100	999

Q14C/Q14D & Q14D1E	Bad/Lean toward		Neither good nor bad	Good/Lean toward		DK/RF	Total	N
	Bad	Good		Good	DK/RF			
Dec-2013	60	30	8	1	100	801		
Jan-2015	66	26	6	2	100	1006		
May-2018	63	30	6	1	100	1000		
Aug-2020	67	27	3	2	100	999		

Q14C/Q14D & Q14D1E & Q14D1 & Q14D2	Very Bad	Somewhat bad	Lean toward bad	Neither good nor bad	Lean toward good	Somewh at Good	Very Good	DK/RF	Total	N
Jan-2015	29	27	9	27	2	3	1	2	100	1006
May-2018	33	24	6	29	2	3	1	2	100	1000
Aug-2020	39	22	0	33	1	2	1	2	100	999

⁶ Half the sample was asked the question with the word "slow" and the other half was asked the question without the word "slow".

⁷ Half the sample was asked the question with the word "slowly" and the other half was asked the question without the word "slowly".

[1997-8, 2010, 2011, 2013-2020] Q14F. If nothing is done to prevent it, do you think the world's temperature probably will go up over the next 100 years, or do you think the world's temperature probably will not go up over the next 100 years?

[2012] Q14F. If nothing is done to prevent it, do you think the world's temperature probably will go up over the next 100 years, or do you think the world's temperature probably will not go up [HALF SAMPLE, slowly]⁸ over the next 100 years?

Q14F	Will go up	Will not go up	DK/RF	Total	N
Oct-97	74	22	4	100	688
Feb-98	75	19	6	100	725
Nov-2010	75	20	5	100	1001
Sep-11	72	24	4	100	1134
Jun-2012	72	24	4	100	804
Dec-2013	76	22	3	100	801
Jan-2015	73	22	4	100	1006
May-2018	73	23	4	100	1000
Aug-2020	76	19	5	100	999

[1997-8, 2010, 2011, 2013-2020] Q14F1. How sure are you that, if nothing is done to stop it, the world's temperature probably (Q14F = 1 will/Q14F = 2 will not) go up over the next 100 years, extremely sure, very sure, somewhat sure, or not sure at all?

[2012] Q14F1. How sure are you that, if nothing is done to stop it, the world's temperature probably (Q14F = 1 will/Q14F = 2 will not) go up [HALF SAMPLE, slowly]⁹ over the next 100 years, extremely sure, very sure, somewhat sure, or not sure at all?

Q14F1	Extremely sure	Very sure	Somewhat sure	Not sure at all	DK/RF	Total	N
Oct-1997	13	29	40	17	0	100	663
Feb-1998	15	27	40	18	0	100	684
Nov-2010	23	29	37	11	0	100	940
Jun-2012	25	27	36	11	0	100	762
Dec-2013	23	28	37	13	0	100	779
Jan-2015	20	33	36	11	0	100	953
May-2018	27	31	28	13	0	100	955
Aug-2020	33	29	26	10	1	100	945

⁸ Half the sample was asked the question with the word "slow" and the other half was asked the question without the word "slow".

⁹ Half the sample was asked the question with the word "slowly" and the other half was asked the question without the word "slowly".

Q14F1 "PROBABLY WILL GO UP"	Extremely sure	Very sure	Somewhat sure	Not sure at all	DK/RF	Total	N
Oct-1997	15	30	39	16	0	100	505
Feb-1998	18	30	40	12	0	100	537
Nov-2010	25	29	37	9	0	100	723
Jun-2012	28	28	35	9	0	100	571
Dec-2013	24	30	35	11	0	100	590
Jan-2015	23	36	31	9	0	100	727
May-2018	31	35	25	9	1	100	720
Aug-2020	38	30	23	9	1	100	732

Q14F1 "PROBABLY WILL NOT GO UP"	Extremely sure	Very sure	Somewhat sure	Not sure at all	DK/RF	Total	N
Oct-1997	8	28	42	22	0	100	158
Feb-1998	6	13	41	39	1	100	147
Nov-2010	15	29	34	22	1	100	217
Jun-2012	19	23	28	19	1	100	191
Dec-2013	17	20	41	21	0	100	189
Jan-2015	10	23	50	16	1	100	226
May-2018	14	21	41	23	0	100	235
Aug-2020	14	27	40	17	1	100	213

[2012-2020] Q14E. If the world's average temperature is about five degrees Fahrenheit higher 75 years from now than it is now, overall, would you say that would be good, bad, or neither good nor bad?

[2012-2020] Q14Ez. Do you lean toward thinking it would be good, lean toward thinking it would be bad, or don't you lean either way?

[1997-8, 2006-2010]. Scientists use the term "global warming" to refer to the idea that the world's average temperature may be about five degrees Fahrenheit higher in 75 years than it is now. Overall, would you say that if the world's average temperature is five degrees Fahrenheit higher in 75 years than it is now, would that be good, bad, or neither good nor bad? For "neither good nor bad": Do you lean toward thinking it would be good, lean toward thinking it would be bad, or don't you lean either way?

Q14E	Bad	Neither good nor bad	Good	DK/RF	Total	N
Oct-1997	56	31	11	2	100	688
Feb-1998	51	36	9	4	100	725
Apr-2007	64	27	6	3	100	1002
Jul-2008	61	31	6	2	100	1000
Nov-2009	54	37	7	2	100	1005
Jun-2010	59	36	4	1	100	1000
Nov-2010	56	36	5	3	100	1001
Jun-2012	53	38	8	2	100	804
Dec-2013	57	37	6	1	100	801
Jan-2015	55	36	8	1	100	1006
May-2018	62	30	6	1	100	1000
Aug-2020	64	29	5	3	100	999

Q14E	Bad/lean toward bad	Neither good nor bad	Good/lean toward good	DK/RF	Total	N
Oct-1997	61	22	15	2	100	688
Feb-1998	58	27	12	4	100	725
Apr-2007	68	21	8	3	100	1002
Jul-2008	70	21	6	2	100	1000
Nov-2009	59	30	8	3	100	1005
Jun-2010	64	29	5	2	100	1000
Nov-2010	63	25	9	3	100	1001
Jun-2012	60	29	9	2	100	804
Dec-2013	66	25	8	1	100	801
Jan-2015	62	27	9	2	100	1006
May-2018	67	24	7	1	100	1000
Aug-2020	70	22	6	3	100	999

[2012-2020] Q15. If nothing is done to reduce global warming in the future, how serious of a problem do you think it will be for THE UNITED STATES – very serious, somewhat serious, not so serious, or not serious at all?

[2006-2012]. Q15. [Assuming it's happening,] If nothing is done to reduce global warming in the future, how serious of a problem do you think it will be for THE UNITED STATES – very serious, somewhat serious, not so serious, or not serious at all?

Q15	Very serious	Somewhat serious	Not so serious	Not serious at all	DK/RF	Total	N
Mar-2006	49	34	10	6	2	100	1002
Nov-2009	42	31	13	13	1	100	1005
Jun-2010	46	32	12	10	1	100	1000
Nov-2010	42	33	14	10	1	100	1001
Jun-2012	40	38	12	8	2	100	804
Dec-2013	52	29	9	10	1	100	801
Jan-2015	44	34	10	10	1	100	1006
May-2018	51	27	10	10	1	100	1000
Aug-2020	55	24	9	10	1	100	999

[2012-2020] Q16. If nothing is done to reduce global warming in the future, how serious of a problem do you think it will be for THE WORLD – very serious, somewhat serious, not so serious, or not serious at all?

[2006-2012]. Q16. [Assuming it's happening,] If nothing is done to reduce global warming in the future, how serious of a problem do you think it will be for THE WORLD – very serious, somewhat serious, not so serious, or not serious at all?

Q16	Very serious	Somewhat serious	Not so serious	Not serious at all	DK/RF	Total	N
Mar-2006	57	28	8	5	2	100	1002
Nov-2009	51	25	11	13	0	100	1005
Jun-2010	55	26	11	8	1	100	1000
Nov-2010	51	27	12	9	1	100	1001
Jun-2012	50	31	10	7	1	100	804
Dec-2013	59	24	8	9	1	100	801
Jan-2015	57	26	7	9	1	100	1006
May-2018	59	22	9	9	0	100	1000
Aug-2020	62	20	8	10	1	100	999

Q19A. How important is the issue of global warming to you personally – extremely important, very important, somewhat important, not too important, or not at all important?

Q19A	Extremely important	Very important	Somewhat important	Not too important	Not at all important	DK/RF	Total	N
Oct-1997	9	22	44	19	6	0	100	688
Feb-1998	11	21	48	14	6	0	100	725
Mar-2006	17	32	32	10	8	0	100	1002
Apr-2007	18	34	30	8	9	0	100	1001
Jul-2008	16	30	31	13	9	0	100	1000
Nov-2009	16	25	30	13	16	1	100	1005
Jun-2010	14	32	30	12	12	0	100	1000
Nov-2010	16	29	30	16	9	0	100	1001
Sept-2011	15	27	28	15	14	1	100	1134
Jun-2012	10	28	39	13	10	0	100	804
Dec-2013	18	27	29	12	14	0	100	801
Jan-2015	13	29	27	16	15	0	100	1006
May-2018	20	28	28	12	12	0	100	1000
Aug-2020	25	29	23	10	12	0	100	999

Q19B. How strong are your opinions on the issue of global warming – extremely strong, very strong, somewhat strong, not too strong, or not strong at all?

Q19B	Extremely strong	Very strong	Somewhat strong	Not too strong	Not at all strong	DK/RF	Total	N
Jun-2010	13	28	34	15	9	1	100	1000
Nov-2010	14	30	35	14	7	0	100	1001
Jun-2012	11	28	36	18	7	1	100	804
Dec-2013	17	29	32	13	9	0	100	801
Jan-2015	15	30	30	15	10	0	100	1006
May-2018	22	32	27	12	8	0	100	1000
Aug-2020	25	30	24	12	9	0	100	999

Q20. How much do you feel you know about global warming - a lot, a moderate amount, a little, or nothing?

Q20	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Oct-1997	7	35	49	9	0	100	688
Feb-1998	6	38	47	9	0	100	725
Mar-2006	10	47	36	6	0	100	1002
Apr-2007	11	51	33	4	0	100	1002
Jul-2008	13	49	33	4	0	100	1000
Nov-2009	17	49	29	5	0	100	1005
Jun-2010	15	53	27	5	0	100	1000
Nov-2010	13	53	29	4	0	100	1001
Jun-2012	11	44	37	9	0	100	804
Dec-2013	19	50	27	4	0	100	801
Jan-2015	15	51	30	4	0	100	1006
May-2018	19	52	24	4	0	100	1000
Aug-2020	21	55	20	4	0	100	999

[2012-2020] Q25. How much do you think the U.S. government should do about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

Q25	A great deal	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Jun-2012	32	23	26	8	10	1	100	804
Dec-2013	33	22	24	11	10	0	100	801
Jun-2014	33	19	25	10	11	2	100	1023
Jan-2015	33	20	20	13	12	1	100	469
May-2018	36	25	19	9	10	0	100	1000
Aug-2020	45	18	18	8	9	1	100	999

[2015] Q25A. How much do you think the U.S. government should do about global warming - a great deal, quite a bit, some, a little, or nothing?

[2009-2010] Q25. How much do you think the U.S. government should do about global warming? A great deal, quite a bit, some, a little, or nothing?

[1997-8] Now, I'd like to ask you who you feel is responsible for doing something to deal with global warming. There are a number of possible groups of people who could do something, including the U.S. government, governments in other countries around the world, businesses, and average people. I'm going to ask you questions about how much each of these groups should do about global warming. First, how much do you think the U.S. government should do about global warming? A great deal, quite a bit, some, a little, or nothing?

Q25A	A great deal	Quite a bit	Some	A little	Nothing	DK/RF	Not asked	Total	N
Oct-1997	41	18	18	4	1	1	17	100	688
Feb-1998	38	19	20	4	3	1	16	100	725
Nov-2009	31	21	23	10	15	0	0	100	1005
Jun-2010	34	22	22	11	11	0	0	100	1000
Nov-2010	41	18	21	11	9	0	0	100	1001
Jan-2015	35	22	18	11	14	0	0	100	537

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question.

[2012-2020] Q29. How much do you think the U.S. government is doing now to deal with global warming - a great deal, a lot, a moderate amount, a little, or nothing?

Q29	A great deal	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Jun-2012	7	11	44	29	8	1	100	804
Dec-2013	4	6	31	45	12	1	100	801
Jan-2015	5	10	30	39	12	4	100	469
May-2018	3	6	29	42	18	2	100	1000
Aug-2020	5	7	29	40	18	1	100	999

[1997-8, 2009-2010, 2015] Q29A. How much do you think the U.S. government is doing now to deal with global warming - a great deal, quite a bit, some, a little, or nothing?

Q29A	A great deal	Quite a bit	Some	A little	Nothing	DK/RF	Total	N
Oct-1997	4	7	45	31	10	3	100	688
Feb-1998	3	9	44	33	8	3	100	725
Nov-2009	9	12	41	27	9	2	100	1005
Jun-2010	7	13	45	25	9	1	100	1000
Nov-2010	6	10	48	26	8	2	100	1001
Jan-2015	9	12	37	28	12	3	100	537

Q25/Q29	Government should do more	Government should do the same	Government should do less	DK/RF	Total	N
Oct-1997	67	11	3	19	100	688
Feb-1998	62	13	6	18	100	725
Mar-2006	68	25	5	2	100	1002
Apr-2007	69	21	7	3	100	1002
Jul-2008	61	27	10	3	100	1000
Nov-2009	56	19	22	2	100	1005
Jun-2010	59	22	17	2	100	1000
Nov-2010	62	18	18	2	100	1001
Jun-2012	61	20	17	2	100	804
Dec-2013	66	20	12	2	100	801
Jan-2015	61	15	19	4	100	1006
May-2018	68	16	14	2	100	1000
Aug-2020	68	16	15	2	100	999

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question. In 1997 and 1998, the percent of DK/RF includes the percent of respondents who were not asked the question, the percent of respondents who said "don't know", and the percent of respondent who declined to answer the question.

[2018-2020] How much do you think governments in other countries should do about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

[1997-8, 2009, Jun-2010, Nov-2010] Q26. How much do you think governments in other countries should do about global warming - a great deal, quite a bit, some, a little, or nothing?

Q26	A great deal	Quite a bit/a lot	Some/A moderate amount	A little	Nothing	DK/RF	Not asked	Total	N
Oct-1997	38	20	19	4	2	0	17	100	688
Feb-1998	37	21	18	4	3	1	16	100	725
Nov-2009	35	21	21	9	13	1	0	100	1005
Jun-2010	36	23	22	10	9	0	0	100	1000
Nov-2010	43	19	19	10	8	1	0	100	1001
May-2018	33	28	21	8	9	1	0	100	1000
Aug-2020	44	23	18	7	8	2	0	100	999

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question.

[2018-2020] How much do you think governments in other countries are doing about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

[1997-8, 2009, Jun-2010, Nov-2010] Q30. How much do you think governments in other countries are doing about global warming - a great deal, quite a bit, some, a little, or nothing?

Q30	A great deal	Quite a bit/a lot	Some/A moderate amount	A little	Nothing	DK/RF	Not asked	Total	N
Oct-1997	2	2	23	46	24	4	0	100	688
Feb-1998	0	2	24	44	23	5	0	100	725
Nov-2009	4	5	36	36	15	4	0	100	1005
Jun-2010	4	8	39	33	15	1	0	100	1000
Nov-2010	4	6	38	36	12	4	0	100	1001
May-2018	4	8	26	40	15	6	0	100	1000
Aug-2020	2	6	38	39	12	4	0	100	999

Q27/Q31	Governments in other countries should do more	Governments in other countries should do the same	Governments in other countries should do less	DK/RF	Not Asked	Total	N
Oct-1997	72	7	1	3	17	100	688
Feb19-98	69	10	2	4	16	100	725
Nov-2009	62	20	13	5	5	100	1005
Jun-2010	70	18	11	1	1	100	1000
Nov-2010	69	16	10	5	5	100	1001
May-2018	68	17	9	6	0	100	1000
Aug-2020	71	15	9	5	0	100	999

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question. In 1997 and 1998, the percent of DK/RF includes the percent of respondents who were not asked the question, the percent of respondents who said "don't know", and the percent of respondent who declined to answer the question.

[2012-2020] Q27. How much do you think U.S. businesses should do about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

Q27	A great deal	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Jun-2012	39	22	23	8	8	0	100	804
Dec-2013	40	23	20	10	7	0	100	801
Jan-2015	38	23	18	11	10	1	100	469
May-2018	32	27	22	8	9	1	100	928
Aug-2020	42	23	19	8	8	1	100	999

Note 1: In May-2018, a random sample of 72 respondents was not asked this question.

[2015] Q27A. How much do you think U.S. businesses should do about global warming - a great deal, quite a bit, some, a little, or nothing?

[1997-8, 2009-2010] Q27. How much do you think U.S. businesses should do about global warming? A great deal, quite a bit, some, a little, or nothing?

Q27A	A great deal	Quite a bit	Some	A little	Nothing	DK/RF	Not asked	Total	N
Oct-1997	38	21	19	4	1	1	17	100	688
Feb-1998	36	23	17	4	3	1	16	100	725
Nov-2009	35	16	25	11	13	1	0	100	1005
Jun-2010	35	22	22	11	9	0	0	100	1000
Nov-2010	38	20	22	10	8	1	0	100	1001
Jan-2015	39	26	16	8	9	1	0	100	537

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question.

[2012-2020] Q31A. How much do you think U.S. businesses are doing about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

31A	A great deal	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Jun-2012	3	10	34	40	13	1	100	804
Dec-2013	3	4	28	51	13	1	100	801
Jan-2015	3	10	31	39	15	2	100	537
May-2018	4	6	30	44	14	3	100	928
Aug-2020	2	5	37	40	13	2	100	999

Note 1: In May-2018, a random sample of 72 respondents was not asked this question.

[1997-8, 2009-2010, 2015] Q31. How much do you think U.S. businesses are doing about global warming? A great deal, quite a bit, some, a little, or nothing?

Q31	A great deal	Quite a bit	Some	A little	Nothing	DK/RF	Total	N
Oct-1997	3	4	34	43	15	2	100	688
Feb-1998	2	6	33	42	15	2	100	725
Nov-2009	6	7	38	34	13	2	100	1005
Jun-2010	5	11	35	35	13	0	100	1000
Nov-2010	4	7	39	35	12	3	100	1001
Jan-2015	2	5	24	48	18	2	100	469

Q27/Q31	U.S. businesses should do more	U.S. businesses should do the same	U.S. businesses should do less	DK/RF	Total	N
Oct-1997	70	9	2	19	100	688
Feb19-98	68	12	3	17	100	725
Nov-2009	58	24	16	2	100	1005
Jun-2010	64	21	14	1	100	1000
Nov-2010	63	18	14	4	100	1001
Jun-2012	71	16	12	1	100	804
Dec-2013	72	19	9	1	100	801
Jan-2015	71	14	12	3	100	1006
May-2018	67	17	12	4	100	928
Aug-2020	71	15	12	2	100	999

Note 1: In 1997 and 1998, respondents who answered “probably has not been happening” to Q12 and answered “will not go up” to Q14F were not asked this question. In 1997 and 1998, the percent of DK/RF includes the percent of respondents who were not asked the question, the percent of respondents who said “don’t know”, and the percent of respondent who declined to answer the question.

[2013-2020] Q28. How much do you think average people should do about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

Q28	A great deal	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Dec-2013	32	26	22	10	10	0	100	801
Jan-2015	28	20	29	11	12	0	100	469
May-2018	27	24	27	11	10	1	100	1000
Aug-2020	30	24	28	9	8	0	100	999

[2015] Q28A. How much do you think average people should do about global warming - a great deal, quite a bit, some, a little, or nothing?

[1997-8, 2009-2010] How much do you think average people should do about global warming? A great deal, quite a bit, some, a little, or nothing?

Q28A	A great deal	Quite a bit	Some	A little	Nothing	DK/RF	Not asked	Total	N
Oct-1997	24	19	28	8	3	0	17	100	688
Feb-1998	24	19	28	8	3	2	16	100	725
Nov-2009	29	20	26	10	15	1	0	100	1005
Jun-2010	29	21	29	9	11	1	0	100	1000
Nov-2010	34	21	24	12	8	1	0	100	1001
Dec-2013	32	26	22	10	10	0	0	100	801
Jan-2015	29	25	23	10	12	0	0	100	537

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question.

[2013-2020] Q32. How much do you think average people are doing now to deal with global warming? A great deal, a lot, a moderate amount, a little, or nothing?

32A	A great deal	A lot	A moderate amount	A little	Nothing	DK/RF	Total	N
Dec-2013	2	3	23	53	19	0	100	801
Jan-2015	3	6	30	41	19	1	100	537
May-2018	2	4	25	50	17	1	100	1000
Aug-2020	2	4	31	48	14	1	100	999

[1997-8, 2009-2010, 2015] Q32. How much do you think average people are doing now to deal with global warming? A great deal, quite a bit, some, a little, or nothing?

Q32	A great deal	Quite a bit	Some	A little	Nothing	DK/RF	Total	N
Oct-1997	1	4	24	43	28	0	100	688
Feb-1998	1	4	21	46	27	2	100	725
Nov-2009	4	6	33	39	17	1	100	1005
Jun-2010	4	8	33	42	13	0	100	1000
Nov-2010	3	7	35	41	12	1	100	1001
Jan-2015	2	2	18	52	26	0	100	469

[2013-2020] Q28. How much do you think average people should do about global warming - a great deal, a lot, a moderate amount, a little, or nothing?

[2015] Q28A. How much do you think average people should do about global warming - a great deal, quite a bit, some, a little, or nothing?

[1997-8, 2009-2010] How much do you think average people should do about global warming? A great deal, quite a bit, some, a little, or nothing?

[1997-8, 2009-2010, 2015] Q32. How much do you think average people are doing now to deal with global warming? A great deal, quite a bit, some, a little, or nothing?

[2013-2020] Q32. How much do you think average people are doing now to deal with global warming? A great deal, a lot, a moderate amount, a little, or nothing?

Q28/Q32	Average people should do more	Average people should do the same	Average people should do less	DK/RF	Total	N
Oct-1997	67	12	3	18	100	688
Feb-1998	65	15	2	18	100	725
Nov-2009	62	24	13	1	100	1005
Jun-2010	63	25	11	1	100	1000
Nov-2010	65	23	11	2	100	1001
Dec-2013	74	17	8	0	100	801
Jan-2015	67	23	9	1	100	1006
May-2018	69	20	9	2	100	1000
Aug-2020	72	19	9	1	100	999

Note 1: In 1997 and 1998, respondents who answered "probably has not been happening" to Q12 and answered "will not go up" to Q14F were not asked this question. In 1997 and 1998, the percent of DK/RF includes the percent of respondents who were not asked the question, the percent of respondents who said "don't know", and the percent of respondent who declined to answer the question.

[Some questions are held for future releases]

Q82. Do you think you have seen any effects of global warming happening already, either in person or through television, radio, newspapers, magazines, or the Internet, or you think you haven't seen any effects of global warming in any of these ways?

Q82	Have seen	Have not seen	DK/RF	Total	N
Dec-2013	71	28	1	100	801
May-2018	68	30	1	100	1006
Aug-2020	75	23	1	100	999

[2012-2020] Q22. If you were to guess, about what percent of the scientists who study the world's climate believe that the world's temperature has been going up over the last 100 years? You can answer with a number between zero percent and one hundred percent.

[NOV 2010]. If you were to guess, about what percent of the scientists who study the world's climate think global warming is happening? You can answer with any number between zero percent and one hundred percent.

[NOV 2010]. If you were to guess, about what percent of the scientists who study the world's climate believe that the world's temperature has been going up slowly over the last 100 years? You can answer with any number between zero percent and one hundred percent.

[Nov 2010, 2012, 2013, 2015, 2018] Q22x. Did you say 50 percent because you think about half of those scientists believe that, or did you say 50 percent because you're not sure how many scientists believe that?

[2012, 2013, 2018] Q22y. If you were to guess, how many of the scientists who study the world's temperature believe that the world's temperature has been going up over the last 100 years? All, most, about half, a few, or none?

Q22/x/y	0-9%	10-19%	20-29%	30-39%	40-49%	50%	51-59%	60-69%	70-79%	80-89%	90-99%	100%	DK/RF	Total	N
Nov-2010	2	2	5	4	6	14	1	15	16	12	10	3	9	100	1001
Jun-2012	5	5	6	5	5	13	1	13	18	11	12	7	0	100	804
Dec-2013	4	3	6	4	4	14	1	9	20	12	15	8	1	100	801
Jan-2015	3	2	5	3	5	7	1	10	12	14	20	8	10	100	1006
May-2018	5	2	4	2	3	10	1	10	15	15	20	12	1	100	1000
Aug-2020	5	1	4	3	3	4	4	7	13	14	26	11	9	100	999

Q22/x/y	Mean	N
Nov-2010	62	898
Jun-2012	61	799
Dec-2013	65	793
Jan-2015	69	907
May-2018	70	992
Aug-2020	72	911

Note: Respondents who answered 50% to Q22 were asked Q22x, and respondents who answered "about half of those scientists believe that" were coded 50%, and respondents who answered "not sure how many scientists believe that" were asked Q22y. Respondents who said "don't know" or refused to answer Q22 were asked Q22y. Respondents who said "all", "most", "about half", "a few", or "none" in answer to Q22y were coded 100%, 75%, 50%, 25%, and 0% for Q22, and respondents who said "don't know" or refused to answer Q22y were coded "don't know" or "refused" for Q22.

Q17B1. [IF Q12 = 1 "PROBABLY HAS BEEN HAPPENING", If/IF Q12 = DK OR REF OR 2 "PROBABLY HAS NOT BEEN HAPPENING", Assuming it's happening, if] nothing is done to reduce global warming in the future, how much do you think it will help you personally—a great deal, a lot, a moderate amount, a little or not at all?

Q17B1	A great deal	A lot	A moderate amount	A little	Not at all	DK/RF	Total	N
Jan-2015	3	3	9	12	72	1	100	1006
Aug-2020	9	5	15	14	58	0	100	999

Q18A1. [IF Q12 = 1 "PROBABLY HAS BEEN HAPPENING", If/IF Q12 = DK OR REF OR 2 "PROBABLY HAS NOT BEEN HAPPENING", Assuming it's happening, if] nothing is done to reduce global warming in the future, how much do you think it will help future generations—a great deal, a lot, a moderate amount, a little, or not at all?

Q18A1	A great deal	A lot	A moderate amount	A little	Not at all	DK/RF	Total	N
Jan-2015	5	4	9	11	69	2	100	1006
Aug-2020	16	7	12	9	55	1	100	999

Q18A2. [IF Q12 = 1 "PROBABLY HAS BEEN HAPPENING", If/IF Q12 = DK OR REF OR 2 "PROBABLY HAS NOT BEEN HAPPENING", Assuming it's happening, if] nothing is done to reduce global warming in the future, how much do you think it will hurt you personally—a great deal, a lot, a moderate amount, a little, or not at all?

Q18A2	A great deal	A lot	A moderate amount	A little	Not at all	DK/RF	Total	N
Nov-09	19	15	26	15	24	*	100	1005
Jun-10	18	17	27	17	20	1	100	1000
Nov-10	17	14	24	20	25	1	100	1001
Dec-2013	18	14	30	17	21	1	100	801
Jan-2015	18	16	20	17	28	1	100	1006
Aug-2020	22	9	22	20	27	0	100	999

Q18A. [IF Q12 = 1 "PROBABLY HAS BEEN HAPPENING", If/IF Q12 = DK OR REF OR 2 "PROBABLY HAS NOT BEEN HAPPENING", Assuming it's happening, if] nothing is done to reduce global warming in the future, how much do you think it will hurt future generations—a great deal, a lot, a moderate amount, a little, or not at all?

Q18A	A great deal	A lot	A moderate amount	A little	Not at all	DK/RF	Total	N
Nov-09	42	21	13	8	15	1	100	1005
Jun-10	43	21	16	11	9	*	100	1000
Nov-10	38	21	16	11	12	1	100	1001
Dec-2013	48	19	13	9	10	1	100	801
Jan-2015	43	16	15	11	14	1	100	1006
Aug-2020	45	17	11	12	14	0	100	999

[Some questions are held for future releases]

Appendix A: 2020 National Survey of Public Opinion on Global Warming Method

The 2020 National Survey of Public Opinion on Global Warming involved telephone interviews with a representative sample of 999 adults living in the United States. 310 respondents were interviewed on a landline telephone, and 689 were interviewed on a cell phone. Interviewing was conducted from May 28 to August 16, 2020, in English. AAPOR's Response Rate 3 was 18% for the landline frame, 6% for the cell phone frame, and 10% for the whole study sample.

Sample Design

Phone numbers used for this study were randomly generated from landline and cell phone sampling frames, with an overlapping frame design. The RDD landline sample was generated through Dynata. The Dynata RDD procedure produces an Equal Probability Selection Method (EPSEM) sample of randomly drawn telephone numbers from all working banks with one or more assigned numbers. The sample was generated shortly before the beginning of data collection to provide the most up-to-date sample possible, maximizing the number of valid telephone extensions. Additional sample was generated during the fielding period to ensure appropriate representation between census regions. The initial landline sample went through Dynata's disconnect screening process. The unlisted phone numbers are sent a 'pulse' to determine switch status. If the switch is not active, the number is flagged disconnected. If the switch is active, the system uses post-call analysis to determine if the number is disconnected (SIT, fax, fast busy etc.) or working (no answer, live answer, answering machine).

The RDD Cell Phone sample was generated by Dynata. Dynata starts with the most recent monthly Telcordia TPM (Terminating Point Master) Data file. This is Telcordia's master file of NPA-NXX and Block-ID records for the North American Number Plan. It contains at least one record per NPA-NXX. For prefixes (NPA-NXXs) where 1000-block number pooling is in effect, this file also provides information for individual 1000-blocks. This allows users to identify those 1000-blocks that have either not been assigned for service or that have been allocated to different service providers. "Mixed" or "shared" 100-blocks (NXXTYPES 50, 54, 66) are then compared to Dynata's list-assisted RDD database. 100-blocks with no listed numbers are retained in the wireless frame and 100-blocks containing listed numbers on the RDD frame are removed. The result is a frame of 100-blocks that is mutually exclusive of Dynata's list-assisted RDD frame while allowing coverage in prefixes and 1000-blocks that potentially provide both landline and wireless service.

Field Procedures

Because of the onset of the global Covid-19 Pandemic and in order to provide a safe environment for the employees to work, ReconMR shut down on-site operations in March 2020, and turned it into a virtualized call center environment. As such, the survey was conducted by interviewers working from home. Measures were taken to ensure data security and the continued adherence to data quality and data collection standards for ReconMR's work from home solution. Interviewers were set up to connect to ReconMR's data center via a secure, private VPN tunnel. This solution employs end-to-end encryption as well as multi-factor authentication. In addition, all servers remained behind a secure firewall, and all calls were initiated from on-premises devices. ReconMR work-from-home solution allowed for all agents to continue to be live-monitored for quality assurance via our Voxco audio and video monitoring systems.

Interviews were conducted using computer-assisted telephone interviewing (CATI) software. Interviewer training was conducted prior to the study pilot. CATI interviewers received an annotated questionnaire and project materials that explained the history, background, and goals of the study. The background and overview training of the study's various components was followed by a detailed CATI program training. Experienced project team supervisors and trainers spent time reviewing both questionnaires one question at a time with each interviewer. The goal was to fully explain the proper delivery of each question and the reasoning and intent behind all the sections and response option in

each questionnaire. Interviewers spent a great deal of time practicing with the CATI program and conducting mock interviews with each other and the data collection supervisors. Interviewers were carefully trained to ask for the youngest male or the youngest female currently at home when calling a landline. Interviewers were also trained at explaining the purpose of the study, how to gain respondent cooperation by explaining the inherent benefits of the research, how the project will benefit the public good and how to answer respondent's questions, as well as how to record respondents' answers accurately.

In order to maximize survey participation, the following procedures were enacted during the field period:

- Up to 5 follow-up attempts were made to contact non-responsive numbers (e.g. no answer, busy, answering machine). Exception was made to records flagged as belonging to census groups greater than 50% Hispanic. These cases received up to 7 follow-up attempts to non-responsive numbers.
- Non-responsive numbers were contacted multiple times, varying the times of day, and the days of the week that call-backs were placed.
- Interviewers stressed that the study was done for research purposes and that responses were strictly confidential and, when asked, they stated as accurately as possible the expected length of the interview. In addition, interviewers were provided with responses to possible respondent concerns raised during interviews, in order to minimize break offs.
- Respondents were offered the option of scheduling a call-back at their convenience.
- Households where the initial call resulted in respondents hanging up the phone or breaking off during the interview were called back after a 28-hour delay in an attempt to convert into a completed interview. Interviewers received special instructions on how to handle these calls.
- Respondents reached by cell phone were offered \$10 if they requested compensation for their time. No such cell phone complaints were made during fielding of either study.

Quality/Data Verification

Project supervisors validated 10% of each interviewer's completed surveys by calling back the respondent and verifying specific responses. Additionally, supervisors continually monitored live calls through ReconMR's call monitoring system in order to ensure proper interviewing procedures were maintained.

Appendix B: 2020 National Survey of Public Opinion on Global Warming Weighting

This Appendix describes the two-stage procedure used to construct weights. During the first stage, each respondent was assigned a base weight that accounted for unequal probability of selection. The second stage introduced adjustments to the base weights so that sample distributions of target variables match distributions of those same variables in the in the U.S. adult population. More details about each of these stages are provided below.

Stage 1: Constructing base weights

A base weight was constructed for each respondent to account for unequal selection probabilities. Some respondents could have been contacted by via multiple telephone numbers (mobile and/or landline), and for some telephone numbers persons other than the respondent may also have been reachable. The base weights account for these differences by assigning respondents who could have been contacted via several telephone numbers a value that is proportionally smaller that values assigned to respondents who could have been contacted via fewer numbers.

The base weights were constructed by first computing a total number of “selection opportunities” for each respondent. Each selection opportunity for a respondent is the probability of selecting the respondent via one of the telephone numbers by which she or he could have been contacted. Each selection opportunity is based on the assumption that mobile device telephone numbers are not shared with other adults while landline telephone numbers are shared with all adults in a household. This means the probability of selecting the respondent if a respondent’s mobile device telephone number had been dialed is 1.00. However, for landline telephone numbers the selection opportunity is proportional to the number of adults in a household. For example, the probability of selecting the respondent if the respondent’s landline telephone number had been dialed and the respondent lives in a household with three other adults would be $\frac{1}{4}$ or .25. The selection opportunities across all telephone numbers by which a respondent could have been reached were summed to produce a “total selection opportunities” for each respondent.

Two transformations to each respondent’s total selection opportunities produced the base weights. First, 1 was divided by each respondent’s total selection opportunities to produce values that decreased proportionally to increases in total selection opportunities. This transformation produced values that ranged from 4.00 to .06, with a mean value across the sample of .67. Second, the values produced by the first transformation were divided by the mean value for a sample. This second transformation produced base weights for the respondents with a sample mean value of 1.00. For the sample, the base weights ranged from 5.98 to .10.

Stage 2: Post-stratification

Post-stratification using ANESRake in R was used to adjust the base weights to produce weights that brought sample distributions in line with U.S. adult population distributions in terms of sex, age combined race and ethnicity, education, census region, and telephone use. The U.S. adult population distributions of sex, age combined race and ethnicity, education, and census region were based on data from the March 2020 Current Population Survey (CPS). The U.S. adult population distribution of telephone use was based National Health Interview Survey data collected during the first six months of 2019 and published by the National Center for Health Statistics (Blumberg & Luke, May, 2020).¹⁰

¹⁰ Blumberg, Stephen J. and Julian V. Luke. May, 2020. Wireless substitution: Early release of estimates from the National Health Interview Survey, January–June 2019. National Center for Health Statistics. Available from: <https://www.cdc.gov/nchs/nhis.htm>.

Post-stratification raking using ANESRake in R was conducted such that the one-way marginal distributions of the preceding demographic variables in the sample converged on the one-way marginal distributions of those variables in the U.S. adult population. Post-stratification raking was conducted using only variables for which all categories included at least 5% of the U.S. adult population and 5% of the sample, and for which the percentage in the U.S. adult population differed from the percentage in the sample by at least 5 percentage points.¹¹ The weights produced by post-stratification raking were constrained such that no weight was greater than 5, and the mean weight was 1, ranging from .80 to 5.0.

Effects of weighting

Weights produced by post-stratification brought the sample distributions into alignment with population distributions. Table 1 includes the U.S. adult population distributions of variables used in post-stratification raking, as well as the unweighted, base weighted, and post-stratification weighted sample distributions of those variables. The table also include U.S adult population and sample distributions of variables that were not used in post-stratification. For all categories of variables used in post-stratification, no difference between the post-stratification weighted sample and U.S. adult population was greater than 1.5 percentage points. Thus, no difference exceeded the 5 percentage points identified by DeBell and Krosnick (2009) as a criterion for additional post-stratification adjustment.

The design effect associated with the final (post-stratification) weights was 1.64.

¹¹ This strategy follows recommendations in DeBell, Matthew and Jon A. Krosnick. 2009. *Computing Weights for American National Election Study Survey Data*, ANES Technical Report Series, No. nes012427.

Table 1. Distributions of variables in the U.S. adult population and the sample (variables used for post-stratification raking are in **bold**)

Variable	Category	Sample (N=999)			U.S. adult population	Difference between base weighted plus post-stratified and U.S. adult population
		Unweighted	Base weighted	Base weighted plus post-stratified		
Sex	Male	53.7%	53.9%	48.2%	48.3%	-.1%
	Female	46.0%	45.8%	51.6%	51.7%	-.1
	Missing	.3%	.3%	.2%	.0%	
	Total	100.0%	100.0%	100.0%	100.0%	
Age	18 to 24 years old	6.8%	8.2%	11.5%	11.5%	.0%
	25 to 34 years old	8.5%	8.7%	17.8%	17.9%	.0
	35 to 44 years old	14.2%	14.3%	16.3%	16.4%	-.1
	45 to 54 years old	16.0%	14.8%	15.9%	15.9%	.0
	55 to 64 years old	20.8%	20.7%	16.8%	16.8%	.0
	65 years old or older	33.2%	32.8%	21.5%	21.5%	.0
	Missing	.4%	.3%	.2%	.0%	
Total	100.0%	99.9%	100.1%	100.0%		
Combined race and Hispanicity	Hispanic	7.7%	7.9%	16.7%	16.7%	.0%
	White	72.2%	71.9%	62.7%	62.7%	.0
	Black	7.8%	8.2%	12.0%	11.9%	.1
	Other	12.3%	12.0%	8.6%	8.7%	.0
	Missing	.0%	.0%	.0%	.0%	
	Total	100.0%	100.0%	100.0%	100.0%	
Education	No diploma	5.1%	5.0%	9.6%	9.8%	-.2%
	High school	17.3%	17.6%	27.2%	27.7%	-.5
	Some college	25.8%	25.1%	27.3%	27.8%	-.5
	Bachelor's degree	26.2%	26.4%	21.9%	22.0%	-.1
	Advanced degree	24.4%	24.1%	12.6%	12.6%	.0
	Missing	1.1%	1.7%	1.2%	.0%	
	Total	100.0%	100.0%	99.9%	100.0%	
Census region	Northeast	17.5%	17.6%	17.3%	17.4%	-.1%
	Midwest	21.9%	21.9%	19.4%	20.7%	-1.3
	South	35.3%	35.3%	37.7%	38.0%	-.2
	West	25.0%	25.0%	25.3%	23.8%	1.5

	Missing	.2%	.2%	.2%	.0%	
	Total	100.0%	100.1%	100.0%	100.0%	
Phone service	Not mobile only	45.6%	44.9%	39.5%	40.1%	-.6%
	Mobile only	52.9%	53.6%	59.0%	59.9%	-.9
	Missing	1.5%	1.5%	1.4%	.0%	
	Total	100.0%	100.0%	99.9%	100.0%	
Race	White only	77.0%	77.2%	73.4%	77.5%	-4.2%
	Black only	8.1%	8.6%	13.1%	12.7%	.4
	Other/Mixed	14.9%	14.2%	13.5%	6.3%	7.2
	Missing	.0%	.0%	.0%	.0%	
	Total	100.0%	100.0%	100.0%	96.6%	
Hispanic	Yes	7.7%	7.9%	16.7%	16.7%	.0%
	No	90.3%	90.0%	81.6%	83.3%	-1.7
	Missing	2.0%	2.2%	1.7%	.0%	
	Total	100.0%	100.1%	100.0%	100.0%	
Marital status	Married	52.9%	51.3%	42.9%	53.1%	-10.1%
	Not married	46.4%	48.1%	56.5%	46.9%	9.5
	Missing	.7%	.6%	.6%	.0%	
	Total	100.0%	100.0%	100.0%	100.0%	
Income	Less than \$35,000	16.1%	16.1%	20.7%	23.5%	-2.8%
	\$35,000 to \$49,999	11.1%	11.8%	13.9%	12.8%	1.1
	\$50,000 to \$74,999	15.3%	15.3%	16.0%	18.7%	-2.7
	\$75,000 to \$99,999	12.2%	12.2%	11.8%	13.3%	-1.4
	\$100,000 or more	32.7%	32.1%	26.1%	31.8%	-5.7
	Missing	12.5%	12.4%	11.5%	.0%	
	Total	100.0%	100.0%	100.1%	100.0%	
