Climate Change in the American Mind: National Survey Data on Public Opinion (2008-2024)
Survey Methods and Codebook
April 2025

Survey Methods

Data are based on 31 waves of nationally representative surveys of U.S. adults aged 18 and older. As shown in Table 1, surveys were conducted once in 2008 and then twice a year from 2010 to 2024. All questionnaires were self-administered by respondents in a web-based environment. The questions included in this dataset represent a small portion of those asked in the complete surveys.

Samples were drawn from the Ipsos KnowledgePanel®, an online panel of members drawn using probability sampling methods. Prospective members were 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 chose to join the panel but did not have access to the Internet were loaned computers and given Internet access so they could participate. The sample therefore includes a representative cross-section of American adults – irrespective of whether they had Internet access, used only a cell phone, etc.

Table 1. Sample Details by Wave

Wave	*N*	Dates Fielded
November 2008	2,164	October 7 – November 12
January 2010	1,001	December 24, 2009 – January 3, 2010
June 2010	1,024	May 14 – June 1
May 2011	1,010	April 23 – May 12
November 2011	1,000	October 20 – November 16
March 2012	1,008	March 12 – March 30
September 2012	1,061	August 31 – September 12
April 2013	1,045	April 10 – 15
November 2013	830	November 23 – December 9
April 2014	1,013	April 15 – 22
October 2014	1,275	October 17 – 28
March 2015	1,263	February 27 – March 10
October 2015	1,330	September 30 – October 19
March 2016	1,204	March 18 – 31
November 2016	1,226	November 18 – December 1
May 2017	1,266	May 18 – June 6
October 2017	1,304	October 20 – November 1
March 2018	1,278	March 7 – 24
December 2018	1,114	November 28 – December 11
April 2019	1,291	March 29 – April 8
November 2019	1,303	November 8 – 20
April 2020	1,029	April 7 – 17

December 2020	1,036	December 3 – 16
March 2021	1,037	March 18 – 29
September 2021	1,006	September 10 – 20
April 2022	1,018	April 13 – May 2
December 2022	1,085	December 2 – 12
April 2023	1,011	April 18 – May 1
October 2023	1,033	October 20 – 26
April 2024	1,031	April 25 – May 4
December 2024	1,013	December 11 – 22
Total out of 31 waves	35,309	--

Sampling 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. The margin for error for each wave is plus or minus 3 percentage points at the 95% confidence level, except November 2008 where the margin of error is plus or minus 2 percentage points. Margins of error become smaller when combining multiple waves for analysis (e.g., the margin of error for each year is typically plus or minus 2 percentage points). Margins of error become larger when examining smaller subgroups of the population (e.g., political party).

Rounding Procedure

Percentage points are rounded to the nearest whole number or decimal place. As a result, percentages in a given chart may total slightly higher or lower than 100%. Summed response categories (e.g., "strongly agree" + "somewhat agree") are rounded after sums are calculated (e.g., 1.3% + 1.3% = 2.6%, which, after rounding = 3%). Also, percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 2.49% = 2% and 2.51% = 3%).

Sampling Weights

Once the surveys were fielded and all survey data were collected, sampling weights were computed for each respondent. Data were weighted based on key demographic variables to match U.S. Census Bureau norms. Data from the Current Population Survey (CPS), the American Community Survey (ACS), and/or demographic profile data from the Knowledge Panel® of U.S. adults age 18 or older were used as benchmarks for the raking adjustment of weights. Data were typically weighted by respondents' age, gender, race/ethnicity, Census region, metropolitan status, education, and income.

There are two weight variables in the dataset. The variable "weight_wave" refers to the sampling weights that were computed for each wave of data collection. Because sample sizes vary from wave to wave, we computed a "weight_aggregate" variable that standardizes the

sampling weights so data can be analyzed at an aggregate level (i.e., combining waves of data), adjusting for sample size differences across waves. We computed "weight_aggregate" by (1) dividing the "weight_wave" variable by the sample size of each respective wave, and then (2) by multiplying these values by the average sample size of all 31 waves (total *N* = 35,309 / 31 waves = 1,139) so that the total weighted sample size of the entire dataset equals the unweighted sample size (*N* = 35,309).

Sampling weights should be applied for all descriptive analyses. We advise using the "weight_wave" sampling weight when conducting descriptive analyses for a specific wave and the "weight_aggregate" sampling weight when aggregating multiple waves (e.g., across years). To obtain accurate frequencies or counts (*n*), sampling weights need to be turned off.

Running Crosstabs with SPSS

In SPSS, the default when analyzing data using crosstabs is to round cell counts. However, sampling weights can make cell counts nonintegers (i.e., frequencies that are no longer whole numbers). When running crosstabs in SPSS, make sure there are no adjustments to noninteger weights (in the Crosstabs menu, click the Cells button, and select the option that says "No adjustments" beneath "Noninteger weights").

Refusals and Descriptive Analyses

Respondents were not required to answer all questions in the survey. For every question, refusals were coded as -1 (see below for codebook). For descriptive analyses, refusals should always be considered as valid responses when reporting percentages. For example, if 5% of the sample refused to answer the question, the other responses should sum to 95%.

Recommended Citation

Please cite the dataset and article in any work that makes use of the data and documentation as follows:

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Climate Change in the American Mind (2008-2024) Codebook

The following tables include information on the variable names in the dataset, survey questions and response options, and the number of waves the questions were included in. The response options for many questions can be collapsed into single categories. For example, for measuring how worried respondents are about global warming "very worried" and "somewhat worried" can be combined into a single measure of "worried." For more information on computing these categories, visit the Climate Change in the American Mind (CCAM) Explorer and/or download our SPSS syntax on our Open Science Framework page.

Variable Name	Survey Question	Response Options	Included in Waves
case_ID	Case identifier	--	All waves *N* = 35,309
wave	Survey wave	1. Nov 2008 2. Jan 2010 3. Jun 2010 4. May 2011 5. Nov 2011 6. Mar 2012 7. Sep 2012 8. Apr 2013 9. Nov 2013 10. Apr 2014 11. Oct 2014 12. Mar 2015 13. Oct 2015 14. Mar 2016 15. Nov 2016 16. May 2017 17. Oct 2017 18. Mar 2018 19. Dec 2018 20. Apr 2019 21. Nov 2019 22. Apr 2020 23. Dec 2020 24. Mar 2021 25. Sep 2021 26. Apr 2022 27. Dec 2022 28. Apr 2023 29. Oct 2023 30. Apr 2024 31. Dec 2024	All waves *N* = 35,309

year	Year of wave	1. 2008 2. 2010 3. 2011 4. 2012 5. 2013 6. 2014 7. 2015 8. 2016 9. 2017 10. 2018 11. 2019 12. 2020 13. 2021 14. 2022 15. 2023 16. 2024	All waves *N* = 35,309
weight_wave	Sampling weight specific to each wave	--	All waves *N* = 35,309
weight_aggregate	Sampling weight if aggregating multiple waves	--	All waves *N* = 35,309
happening	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?	-1. Refused 1. No 2. Don't know 3. Yes	All waves *N* = 35,309

cause_original	Assuming global warming is happening, do you think it is…	-1. Refused 1. Caused mostly by human activities 2. Caused mostly by natural changes in the environment 3. Other (Please specify) 4. None of the above because global warming isn't happening	All waves *N* = 35,309
cause_other_text	[Other - Specify] Assuming global warming is happening, do you think it is...	Open-ended responses to the "cause_original" question were coded to form a new variable: "cause_recoded"	All waves *N* = 35,309
cause_recoded	Assuming global warming is happening, do you think it is... (Recoded to include open-ends)	-1. Refused 1. Don't know 2. Other 3. Neither because global warming isn't happening 4. Caused mostly by natural changes in the environment 5. Caused by human activities and natural changes 6. Caused mostly by human activities	All waves *N* = 35,309
sci_consensus	Which comes closest to your own view?	-1. Refused 1. Don't know enough to say 2. There is a lot of disagreement among scientists about whether or not global warming is happening 3. Most scientists think global warming is not happening 4. Most scientists think global warming is happening	30 waves Not asked in Oct 2015 *N* = 33,979

worry	How worried are you about global warming?	-1. Refused 1. Not at all worried 2. Not very worried 3. Somewhat worried 4. Very worried	All waves *N* = 35,309
harm_personally	[The following five risk perception questions were asked together as a set] How much do you think global warming will harm: You personally	-1. Refused 0. Don't know 1. Not at all 2. Only a little 3. A moderate amount 4. A great deal	All waves *N* = 35,309
harm_US	How much do you think global warming will harm: People in the United States	-1. Refused 0. Don't know 1. Not at all 2. Only a little 3. A moderate amount 4. A great deal	All waves *N* = 35,309
harm_dev_countries	How much do you think global warming will harm: People in developing countries	-1. Refused 0. Don't know 1. Not at all 2. Only a little 3. A moderate amount 4. A great deal	All waves *N* = 35,309
harm_future_gen	How much do you think global warming will harm: Future generations of people	-1. Refused 0. Don't know 1. Not at all 2. Only a little 3. A moderate amount 4. A great deal	All waves *N* = 35,309
harm_plants_animals	How much do you think global warming will harm: Plant and animal species	-1. Refused 0. Don't know 1. Not at all 2. Only a little 3. A moderate amount 4. A great deal	30 waves Not asked in Oct 2015 *N* = 33,979

when_harm_US	When do you think global warming will start to harm people in the United States?	-1. Refused 1. Never 2. In 100 years 3. In 50 years 4. In 25 years 5. In 10 years 6. They are being harmed right now	All waves *N* = 35,309
reg_CO2_pollutant	How much do you support or oppose the following policies? Regulate carbon dioxide (the primary greenhouse gas) as a pollutant.	-1. Refused 1. Strongly oppose 2. Somewhat oppose 3. Somewhat support 4. Strongly support	29 waves Not asked in May 2011 and Oct 2023 *N* = 33,266

fund_research	How much do you support or oppose the following policies? Fund more research into renewable energy sources, such as solar and wind power.	-1. Refused 1. Strongly oppose 2. Somewhat oppose 3. Somewhat support 4. Strongly support	29 waves Not asked in Oct 2023 *N* = 33,245
reduce_tax	How much do you support or oppose the following policies? Require fossil fuel companies to pay a carbon tax and use the money to reduce other taxes (such as income tax) by an equal amount.	-1. Refused 1. Strongly oppose 2. Somewhat oppose 3. Somewhat support 4. Strongly support	18 waves Not asked between 2008 and Mar 2015. Also not asked in Apr 2024. *N* = 20,584
priority	Do you think global warming should be a low, medium, high, or very high priority for the president and Congress?	-1. Refused 1. Low 2. Medium 3. High Very high	30 waves Not asked in Apr 2014 *N* = 34,629
priority_cleanenergy	Do you think that developing sources of clean energy should be a low, medium, high, or very high priority for the president and Congress?	-1. Refused 4. Low 5. Medium 6. High 7. Very high	29 waves Not asked in 2008, Nov 2013, or Apr 2014 *N* = 31,302

generate_renewable	How much do you support or oppose the following policies? Generate renewable energy (solar and wind) on public land in the U.S.	-1. Refused 1. Strongly oppose 2. Somewhat oppose 3. Somewhat support 4. Strongly support	11 waves Not asked until Mar 2016. Also not asked in May 2017, Dec 2018, Apr 2019, Mar 2021, Sep 2021, and Apr 2023. *N* = 12,356
teach_gw	How much do you agree or disagree with the following statements? Schools should teach our children about the causes, consequences, and potential solutions to global warming.	-1. Refused 1. Strongly disagree 2. Somewhat disagree 3. Somewhat agree 4. Strongly agree	13 waves Not asked between Jun 2010 and Oct 2015. Also not asked in 2008, Dec 2018, Apr 2020, Mar 2021, Apr 2022, Apr 2023, and Apr 2024. *N* = 15,046
transition_economy	How much do you support or oppose the following policies? Transition the U.S. economy (including electric utilities, transportation, buildings, and industry) from fossil fuels to 100% clean energy by 2050.	-1. Refused 1. Strongly oppose 2. Somewhat oppose 3. Somewhat support 4. Strongly support	9 waves Not asked until Apr 2020 *N* = 9,270
discuss_GW	How often do you discuss global warming with your family and friends?	-1. Refused 1. Never 2. Rarely 3. Occasionally 4. Often	All waves *N* = 35,309

hear_GW_media	About how often do you hear about global warming in the media (TV, movies, radio, newspapers/news websites, magazines, etc.)?	-1. Refused 0. Not sure 1. Never 2. Once a year or less often 3. Several times a year 4. At least once a month 5. At least once a week	19 waves Not asked between 2008 – 2014 and in Nov 2016 *N* = 21,652
gender	Are you…?	1. Male 2. Female	All waves *N* = 35,309
age	How old are you?	Open-ended	All waves *N* = 35,309

age_category	Computed based on open-ended response to age	1. 18-34 years 2. 35-54 years 3. 55+ years	All waves *N* = 35,309
generation	Computed based on respondents' age at the time of data collection. Given that generation is estimated, some respondents may be miscategorized.	1. Gen Z (1997 or later) 2. Millennials (1981 – 1996) 3. Generation X (1965 – 1980) 4. Baby Boomers (1946 – 1964) 5. Silent (1928 – 1945) 6. Greatest (Before 1928)	All waves *N* = 35,309
educ	What is the highest level of school you have completed?	1. No formal education 2. 1st, 2nd, 3rd, or 4th grade 3. 5th or 6th grade 4. 7th or 8th grade 5. 9th grade 6. 10th grade 7. 11th grade 8. 12th grade no diploma 9. High school graduate – high school diploma or the equivalent (GED) 10. Some college, no degree 11. Associate's degree 12. Bachelor's degree 13. Master's degree 14. Professional or doctorate degree	All waves *N* = 35,309
educ_category	Responses to "educ" were categorized into four groups: responses 1-8 were coded as "Less than high school", 9 was coded as "High school," 10 and 11 were coded as "Some college," and 12-14 were coded as "Bachelor's degree or higher"	1. Less than high school 2. High school 3. Some college 4. Bachelor's degree or higher	All waves *N* = 35,309
income	We would like to get a better estimate of your total HOUSEHOLD income in the past 12 months before taxes. Was it...	1. Less than $5,000 2. $5,000 to $7,499 3. $7,500 to $9,999 4. $10,000 to $12,499	All waves *N* = 35,309 Response options changed from Mar

		5. $12,500 to $14,999 6. $15,000 to $19,999 7. $20,000 to $24,999 8. $25,000 to $29,999 9. $30,000 to $34,999 10. $35,000 to $39,999 11. $40,000 to $49,999 12. $50,000 to $59,999 13. $60,000 to $74,999 14. $75,000 to $84,999 15. $85,000 to $99,999 16. $100,000 to $124,999 17. $125,000 to $149,999 18. $150,000 to $174,999 19. $175,000 to $199,999 ["$175,000 or more" Nov 2008 – Mar 2016] 20. $200,000 to $249,999 [Nov 2016 on] 21. $250,000 or more [Nov 2016 on]	2016 on to include higher levels of income
income_category	Responses to "income" were categorized into the following three groups.	1. Less than $50,000 2. $50,000 to $99,999 3. $100,000 or more	All waves *N* = 35,309
race	Respondents were first asked "Are you Spanish, Hispanic, or Latino?" Respondents who said "Yes" were coded as 4 = "Hispanic." Following this question, all respondents were asked to "Please choose one or more race(s) that you consider yourself to be" with 6 response options, "White," "Black or African American," "American Indian or Alaska Native," "Asian," "Native Hawaiian or other Pacific Islander," or "Some other race." Respondents who said they were not Spanish, Hispanic, or Latino to first question and said "White" were	1. White, non-Hispanic 2. Black, non-Hispanic 3. Other, non-Hispanic 4. Hispanic	All waves *N* = 35,309

	coded as 1 = “White, non-Hispanic;” “Black or African American” were coded as 2 = “Black, non-Hispanic;” “American Indian or Alaska Native,” “Asian,” “Native Hawaiian or other Pacific Islander,” or “Some other race” were coded as 3 = “Other, non-Hispanic.” Respondents who said they were not Spanish, Hispanic, or Latino and selected more than one race were also coded as 3 = “Other, non-Hispanic”		
ideology	In general, do you think of yourself as…	-1. Refused 1. Very liberal 2. Somewhat liberal 3. Moderate, middle of the road 4. Somewhat conservative 5. Very conservative	All waves *N* = 35,309
party	Generally speaking, do you think of yourself as a…	-1. Refused 1. Republican 2. Democrat 3. Independent 4. Other; please specify: 5. No party/not interested in politics	All waves *N* = 35,309
party_w_leaners	Computed based on responses to “party” and a follow-up question “Do you think of yourself as closer to the…” with four response options, “Republican Party,” “Democratic Party,” “Neither,” or “No response.” Respondents who initially identified as either a Republican or Democrat, as well as those who did not initially identify as “Republican” or “Democrat” but who say they “are closer to” one party or the other (i.e., “leaners”) in the follow-up question were categorized as Republican or Democrat, respectively. The category “Independents”	-1. Refused 1. Republicans 2. Democrats 3. Independent/Other 4. No party/not interested in politics	All waves *N* = 35,309

	does not include any of these leaners, only those who chose "Independent" or "Other" to the "party" question.		
party_x_ideo	Computed based on responses to the "party_w_leaners" and "ideology" items. Democrats were categorized as "Liberal Democrats" if they said they are "Very" or "Somewhat" liberal, or "Conservative/Moderate Democrats" if they said they are "Moderate, middle of the road" or "Very" or "Somewhat" conservative. Similarly, Republicans who self-reported that they are "Very" or "Somewhat" conservative were categorized as "Conservative Republicans," whereas those who said they are "Moderate, middle of the road" or "Very" or "Somewhat" liberal were categorized as "Liberal/Moderate Republicans." The category "Independent (non-leaning)" refers to those categorized as "Independent/Other" in the "party_w_leaners" variable.	-2. No party/not interested in politics -1. Refused 1. Liberal Democrat 2. Moderate/Conservative Democrat 3. Independent (non-leaning) 4. Liberal/Moderate Republican 5. Conservative Republican	All waves *N* = 35,309
registered_voter	Are you registered to vote? [Nov 2008 – Apr 2012] Are you currently registered to vote, or not? [Sep 2012 on]	-1. Refused 1. Registered ["Yes" Nov 2008 – Apr 2012] 2. Not registered ["No" Nov 2008 – Apr 2012] 3. Not sure [Nov 2008 – Apr 2012] 4. Don't know [Sep 2012 on] 5. Prefer not to answer [Sep 2012 on]	All waves *N* = 35,309 Question wording and response options changed from Apr 2012 to Sep 2012
region9	Computed based on state of residence: New England = CT, MA, ME, NH, RI, VT; Mid-Atlantic = NJ, NY, PA; East-North Central = IL, IN, MI, OH, WI; West-North Central = IA, KS, MN, MO, ND, NE, SD; South Atlantic = DC, DE, FL, GA,	1. New England 2. Mid-Atlantic 3. East-North Central 4. West-North Central 5. South Atlantic	All waves *N* = 35,309

	MD, NC, SC, VA, WV; East-South Central = AL, KY, MS, TN; West-South Central = AR, LA, OK, TX; Mountain = AZ, CO, ID, MT, NM, NV, UT, WY; Pacific = AK, CA, HI, OR, WA.	6. East-South Central 7. West-South Central 8. Mountain 9. Pacific	
region4	Computed based on "region9": Northeast = New England, Mid-Atlantic; Midwest = East-North Central, West-North Central; South = South-Atlantic, East-South Central, West-South Central; West = Mountain, Pacific.	1. Northeast 2. Midwest 3. South 4. West	All waves *N* = 35,309
religion	What is your religion?	-1. Refused 1. Baptist – any denomination 2. Protestant (e.g., Methodist, Lutheran, Presbyterian, Episcopal) 3. Catholic 4. Mormon 5. Jewish 6. Muslim 7. Hindu 8. Buddhist 9. Pentecostal 10. Eastern Orthodox 11. Other Christian 12. Other – non-Christian (Please specify) 13. Agnostic [Apr 2014 on] 14. Atheist [Apr 2014 on] 15. None of the above [Apr 2014 on; "None" Nov 2008 – Dec 2013]	All waves *N* = 35,309 Response options changed from Apr 2014 on
religion_other_nonchristian	[Other – non-Christian – specify] What is your religion?	Open-ended responses to the "religion" question	All waves *N* = 35,309
evangelical	Would you describe yourself as "born-again" or evangelical?	-1. Refused 1. Yes 2. No 3. Don't know	All waves *N* = 35,309

service_attendance	How often do you attend religious services?	-1. Refused 1. Never 2. Once a year or less 3. A few times a year 4. Once or twice a month 5. Once a week 6. More than once a week	All waves *N* = 35,309
marit_status	Respondents were first asked "Are you now…?" with response options 1-5. Respondents who indicated they were not "Married" (i.e., responses 2-5) were asked a follow-up, "Are you currently living with a partner to whom you are not married?" Respondents who said "Yes" were coded as 6 = "Living with partner"	1. Married 2. Widowed 3. Divorced 4. Separated 5. Never married 6. Living with partner	All waves *N* = 35,309
employment	Do any of the following currently describe you?	1. Working – as a paid employee 2. Working – self-employed 3. Not working – on temporary layoff from a job 4. Not working – looking for work 5. Not working – retired 6. Not working – disabled 7. Not working – other	All waves *N* = 35,309
house_head	Respondents were asked "Is your residence in…" with response options "Your name only," "Your name with someone else's name (jointly owned or rented)," or "Someone else's name only." Respondents who said "Someone else's name only" were coded as 0 = "Not head of household;" the other two responses were coded as 1 = "Head of household"	1. Not head of household 2. Head of household	All waves *N* = 35,309
house_size	Respondents were asked two questions: "Including yourself, how many people are 18 years of age or older and currently live in your	Open-ended	All waves *N* = 35,309

	household at least 50% of the time? Please include unrelated individuals (such as roommates), and also include those now away traveling, away at school, or in a hospital" and "Next, how many people are 17 years of age or younger and currently live in your household at least 50% of the time? If none, enter 0. Include babies and small children." Responses to these questions were combined to calculate overall household size.		
house_ages0to1 house_ages2to5 house_ages6to12 house_ages13to17 house_ages18plus	Please tell us a little more about the people you share your household with. For each person in your household (up to 10 people), enter their age on their last birthday and indicate if they are male or female. For infants who are less than 1 year old, please enter a 0 for age.	Open-ended	All waves *N* = 35,309
house_type	Which best describes the building where you live?	1. One-family house detached from any other house 2. One-family house attached to one or more houses (such as a condo or townhouse) 3. Building with 2 or more apartments 4. Mobile home 5. Boat, RV, van, etc.	All waves *N* = 35,309
house_own	Are your living quarters…	1. Owned by you or someone in your household 2. Rented 3. Occupied without payment of rent	All waves *N* = 35,309