Muhlenberg College | Institute of Public Opinion

National Surveys on Energy and the Environment
Key Findings Report
2023 Wave

The following report summarizes key findings from the 2023 wave of the National Surveys on Energy and the Environment (NSEE). This survey wave marks the 26th in the series, dating back to the project's origin in 2008, under a partnership between Muhlenberg College and the University of Michigan. Beginning in 2020, the NSEE has been produced exclusively by the Muhlenberg College Institute of Public Opinion.

The United Nations Framework Convention on Climate Change issued a report in early September of 2023 that indicated global efforts to reduce greenhouse gas emissions have not reached the levels by which the most damaging effects of climate change may be avoided.[1] This warning comes as individuals are increasingly experiencing the effects of climate change in the form of record heat waves. historic wildfires and rising sea levels.[2] Given the limited progress in mitigating climate change, and the arrival of many of the negative impacts of climate change, this NSEE report examines the degree to which Americans may be adopting pessimistic views regarding efforts to address the warming of the planet.

KEY FINDING ONE: Despite Limited Success in Preventing Climate Change, Most Americans Don't Want to Abandon Efforts to Prevent Future Warming

Between 2011 and 2023, the NSEE included an item that asked respondents if instead of trying to stop global warming from occurring, there should be a focus on adapting to a warmer climate. Given the fairly limited success in climate mitigation efforts over the last decade, especially in the United States, this study is interested in determining if there has been a shift away from support for mitigation efforts with a simultaneous elevation of adaptation that is necessary given the lack of progress in terms of mitigation. The results presented in the following table show that there has been little shift in American public support for deemphasizing mitigation over the last twelve years. About one third of Americans have consistently agreed (either "strongly" or "somewhat") that instead of trying to stop global warming the focus should move to adapting to a warmer climate.

[1] United Nations Climate Change (September 8, 2023) https://unfccc.int/news/implementation-must-accelerate-to-increase-ambition-across-all-fronts-taking-an-all-of-society

[2] Intergovernmental Panel on Climate Change (March 2023) *Climate Change 2023 Synthesis Report.* https://www.ipcc.ch/report/ar6/syr/

Level of Agreement with the Statement, "Instead of trying to stop global warming from occurring we should focus on adapting to a warmer climate" (2011-2023)

	2011 (n= 887)	2019 (n=601)	2020 (n=607)	2021 (n=614)	2022 (n= 614)	2023 (n =711)
Strongly Agree	6%	8%	9%	8%	12%	10%
Somewhat Agree	23%	22%	25%	23%	22%	27%
Somewhat Disagree	30%	24%	21%	20%	21%	26%
Strongly Disagree	36%	37%	34%	38%	40%	35%
Not Sure	5%	10%	11%	11%	4%	2%

Question Wording: Instead of trying to stop global warming from occurring we should focus on adapting to a warmer climate

KEY FINDING TWO: Americans Remain Skeptical that Adaptation to Climate Change Can Occur Without Major Changes to Lifestyles.

In 2023 nearly two out of three adult Americans (65%) indicate that humans will not be able to adapt to a hotter climate without major changes to their lifestyles. The widespread belief among Americans that adaptation to climate change will require major changes to lifestyles has remained fairly consistent over the last decade, with solid majorities of Americans maintaining this opinion in six waves of the NSEE between 2011 and 2023.

Level of Agreement with the Statement, "Humans will be able to adapt to a hotter climate without making significant changes to their lifestyles"

(2011-2023)

	2011 (n= 887)	2019 (n=601)	2020 (n=607)	2021 (n=614)	2022 (n= 614)	2023 (n =711)
Strongly Agree	6%	7%	11%	9%	10%	9%
Somewhat Agree	24%	21%	24%	23%	24%	26%
Somewhat Disagree	25%	22%	20%	25%	20%	26%
Strongly Disagree	40%	44%	38%	37%	40%	39%
Not Sure	4%	6%	7%	7%	5%	1%

Question Wording: "Humans will be able to adapt to a hotter climate without making significant changes to their lifestyles."

KEY FINDING THREE: An Expanding Majority of Americans Report Feeling the Effects of Climate Change

The American public's belief that adaptation to climate change will require major changes in lifestyles is paired with their broad experiences with the effects of climate change. The 2023 NSEE finds that over 6 out of 10 Americans (62%) agree that they have personally felt the effects of climate change. The 2023 results mark the first time this

decade when 6 out of 10 adults in the United States reported that they have themselves directly experienced the impacts of climate change.

Level of Agreement with the Statement, "I have personally felt the effects of climate change." (2020-2023)

	2020 (n=607)	2021 (n=614)	2022 (n= 614)	2023 (n =711)
Strongly Agree	26%	28%	30%	32%
Somewhat Agree	32%	28%	27%	30%
Somewhat Disagree	15%	18%	16%	15%
Strongly Disagree	23%	21%	25%	22%
Not Sure	4%	4%	2%	<1%

KEY FINDING FOUR: Most Americans are Pessimistic About the Ability of Governments to Prevent the Most Damaging Effects of Climate Change.

Beyond the NSEE item exploring public views on moving away from mitigation efforts, there is an item in the 2023 wave that examines confidence in governments to mitigate climate change. The item employs a narrow frame that asks respondents their level of agreement with the statement, "Governments will be able to stop the most damaging effects of climate change from occurring." The findings indicate substantial public skepticism with the ability of governments to stop the most damaging effects of climate change from occurring, with about half (51%) of adult Americans "strongly disagreeing" that governments will be able to achieve this outcome.

Level of Agreement with the Statement, "Governments will be able to stop the most damaging effects of climate change from occurring"

Option	Percentage
Strongly Agree	7%
Somewhat Agree	22%
Somewhat Disagree	18%
Strongly Disagree	53%
Not Sure	1%

KEY FINDING FIVE: Pessimism About the Ability of Governments to Mitigate Climate Change is Most Substantial Among Older Americans.

While a majority of all age groups examined in the NSEE study disagree that governments will be able to prevent the most damaging effects of climate change from occurring, older Americans are most likely to maintain pessimistic views on this matter. Nearly 6 in 10 Americans (59%) over the age of 45 "strongly disagree" that governments will mitigate the worst of climate change, compared to less than 4 in 10 adult Americans under the age of 30.

Level of Agreement with the Statement, "Governments will be able to stop the most damaging effects of climate change from occurring," by Age of Respondent

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Not Sure
18-29 (n = 141)	6%	36%	21%	37%	1%
30-44 (n = 166)	5%	27%	15%	51%	2%
45-64 (n = 205)	9%	12%	19%	59%	1%
65 and Over (n = 165)	8%	16%	16%	59%	0%

Question Wording: Governments will be able to stop the most damaging effects of climate change from occurring.

METHODS:

This report contains the results of a telephone survey of 711 adult residents of the United States between February 2 and March 20, 2023. Respondents were interviewed in English on both landlines (159) and cell phones (552). With a randomly selected sample of respondents, the margin of error for the surveys is +/- 5% at a 95% level of confidence. Margins of error for questions with smaller sample size will be larger. In addition to sampling error, one should consider that question wording and other fielding issues could introduce error or bias into survey results. The sample data has been weighted by gender, race, age, income and educational attainment to reflect national population characteristics as reported by the United States Census Bureau in 2023. The calculation of sampling error takes into account design effects due to the weighting identified above. In order to reach a representative sample of adult residents of the United States, both landlines and cell phones are called up to 5 times. The sample for the project was generated by the Marketing Systems Group in Horsham, Pennsylvania. The response rate for this survey as calculated using the American Association of Public Opinion Research (AAPOR) RRII formula is approximately 4%. Due to rounding, the totals provided in the frequency report may not total 100%. The survey instrument, presented in its entirety in the following section, was designed by Dr. Christopher P. Borick, Director of the Muhlenberg College Institute of Public Opinion (MCIPO), and Professor of Political Science, in conjunction with Dr. Erick Lachapelle of the University of Montreal. The survey was funded exclusively by Muhlenberg College. For more detailed information on the methods employed, please contact the MCIPO at 484-664-3444 or email Dr. Borick at christopherborick@muhlenberg.edu.

SURVEY INTRUMENT AND WEIGHTED FREQUENCIES

Fielding Dates: February 2– March 20, 2023
Sample Size: 711 Adults in the United States
Method: Telephone (78% Cell and 22% Landline)
Margin of Error: +/- 5%
AAPOR Response Rate (II): 4%
Totals may not equal 100% due to rounding

Q1: Can you please tell me in which year you were born? (GROUPED INTO CATEGORIES)

18-29……..21%
30-44……..25%
45-64……..30%
65 and Older….24%

Q2: What state do you currently reside in? (GROUPED INTO REGIONS)

Northeast……..23%
South……..34%
Midwest……23%
West……20%

Q3: Next, I would like to ask you a few questions on the issue of global warming. From what you've read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past four decades?

Yes ……..74%
No ……..20% (SKIP TO Q8)
Not Sure (Volunteered)…… 6% (SKIP TO Q10)

Q4: How confident are you that the average temperature on earth is increasing? Are you very confident, fairly confident, not too confident or not confident at all that the average temperature on earth is increasing?

Very confident…..……67%
Fairly confident…..……..28%
Not too confident…….. 5%
Not confident at all……<1%
Not Sure (Volunteered)…….. <1%

Q5: Is the earth getting warmer mostly because of human activity such as burning fossil fuels, or mostly because of natural patterns in the earth's environment?

Human activity…….. 49% Skip to Q7
Natural patterns……26% Skip to Q7
A combination (Volunteered)……..23% (Go to Q6)
Not Sure (Volunteered)…… 2% Skip to Q7

Q6: I know you say it's a combination, but if you had to choose, would you say that temperatures on earth are rising *mostly* because of human activity or *mostly* because of natural patterns?

Human activity…….. 67%
Natural patterns…… 9%
Equal (Volunteered)…… 21%
Not Sure (Volunteered)…… 4%

Q7: What is the primary factor that has caused you to believe that temperatures on earth are increasing? (OPEN ENDED – CODED INTO CATEGORIES)

Human Activity…….. 23%
Warmer Temperatures Observed…….. 16%
Weather Changes…… 15%
Scientific Research…… 13%
Natural Patterns…… 9%
Melting Glaciers/Polar Ice…… 9%
Media Coverage…….. 7%
Ocean Changes…… …. 2%
Wildfires…….. 1%
Not Sure/Other…… 6%

ONLY THOSE WHO ANSWERED "NO" IN Q3 (i.e., do not believe temperatures are increasing)

Q8: How confident are you that the average temperatures on earth are NOT increasing? Are you very confident, fairly confident, not too confident or not confident at all that the average temperature on earth is NOT increasing?

Very confident……44%
Fairly confident……43%
Not too confident…….. 9%
Not confident at all…… 3%
Not Sure (VOL)…… 1%

Q9: What is the primary factor that makes you believe that temperatures on earth are not increasing? (OPEN ENDED – CODED INTO CATEGORIES)

Natural Patterns/Cycles……..35%
Personal Observations……..30%
Lack of Evidence…….. 8%
Evidence Disproves…….7%
Religious Factors…….. 5%
Political Factors…….. 3%
Media has Misled…… 1%
No Particular Reason…….. 2%
Not Sure/Other…….. 8%

****ALL RESPONDENTS****

Q10: In your view is global warming a very serious problem, somewhat serious, not too serious, or not a problem?

Very serious…….. 47%
Somewhat serious…….. 22%
Not too serious…….. 13%
Not a problem……18%
Not Sure (Volunteered)…….. 1%

Q11: Over the past year have you personally seen any significant changes in weather patterns where you live?

Yes…….. 57%
No……..43% (SKIP TO Q13)
Not Sure (Volunteered)…… 1% (SKIP TO Q13)

Q12: What changes have you seen personally? (OPEN ENDED – CODED INTO CATEGORIES)

Increased Temperatures…….. 18%
Milder Winters……..17%
Less Snow…….. 13%
Colder/More Snow…….. 8%
Change in Seasons…….. 7%
Extreme Weather and Storms…….. 6%
Weather Differences…….. 6%
Temperature Fluctuation and Changes…….. 6%
Drought and Decreased Rainfall…….. 6%
Hurricane/Tornado Activity…….. 4%
Increased Rain and Flooding…….. 4%
Miscellaneous Changes…….. 3%
Wildfires…….. 1%
Ocean Related Changes…….. 1%
Generally Different/Not Sure…….. 1%

Q13: In general, how would you describe the overall weather in your area this past YEAR? Would you say it was:

A LOT warmer than usual 21%
SLIGHTLY warmer than usual 32%
SLIGHTLY cooler than usual 9%
A LOT cooler than usual..... 5%
Or about the same as usual? 33%
Not sure (Volunteered)..... 1%

(QUESTIONS Q14 to Q21 ROTATED)

Please identify your level of agreement with the following statements. For each statement please indicate if you strongly agree, somewhat agree, somewhat disagree or strongly disagree. First,

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Not Sure (Vol)
Q14: Americans will not make major changes in their lifestyles, so the best way to reduce greenhouse gases will be through technological advancements.	28%	41%	14%	14%	2%

Q15: Governments will be able to stop the most damaging effects of climate change from occurring.	7%	22%	18%	53%	1%
Q16: I have personally felt the effects of climate change.	32%	30%	15%	22%	<1%
Q17: If global warming does take place I have confidence that scientists would be able to find ways to alter the climate in a way that limits problems.	13%	34%	19%	32%	3%
Q18: Attempts to reduce global warming by adding materials to the atmosphere will cause more harm than good for the environment.	40%	30%	10%	5%	16%
Q19: If human activity leads to global warming then humans will also be able to find ways to reduce temperatures on the planet through atmospheric engineering methods.	11%	38%	17%	25%	8%
Q20: Instead of trying to stop global warming from occurring we should focus on adapting to a warmer climate.	10%	27%	26%	35%	2%
Q21: Humans will be able to adapt to a hotter climate without making significant changes to their lifestyles.	9%	26%	26%	39%	1%

Q22: NASA recently reported that 2022 was the fifth hottest year on the planet since record keeping began in 1880. Which of the following best describes your view on the NASA report that 2022 was the fifth hottest year since 1880? (READ LIST)

1. The record heat is evidence that global warming is happening and is caused primarily by human activity…….56%
2. The record heat is evidence that global warming is happening, but it caused primarily by a natural cycle……30%
3. Or the NASA temperature report is based on flawed measurements and global warming is not occurring…….12%

98. Not Sure (Vol)……..2%

Q23: Next I'm going to read you a list of actions that the United States may take to address climate change. Which of the actions do you believe is the MOST important action the United States should take? **[READ LIST]**

1. Promote greenhouse gas reductions to try and limit climate change……35%
2. Learn to adapt to a warmer world that is the result of climate change…….25%
3. Promote geoengineering and scientific fixes to counter climate change……..25%
4. All equally important (VOLUNTEERED)…… 6%

5. None are important (VOLUNTEERED)…… 9%
98. Not Sure (VOLUNTEERED)…… 1%

Q24: If it required you to pay extra money each year in order for more renewable energy to be produced, how much would you be willing to pay? Would you be willing to pay… **[READ LIST]**

Nothing each year…… 47%
1 to 50 dollars per year…… 12%
50 to 100 dollars a year…… 13%
100 to 250 dollars a year…… 9%
250 to 500 dollars a year…… 7%
Over 500 dollars a year…… 12%
Not Sure (Volunteered)…… 1%

Q25: Next I will read you a list of options to reduce greenhouse gases from our energy system. Please select the TWO of which you are MOST in favor. (REPEAT LIST IF NECESSARY)

FIRST CHOICE
1. Use ROOFTOP SOLAR panels to replace fossil fuels ……42%
2. Use large SOLAR FARMS to replace fossil fuels ……12%
3. Use NUCLEAR energy to replace fossil fuels ……18%
4. Use ON-LAND WIND energy to replace fossil fuels …… 8%
5. Use OFFSHORE WIND energy to replace fossil fuels …… 6%
6. Use FOSSIL FUELS, capturing the emissions before they are released into the atmosphere…… 14%
98. Not Sure……<1%

SECOND CHOICE
1. Use ROOFTOP SOLAR panels to replace fossil fuels ……14%
2. Use large SOLAR FARMS to replace fossil fuels ……19%
3. Use NUCLEAR energy to replace fossil fuels ……14%
4. Use ON-LAND WIND energy to replace fossil fuels …… 22%
5. Use OFFSHORE WIND energy to replace fossil fuels …… 16%
6. Use FOSSIL FUELS, capturing the emissions before they are released into the atmosphere…… 15%

98. Not Sure…… 1%

Q26: Below is the same list of options to reduce greenhouse gases from our energy system. Please select the TWO of which you are LEAST in favor. (DO NOT READ ITEMS SELECTED IN QUESTION 25)

FIRST CHOICE

1. Use ROOFTOP SOLAR panels to replace fossil fuels ……11%
2. Use large SOLAR FARMS to replace fossil fuels ……11%
3. Use NUCLEAR energy to replace fossil fuels ……33%
4. Use ON-LAND WIND energy to replace fossil fuels …….. 9%
5. Use OFFSHORE WIND energy to replace fossil fuels …… 12%
6. Use FOSSIL FUELS, capturing the emissions before they are released into the atmosphere……. 25%

98. Not Sure……<1%

SECOND CHOICE

1. Use ROOFTOP SOLAR panels to replace fossil fuels …….. 6%
2. Use large SOLAR FARMS to replace fossil fuels ……12%
3. Use NUCLEAR energy to replace fossil fuels ……16%
4. Use ON-LAND WIND energy to replace fossil fuels …….. 14%
5. Use OFFSHORE WIND energy to replace fossil fuels …… 22%
6. Use FOSSIL FUELS, capturing the emissions before they are released into the atmosphere…… 28%

98. Not Sure…… 2%

Q27: One way of addressing climate change is to put a carbon tax on fuels such as coal, oil and natural gas. This approach targets high-emission sources and ensures that carbon pollution is reduced at the lowest cost.

Another approach is to spend large amounts of government money to fund tax credits and rebates for clean energy technologies like solar panels, wind turbines, heat pumps and electric vehicles.

This approach targets new technologies and encourages their adoption through government spending.

Of the two approaches, which do you prefer the government take? (READ OPTIONS)

1. Tax carbon emissions through a carbon tax……25%
2. Spend government money to finance clean energy technology…….. 58%

98. Not Sure (VOLUNTEERED)…… 17%

Q28: Gases such as methane have relatively short time periods in the atmosphere but are more powerful in trapping energy than carbon dioxide which stays in the atmosphere for much longer periods of time. In terms of climate policy in the United States, should gases like methane be: (READ LIST)

1. More of a priority than carbon dioxide……16%
2. Less of a priority than carbon dioxide……22%
3. An equal priority to carbon dioxide……54%
98. Not Sure (VOLUNTEERED)…….. 8%

Q29: Finally, a few questions about yourself. Which of the following categories best describes your racial identity? Are you… **[READ LIST]**

White/Caucasian…….. 60%
African-American……12%
Hispanic.……..15%
Latino …… 3%
Asian…….. 5%
Native American…….. 1%
Mixed race..…… 4%
Other ……..……1%

Q30: Which of the following categories best describes your religious affiliation? Are you… **[READ LIST]**

Protestant…….. 33%
Catholic…….. 23%
Jewish..... 3%
Muslim …… <1%
Hindu…….. 1%
Other religion (including agnostic)……. 33%
Atheist..…….. 7%
Not Sure (Volunteered)…….. <1%

Q31: Which of these statements comes closest to describing your feelings about the Bible? **[READ LIST]**

The Bible is the actual word of God and is to be taken literally, word for word…….20%
The Bible is the inspired word of God but not everything in it should be taken literally, word for word ……52%
The Bible is an ancient book of fables, legends, history,

and moral precepts recorded by men……25%
Not Sure (Volunteered)…… 3%

Q32: What is your highest level of education? **[READ LIST]**

Less than High School Graduate…… 4%
High School Graduate……27%
Some college or technical school……28%
College graduate……..26%
Graduate or professional degree……..15%

Q33: Which of the following best describes your political party affiliation? **[READ LIST]**

Democrat…… 33%
Republican……..27%
Other party…… 8%
Independent ……32%
Not Sure (Volunteered)……..<1%

Q34: Which of the following best describes your political beliefs? **[READ LIST]**

Very Conservative.....16%
Somewhat Conservative.....19%
Moderate.....39%
Somewhat Liberal.....17%
Very Liberal.....10%
Not sure (Volunteered) .....<1%

Q35: Which of the following categories best describes your family income? Is it… **[READ LIST]**

Less than 20,000……..12%
20,000-40,000……18%
40,000-60,000……..19%
60,000-80,000……16%
80,000-100,000…….11%
Over 100,000……24%
Not Sure (Volunteered) …… <1%

Q36: What is the zip code of your current residence? (Collected for additional research)

Q37: Finally, to which gender identity do you most identify? (READ LIST)

Male…… 49%
Female…… 51%
Transgender Male…. 0%
Transgender Female…. 0%
Or you do not identify as male or female .....<1%