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GLOBAL SURVEY ON YOUTH PERSPECTIVES ON CLIMATE CHANGE

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Global Survey on Youth Perspectives on Climate Change
Summary Report and Conclusions

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Abstract

Public opinion on societal changes is often influenced by media, political affiliation, gender, and age. Significant variations in weather is often cited as a key influence on whether a person believes that climate change is a result of human activity, natural variations, or both. The Global Survey on Youth Perspectives on Climate Change polled students ages thirteen to eighteen worldwide to determine what factors influence their beliefs on climate change. The original survey was conducted in 2017. The 2022 survey found that approximately half of the respondents support the idea that global warming and climate change is the result of both human activity and natural variations. The results also showed that the respondents base their beliefs on a combination of scientific research and data, as well as information publicly available on the Internet and on social media.

I. Introduction

Weather plays a central role in life on Earth. From our planet's physical environment to the actions and feelings of human beings, weather is an important factor in all we do and experience. Weather and climate, though, are different; weather is the "state of the atmosphere at a place and time with regard to heat, dryness, sunshine, wind, rain, etc.," ([The Geographer Online](#)) while climate is "the weather conditions prevailing in an area in general or over a long period of time." ([The Geographer Online](#)) The weather may also play a key role in shaping our view of global warming and climate change, but what factors influence a teenager's perspective on this crucial environmental issue?

The students in the senior elective Atmospheric Science at Marymount School of New York sought to answer this question by conducting the Global Survey on Youth Perspective of Climate Change. The goal of the survey was to determine if teenagers believe global warming and climate change is naturally induced, human induced, or both, as well as to uncover what local and global evidence leads teenagers to make their conclusions about the causes of changes in the Earth's average temperature.

The first iteration of this survey was conducted in late Fall 2017 with the results published in Spring 2018. In that iteration, a total of 675 respondents completed the survey. In general, the following conclusions were reached:

- Most respondents believe that there is solid evidence that the average temperatures on Earth have been increasing over the past century.
- Most respondents are confident or very confident that the average temperatures on Earth are increasing.
- Approximately one-half of the respondents believe that the increase in the Earth's temperature is due to both human activity and natural variations.
- Most respondents believe that warmer temperatures in their area are the best evidence that the Earth's average temperature is increasing.
- Globally, melting glaciers, rising sea levels, and warmer temperatures offer the best evidence that the Earth's average temperature is increasing.
- As most respondents believe that the Earth's average temperature is increasing, approximately one-fourth of the respondents are not sure what evidence would suggest that the Earth's average temperature is not increasing.
- Most respondents believe that there is sufficient evidence to support the hypothesis that the Earth's average temperature is increasing.
- Most respondents state that scientific research or data, the Internet, and teachers influence personal beliefs about global warming and climate change.
- There is general consensus that all parties are responsible for addressing the potential effects of climate change.
- Approximately four out of ten respondents support a carbon tax, while one in five respondents do not support a carbon tax.
- Approximately fifty-five percent of respondents believe that they are educated about global warming and climate change.

The 2017 report may be found at weather.marymountnyc.org.

As noted in the 2017 survey, there have been a number of surveys on the root causes of global warming and climate change. In a 2016 Gallup Poll, a majority of Americans (63%) say, "the weather in their local area this winter was warmer than usual." When asked what they think caused these abnormal temperatures, "most Americans say the shift was the result of human-induced climate change rather than normal variations." Moreover, "just about 10% of Americans say it was a colder winter than usual and 26% say the weather was about the same." (Source: [Gallup Poll](#))

In a 2015 Pew Research Center Poll, beliefs about global climate change remained fairly stable. "Roughly half of adults (49%) say climate change is mostly due to human activity; roughly three-in-ten say it is due to natural causes (31%); and another fifth say there is no solid evidence of warming (20%)," the survey notes. The poll results further suggest that, "the share saying human activity is the primary cause of climate change is about the same as Pew Research Center surveys in 2014 (50%) and 2009 (49%)."

The 2015 Pew Survey further concludes that "politics is the central factor in shaping people's beliefs about the effects of climate change, ways to address warming, and trust in climate scientists." The survey notes:

- Most liberal Democrats think negative effects from global climate change are likely.
- Most conservative Republicans say each of the six actions to address climate change would have small or negligible effects; most liberal Democrats believe each can make a big difference.
- Most support a role for climate scientists in climate policy decisions, though political groups differ relative priorities for scientists and the public in policy matters.
- There are wide opinion differences over whether scientists understand climate change. Liberal democrats are most likely to see widespread agreement among climate scientists.
- More than one third of Americans are deeply concerned about climate issues; their views about climate change and scientists differ starkly from the less concerned.
- In terms of media, 42% of Americans say the media do not take the threat of global climate change seriously enough, while 40% of Americans say reporters give too little attention to skeptics of global climate change.

(Source: [Pew Research](#))

In summer 2019, the *Washington Post* and the Kaiser Family Foundation conducted an online poll among a random national sample of 2,293 adults ages 18 and over, as well as 629 teenagers ages 13 to 17. As noted in the survey report, results from the full survey have a margin of sampling error of plus or minus three percentage points among adults and plus or minus five percentage points among teens. The samples were also weighted to match the geographic and demographic makeup of the U.S. overall, according to Census Bureau data. We have not included the adult responses below.

Q5a-1. Do you think human activity is or is not causing changes to the world's climate, including an increase in average temperature?	
Yes, human activity is causing climate to change	86%
No, human activity is not causing climate to change	14%
No opinion	0%

Note: To consider the response among those who say human activity is not causing climate to change, the sample size for teens is insufficient to report.

Q7c. Thinking about what is said in the news, in your view is the seriousness of climate change generally exaggerated, generally correct, or is it generally underestimated?	
Exaggerated	21%
Correct	47%
Underestimated	31%
No opinion	<1%

Q8. Are your views on climate change based more on your personal experiences and observations, or based on what you've heard or read?	
Based more on personal observations	36%
Based more on what you've heard or read	63%
No opinion	1%

Q11. How much do you feel you know about the causes of climate change	
A lot	20%
A moderate amount	44%
A little	32%
Nothing	4%
No opinion	<1%

Q11. How much do you feel you know about the ways to reduce the effects of climate change?	
A lot	15%
A moderate amount	40%
A little	38%
Nothing	7%
No opinion	<1%

Q11a. How much have you learned about the causes of climate change at school?	
A lot	17%
A moderate amount	37%
A little	36%
Nothing	11%
No opinion	<1%

Q11a. How much have you learned about ways to reduce the effects of climate change at school?	
A lot	14%
A moderate amount	31%
A little	39%
Nothing	15%
No opinion	<1%

Q14. Would you say that climate change is best described as a crisis, a major problem but not a crisis, a minor problem or is it not a problem at all?	
A crisis	39%
A major problem but not a problem	41%
A minor problem	15%
Not a problem at all	5%
No opinion	<1%

Source: [Kaiser Family Foundation](#)

II. Methodology

We began by reviewing current literature on global warming and climate change as well as researching existing surveys and studies on public opinion on both topics.

We reviewed the 2017 survey questions and made some adjustments to the order of the questions as well as the question language. The 2017 survey questions were based on the 2017 National Survey on Energy and Environment, developed by the University of Michigan Center for Local, State and Urban Policy. (Source: [NSEE](#))

The final list of demographic questions is shown in Table 1. The final list of opinion questions is shown in Table 2.

Table 1. Survey Questions	
Demographic Questions	
1. Name	
2. Age	
3. Grade	
4. School	
5. Location	
6. Email	

Table 2. Opinion Question	
Question	Responses
7. From what you have read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past century?	Yes No Not Sure
8. How confident are you that the average temperature on Earth is increasing?	Likert Scale (1 - 5) Not Very Confident → Very Confident
9. Is there sufficient evidence to support the hypothesis that the Earth's average temperature is increasing?	Yes No Maybe I Don't Know
10. Is the Earth getting warmer because of human activity such as burning fossil fuels, or mostly because of natural variations in the Earth's climate?	Human Activity Natural Variations Both Neither

11. What local evidence would lead you to conclude that the Earth's average temperature is increasing?	More droughts where I live More severe weather where I live Warmer temperatures where I live More precipitation where I live No local evidence Other
12. What global evidence would lead you to conclude that the Earth's average temperature is increasing?	More droughts More severe weather Warmer temperatures Glaciers are melting Sea levels are rising Plant and animal populations are being lost No global evidence Other
13. If you do not believe there is local or global evidence that the Earth's temperature is increasing, what leads you to that conclusion?	Natural patterns Personal observations Not enough evidence Evidence doesn't support the claim Misled by media Religious factors Political factors No particular reason Not sure
14. Which of these factors have influenced your understanding of global warming and climate change the most?	My parents My teachers My friends Internet Media coverage Science research or data Social media Observed changes in weather patterns Political affiliation Religious beliefs Other
15. Whom do you believe is primarily responsible for addressing the potential effects of global warming and climate change?	Individuals Local governments Federal government United Nations Other
16. Do you support a carbon tax?	Yes No Maybe Not sure

17. Do you believe you are educated about global warming and climate change?	Yes No Maybe Not sure
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After finalizing the list of questions, we used the following workflow:

1. We tested the survey for functionality.
 2. We generated a master email list, which included schools that participated in the 2017 survey as well as other schools worldwide with students that met our age parameters.
 3. We drafted an email template announcing the survey; that email was sent to all schools and students on the master email list.
 4. The survey description and link was posted on the following listservs: Independent School Educators' List (ISED-L); K-12 Fab Labs; STEMTeachersNYC; and ESPRIT for Earth Science Professionals.
 5. The survey description and link was posted on the Marymount Weather Website: weather.marymountnyc.org
 6. The survey was announced at various local and regional conferences and webinars.
 7. The survey was conducted as part of the 2022 Youth Climate Conference.
- The survey was open for the period of January 1 through March 15, 2022. Each survey response was reviewed for completeness and adherence to survey guidelines. Responses that were incomplete or did not meet survey parameters were not included.

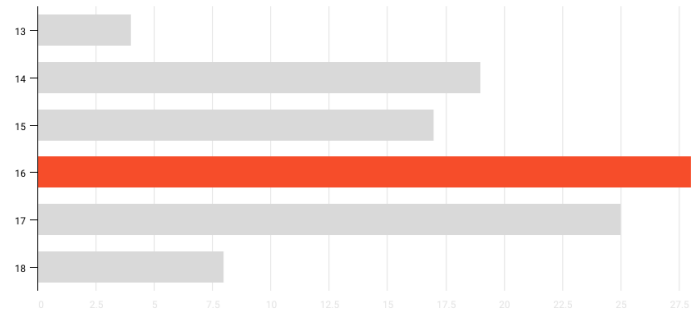
III. Results

A total of 475 respondents completed the survey. A demographic breakdown of respondents is shown below.

The locations and ages of the respondents are shown in demographic tables 1 and 2, respectively. All values are percentages.

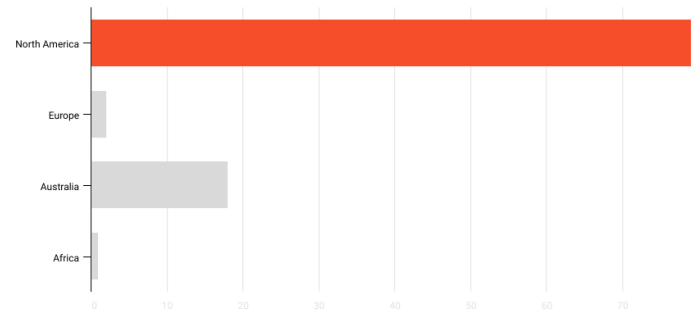
Demographic Question 1.

Age of Respondents (Survey Question 2)



Demographic Question 2.

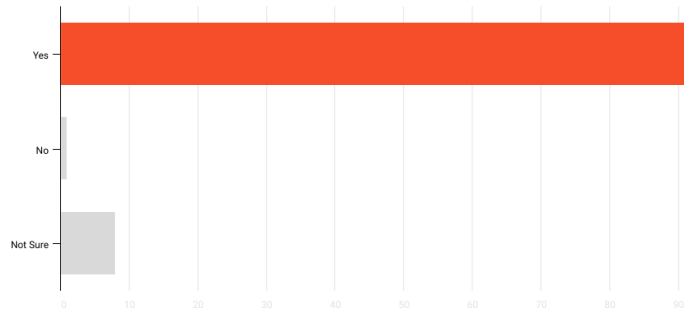
Location of Respondents (Survey Question 5)



Responses to individual questions are shown below. Correlation to the specific survey questions are included. All values are percentages. Some questions allowed for multiple responses. As a result, total percentages exceed one hundred.

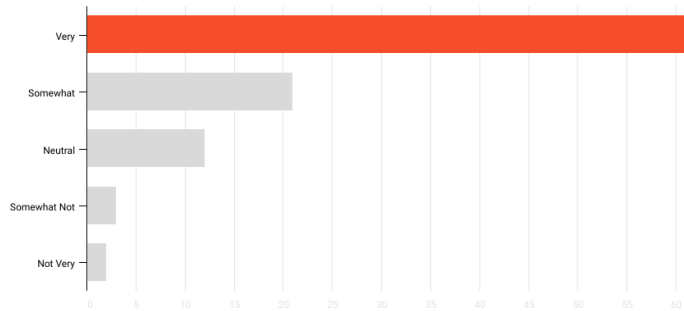
Question 1.

From what you have read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past century? (Survey Question 7)



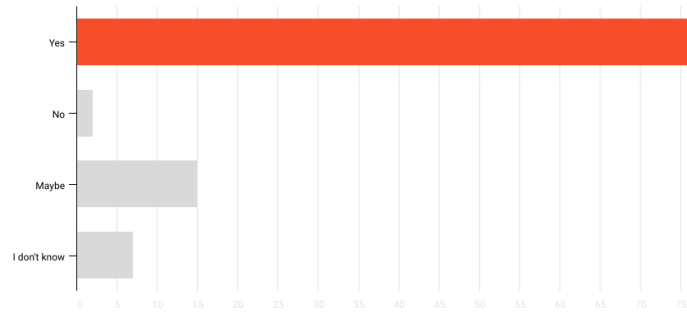
Question 2.

How confident are you that the average temperature on Earth is increasing? (Survey Question 8)



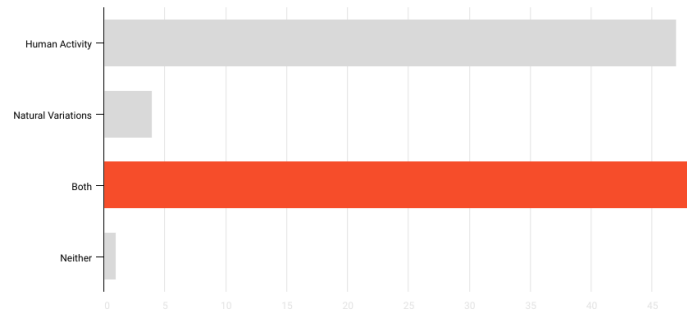
Question 3.

Is there sufficient evidence to support the hypothesis that the Earth's average temperature is increasing?
(Survey Question 9)



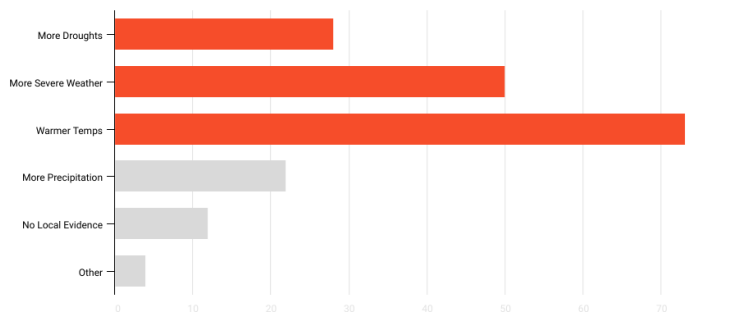
Question 4.

Is the Earth getting warmer because of human activity or mostly because of natural variations in the Earth's climate? (Survey Question 10)



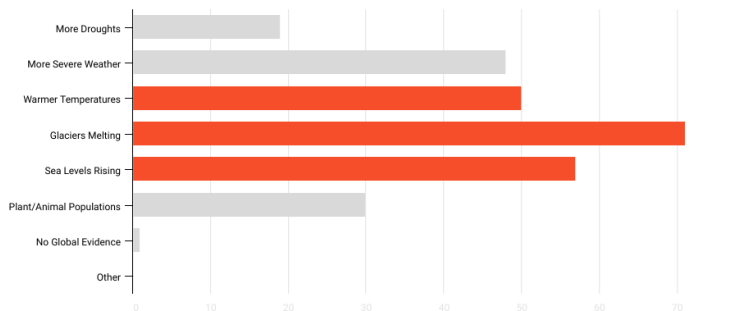
Question 5.

What local evidence would lead you to conclude that the Earth's average temperature is increasing? (Survey Question 11; multiple responses allowed)



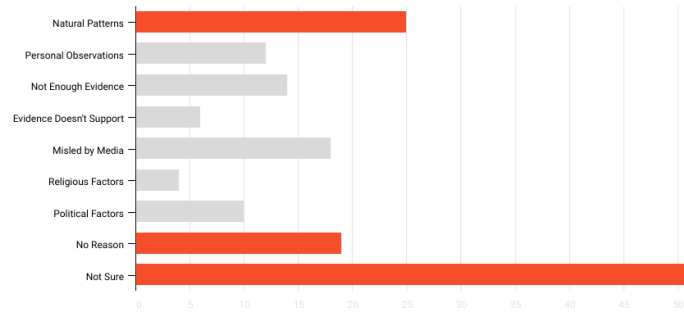
Question 6.

What global evidence would lead you to conclude that the Earth's average temperature is increasing? (Survey Question 1; multiple responses allowed)



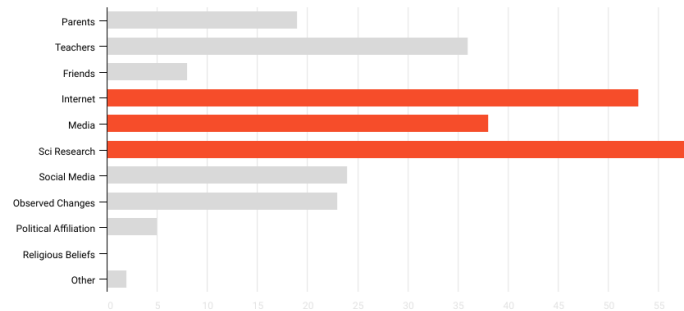
Question 7.

If you do not believe there is local or global evidence that the Earth's temperature is increasing, what leads you to that conclusion? (Survey Question 13; multiple responses allowed)



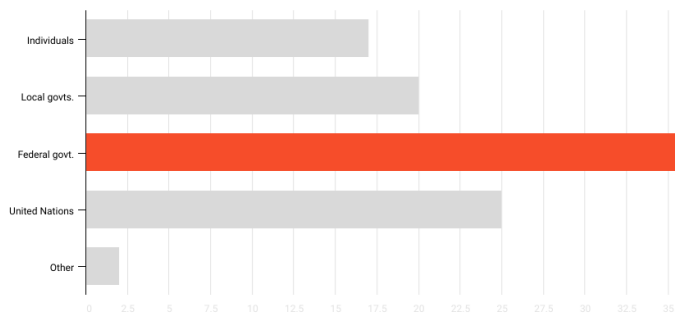
Question 8.

Which of these factors have influenced your understanding of global warming and climate change the most? (Survey Question 14; multiple responses allowed.)



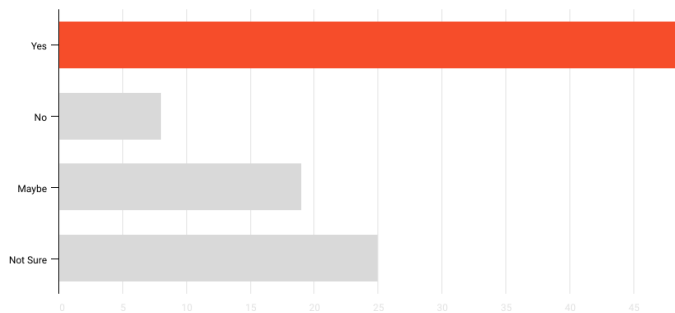
Question 9.

Whom do you believe is primarily responsible for addressing the potential effects of global warming and climate change? (Survey Question 15)



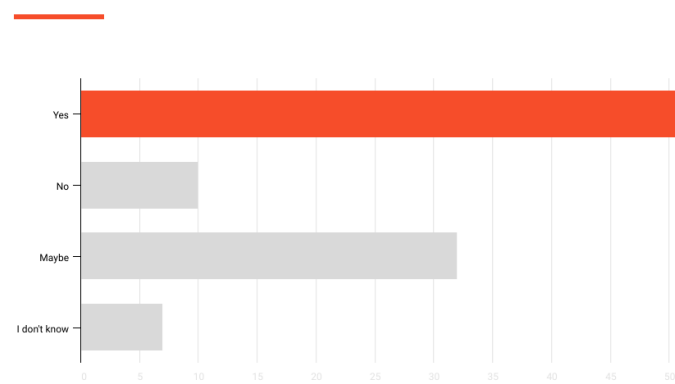
Question 10.

Do you support a carbon tax? (Survey Question 16)



Question 11.

Do you believe you are educated about global warming and climate change? (Survey Question 17)



IV. Conclusions

A. 2022 Results

In general, the following conclusions were reached about student perspectives on global warming and climate change.

- The majority of respondents (91%) said that they have read and heard that there is evidence that the average temperature on Earth has been getting warmer.
- The majority of respondents (62%) are very confident that the average temperature on Earth is increasing while 21% are somewhat confident.
- Over three quarters of the respondents believe that there is sufficient evidence to support the hypothesis that the average temperature on Earth is increasing.
- Almost fifty percent of respondents believe that the earth is getting warmer as a result of both human activity and natural variations in the Earth's climate.
- Almost three quarters of respondents noted that warmer local temperatures led them to conclude that the Earth's average temperature is increasing while more than half of the respondents added that there is more severe weather reported where they live.
- There are multiple strands of evidence, on a global scale, that suggest a changing climate, including more severe weather, warmer temperatures, rising sea levels, and melting glaciers.
- For respondents who do not believe there is local or global evidence that the Earth's temperature is increasing, only 25% suggested natural reasons, while 20% replied that "being misled by the media." A greater proportion of respondents stated they were "not sure," or there was "no reason" for their conclusion.
- Similar to the 2017 survey results, scientific research or data, the Internet and social media, and teachers influence students beliefs on global warming and climate change the most?

- Respondents believe that the federal government and the United Nations bear the greatest responsibility in addressing the potential effects of global warming and climate change while individuals bear the least responsibility.
- Almost fifty percent of the respondents support a carbon tax.
- Almost fifty percent of the respondents believe that they are educated about the primary issues associated with global warming and climate change.

B. Comparison to 2017 Results

While 2017 and 2022 surveyed different populations, the influence of youth actions and advocacy may be seen in a comparison of results.

- The percent of respondents who stated that “from what they read and heard, there is solid evidence that the average temperature on Earth has been getting warmer” increased from 86% to 91%.
- Respondents’ confidence level (very confident) increased from 43% to 61%.
- There was a 10% increase in respondents stating that there is sufficient evidence to support the hypothesis that the Earth’s average temperature is increasing (65% to 76%)
- Belief that changes in climate are a result of human activity increased from 41% to 47% while the percentage of respondents who stated that climate change is the result of both human activity and natural variations dropped from 51% to 47%.
- There was a significant increase in warmer temperatures (60% to 73%) and increased severe weather (38% to 50%) as local evidence for increases in the Earth’s average temperature.
- Melting glaciers, rising sea levels, and warmer temperatures continue to be the best evidence that temperatures are rising on a global scale.
- Respondents continue to look to science research, the internet, media coverage, and their teachers as information sources to develop their understanding of climate change.
- For those who do not believe there is local or global evidence, respondents point to either natural patterns or “not sure” as their reason. These responses did not change in percentage or rank from 2017.
- Respondents still believe that their federal government remains primarily responsible for addressing the potential effects of climate change.
- Support for a carbon tax increased significantly from 2017.
- A significant percentage of respondents believe they are educated about climate change.

C. Comparison to 2019 NSEE

As with the 2017 survey, the results of the 2022 survey are relatively similar to the results from the Center for Local, State, and Urban Policy at the University of Michigan’s National Surveys of Energy and Environment (NSEE), an “on-going biannual national opinion survey on energy and climate policy.” In the 2019 survey, researchers found the following:

- Seventy-one percent of respondents believe there is solid evidence that the average temperature on Earth has been increasing.
- Almost sixty-seven percent of respondents are fairly confident or very confident that the average temperature on Earth has been increasing.
- Only twenty-seven percent of respondents believe that the increase in temperature is caused by a combination of human activity and natural patterns. This is significantly different from our survey results.
- Thirty-four percent of respondents believe that human activity is the primary “cause” of global warming and climate change.
- Ten percent of respondents stated that natural patterns are the primary “cause” of global warming and global warming.
- Thirty-eight percent of respondents have the perception that their local weather during the previous summer was a lot warmer than or slightly warmer than usual.

(Source: [University of Michigan NSEE Report](#))

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V. Authors

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