

PERCEPTIONS OF EXTREME WEATHER AND CLIMATE CHANGE IN VIRGINIA

A STATEWIDE SURVEY OF ADULTS

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July 2013

This research was funded, in part, by the National Science Foundation

Award # DUE-1043235



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Center for Climate Change Communication
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CENTER FOR CLIMATE CHANGE COMMUNICATION
GEORGE MASON UNIVERSITY

Overview

The following report contains the findings of a survey conducted in March 2013 among adults in Virginia who watch local TV news at least once per week; results may not be generalizable to individuals who do not watch local TV news. Participants were surveyed about their perceptions of extreme weather in Virginia, their knowledge, attitudes, beliefs and experience with climate change, and a variety of related issues. Survey participants were contacted by via telephone using random digit dialing, and were selected to be in the study only if they were over 18 years of age and indicated that they watch local TV news at least once per week. A total of 2,000 respondents completed the survey, with interviews conducted in English and Spanish on both landline telephones and cell phones, with a response rate of 12% (details on the sampling and weighting methods for the survey can be found in the Method section).

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General Findings

Many Virginians think that extreme weather events are becoming more frequent in Virginia, and that climate change is a cause.

A majority of survey respondents reported that extremely hot days (60%) and intense storms (53%) are becoming more frequent in Virginia, and almost half (43%) felt that severe droughts were becoming more frequent. Conversely, relatively few said that these events were becoming less frequent (12%, 12% and 15%, respectively). Of those respondents who said that extreme weather events are becoming more frequent, a large majority believes that climate change is the major cause (28%), or one of many causes (51%).

Most Virginians think climate change is happening.

A large majority of respondents reported that climate change is happening (85%), and that it is caused either mostly by human activity (31%) or by a combination of human activity and natural changes in the environment (36%). Fewer – about half (53%) – are certain of their convictions, however, reporting that they are “very” or “extremely” sure that climate change is happening.

Climate change is a personally relevant issue to many Virginians, although few say they know a lot about it.

A large majority of respondents say that climate change is at least somewhat personally important to them (74%), and about half believe they have personally experienced the effects of climate change (51%). Fewer – although still a large minority – are (somewhat or very) worried about climate change (49%), think climate change is currently harming or will harm people in Virginia within the next 10 years (49%), and think they will be personally harmed by climate change (a moderate amount or great deal; 44%). The majority of respondents have thought about climate change “some” (32%) or “a lot” (26%), although few feel they know “a lot” about it (19%).

Most Virginians trust scientists about climate change, but only a minority understand that almost all scientists are convinced that human-caused climate change is happening.

The majority of respondents trust scientists (85%), their local TV meteorologists (77%), and the mainstream news media (61%) as sources of information about climate change. Only a minority, however, believe that most scientists think climate change is happening (43%) while about one third (34%) think there is a lot of

disagreement among scientists about whether or not climate change is happening, and nearly a quarter (23%) responded that they don't know enough to say.¹

Virginians' views of extreme weather and climate change differ based on their gender, age, level of education, location, and political party affiliation.

In general, women, more educated adults, middle-aged adults, and those living in urban areas are somewhat more likely to think that human-caused climate change is happening, believe it is important, and are aware of the widespread agreement among scientists that human-caused climate change is occurring. There are large differences in the views of Democrats and Republicans, with the views of Independents tending to fall in between. Additional information about differences between groups is presented below.

Key Differences between Women and Men

Women are more likely to perceive climate change impacts than men.

Women are more likely than men to believe that climate change is happening (86% vs. 83%), to be (very or somewhat) worried about climate change (51% vs. 46%), and to be (extremely or very) sure that they have personally experienced the effects of climate change (48% vs. 36%). As compared to men, they think that climate change is more likely to harm them personally (a great deal or a moderate amount; 50% vs 38%) and that it is more likely to harm Virginians now (35% vs. 27%) or in the next 10 years (21% vs. 14%).

Women are also more likely than men to believe climate change is a (somewhat, very, or extremely) important issue (77% vs. 71%), to trust scientists (87% vs. 83%), the mainstream media (65% vs. 55%), and TV meteorologists (79% vs. 73%), and they are less likely to believe there is disagreement among scientists on climate change (29% vs. 39%). They are more likely than men to think that intense storms are becoming more frequent in Virginia (60% vs. 46%).

Despite this, men are more likely than women to say that they have thought a lot about climate change (29% vs. 23%) and that they know a lot about the issue of climate change (26% vs. 13%).

Key Differences between Younger and Older Adults

Young adults are most certain about human-caused climate change.

Young adults (ages 18-35) are more likely than middle-aged and older adults to be certain that climate change is happening (94% vs. 82% and 79%), and to think that it is human-caused (34% vs. 32% and 27%).

¹ Several recent studies – published in leading science journals – have concluded that 97% or more of climate science experts are convinced that human-caused climate change is occurring.

They are also more trusting of scientists than older adults (90% vs. 85% and 80%). Along with middle-aged adults, they are more likely than older adults to believe climate change is a major cause of Virginia's changing weather (30% and 30% vs. 24%), and are somewhat more likely than older adults to be worried about climate change (49% and 50% vs. 47%).

Middle-aged adults may know more about climate change.

Middle-aged adults (ages 36-55) are the most likely to report knowing (some or a lot) about climate change (73% vs. 66% and 67%), and to correctly report the scientific consensus on climate change (45% vs. 41% and 38%). This group is also most likely to report that they have personally experienced climate change (54% vs. 49% and 47%).

Along with older adults, middle-aged adults are more likely to have thought (some or a lot) about climate change previously (59% and 59% vs. 52%). Both older and middle-aged adults perceive much more frequent hot days in Virginia (21% and 23% vs. 18%), although only middle-aged adults perceive a greater frequency of droughts (15% vs. 7% and 12%).

Older adults are less likely to see a link between changes in Virginia's weather and climate change.

As mentioned previously, older adults, along with middle-aged adults, perceive a greater frequency of hot days, and have previously thought about climate change. However, they are most likely to believe that climate change is not happening and to be not at all worried about climate change, and are least likely to think climate change is human-caused or is a major factor in Virginia's changing weather.

Key Differences between Less and More Educated Adults

More educated adults are generally the most knowledgeable about climate change.

Adults who have a 4 year college degree, or higher, are the most likely to think that climate change is human-caused (36% vs. 28% and 30%), compared to those with high school or some college education, respectively. They are the group most likely to report thinking (some or a lot) about climate change in the past (66% vs. 51% and 61%), and to be very worried about climate change (18% vs. 10% and 14%). They are also the group most likely to report knowing a lot about climate change (27% vs. 13% and 19%) and to accurately report the scientific consensus on climate change (58% vs. 35% and 45%). However, the majority of college graduates are the least likely group to trust TV meteorologists (73% vs. 79% and 77%) and the mainstream news media (54% vs. 67% and 58%).

Adults with some college education or more are more likely than those who have completed high school or less to see climate change as an extremely important issue (12% and 10% vs. 6%). Both of these groups are less likely to perceive a decreased frequency of hot days in Virginia (8% and 8% vs. 14%) and more likely to believe that climate change is a major cause of Virginia's changing weather (34% and 32% vs. 21%). However, those with some college experience are most likely to feel extremely or very certain that they have personally experienced the effects of climate change (52%) compared to those with college degrees (46%) and high school education (43%).

Adults with less education have more experience with the weather and are more likely to believe climate change is happening.

Adults with a high school degree or less are slightly more likely than higher educated adults to believe that climate change is happening. They are most likely to spend time outside every day (average = 5.1 vs. 4.6 and 2.4 hours per day), and are the group most likely to trust the mainstream news media (66% vs. 56% and 57%) and TV meteorologists (79% vs. 77% and 73%). They are also most likely to perceive extreme changes in Virginia's weather and, along with those who have a college education, are most likely to pay a lot of attention to weather forecasts (67% and 67% vs. 57%). However, this group is the least likely to be worried about climate change or to see their local weather as influenced by climate change.

Key Differences between Urban and Rural Dwellers

Urban residents perceive more climate change impacts.

Those living in more urban areas (where the population density is greater than 817 people per square mile) are more likely than those in rural areas to be certain that climate change is happening (89% vs. 81%) and that it is human caused (70% vs. 63%). They are more likely to perceive climate change to be an (extremely or very) important issue (38% vs. 33%), to be (very or somewhat) worried about climate change (55% vs. 46%), and to believe it will harm people in Virginia now or in the next 10 years (51% vs. 48%). Urban residents perceive a greater frequency of hot days (24% vs. 19%) and intense storms (21% vs. 17%), and are more likely to trust scientists (86% vs. 83%) and accurately report the scientific consensus on climate change (46% vs. 39%), compared to rural residents.

Rural residents are more exposed to the weather, but are less likely to see climate change as a problem

Those living in more rural areas (where the population density is less than 305 people per square mile) are more likely than those in urban areas to spend time outdoors on the weekends (average 5.9 vs. 5.2 hours per day), and to perceive a (much or somewhat) greater frequency of severe droughts in Virginia (50% vs. 40%). While they are more likely than urban residents to report knowing a lot about climate change (20% vs. 17%), they are less likely to perceive climate change as a problem.

Those living in areas where the population density is between 305 and 817 people per square mile were not included in these analyses, and make up 14% of the sample population.

Key Differences between Democrats, Independents, and Republicans

Democrats are the group most likely to think the climate is changing.

Democrats are more likely than Independents and Republicans to be convinced that climate change is happening (95% vs. 82% and 73%) and that it is human-caused (75% vs. 69% and 50%). They also believe climate change is an (extremely or very) important issue (47% vs. 33% and 17%) and are the group most likely to be very worried about it (21% vs. 11% and 3%). They are most likely to feel that they have personally experienced climate change (59% vs. 48% and 40%), and to believe that climate change will harm them personally (a great or moderate amount; 57% vs. 41% and 30%) and will harm people in Virginia now or in the next 10 years (60% vs. 44% and 38%). Democrats are more likely than Independents and Republicans to trust scientists (92% vs. 83% and 78%), the mainstream news media (76% vs. 55% and 48%), and TV meteorologists (89% vs. 69% and 72%), and are more likely to correctly report that there is scientific consensus on climate change (51% vs. 40% and 33%). They are more likely than other groups to perceive extreme weather in Virginia is increasing in frequency, especially extremely hot days (67% vs. 52% and 56%) and intense storms (61% vs. 48% and 48%).

Independents tend to be centrists on climate change issues.

While Independents tend to stay middle of the road for many climate change issues compared to Democrats and Republicans, when they do align with members of another political party it is almost always with Democrats. Independents and Democrats are the groups most likely to report knowing a lot about climate change (21% and 19% vs. 13%) and thinking a lot about climate change (28% and 32% vs. 13%), as compared to Republicans.

Republicans do not interpret weather changes as related to climate change.

Compared to Democrats and Independents, Republicans are most likely to believe that climate change is *not* happening (25% vs. 4% and 16%), to think it is not at all an important issue (17% vs. 4% and 10%), and to see changes in Virginia's weather as unrelated to climate change (23% vs. 10% and 18%). They are the group that has thought about climate change the least and feels like they know the least about it. For information about climate change, Republicans are the least likely group to trust scientists, the mainstream news media, and are less likely than Democrats to trust TV meteorologists. They also are less likely to accurately report the scientific consensus on climate change.

Detailed Survey Responses²

How often do you watch local news on TV?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Once a week	19%	19%	19%	34%	20%	7%	20%	16%	21%	21%	16%	20%	16%	21%
More than once a week	30%	30%	29%	36%	33%	22%	24%	34%	33%	31%	28%	29%	31%	29%
Every day	52%	51%	53%	31%	47%	71%	57%	50%	46%	48%	56%	52%	54%	49%

When you watch local news on TV, how much attention do you pay to weather forecasts? Would you say...

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
A lot	64%	66%	61%	51%	69%	68%	67%	67%	57%	63%	67%	64%	61%	68%
A moderate amount	27%	26%	28%	34%	22%	26%	24%	26%	30%	27%	25%	26%	27%	25%
A small amount	8%	7%	10%	15%	7%	5%	7%	7%	12%	9%	7%	8%	10%	6%
Not at all	1%	1%	2%	1%	2%	1%	2%	1%	1%	1%	2%	2%	1%	1%

² 2000 total participants took part in the survey, although approximately 1-2% of the total pool of participants did not answer various questions, including demographic questions. Gender: female N = 1186 (59% of sample); male N = 814 (41 % of sample). Age: 18-35 N = 268 (14% of sample); 36-55 N = 631 (32% of sample); 56+ N = 1043 (52% of sample). Education: high school or less N = 579 (29% of sample); some college N = 521 (26% of sample); college graduates or more N = 892 (45% of sample). Population density: high density N = 889 (45% of sample); low density N = 827 (41% of sample). Political party: democrat N = 655 (33% of sample); independent N = 698 (35% of sample); republican N = 490 (25% of sample); no party N = 56 (3% of sample).

Are extremely hot days becoming more or less frequent in Virginia compared to the past? Would you say they are becoming much more frequent, somewhat more frequent, somewhat less frequent, much less frequent, or you haven't noticed any change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Much more frequent	22%	24%	18%	18%	23%	21%	19%	25%	19%	24%	19%	29%	18%	16%
Somewhat more frequent	38%	39%	37%	34%	37%	41%	38%	37%	38%	37%	40%	38%	34%	40%
Somewhat less frequent	10%	13%	8%	17%	9%	7%	25%	27%	34%	11%	9%	11%	12%	8%
Much less frequent	2%	2%	3%	5%	1%	2%	14%	8%	8%	3%	3%	4%	2%	1%
Haven't noticed any change	28%	23%	34%	26%	30%	29%	4%	2%	1%	25%	30%	18%	34%	36%

How about severe droughts? Would you say severe droughts in Virginia have become much more frequent, somewhat more frequent, somewhat less frequent, much less frequent than in the past, or you haven't noticed any change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Much more frequent	11%	11%	12%	7%	15%	12%	13%	11%	10%	11%	13%	14%	10%	9%
Somewhat more frequent	32%	34%	29%	30%	31%	34%	32%	31%	33%	29%	37%	40%	31%	32%
Somewhat less frequent	12%	12%	13%	15%	12%	11%	13%	14%	9%	14%	10%	14%	43%	13%
Much less frequent	5%	5%	5%	4%	5%	5%	6%	4%	3%	5%	4%	4%	9%	4%
Haven't noticed any change	40%	38%	42%	44%	38%	38%	36%	40%	46%	41%	36%	34%	7%	42%

How about intense storms like heavy downpours? Would you say such intense storms in Virginia have become much more frequent, somewhat more frequent, somewhat less frequent, much less frequent than in the past, or you haven't noticed any change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Much more frequent	19%	23%	15%	20%	19%	19%	22%	20%	15%	21%	17%	26%	16%	14%
Somewhat more frequent	34%	37%	31%	33%	37%	31%	32%	33%	39%	34%	36%	35%	32%	34%
Somewhat less frequent	10%	8%	13%	13%	7%	12%	13%	10%	7%	9%	12%	12%	10%	8%
Much less frequent	2%	2%	3%	3%	3%	2%	4%	1%	2%	3%	2%	3%	2%	2%
Haven't noticed any change	36%	30%	39%	31%	37%	37%	30%	36%	38%	33%	33%	25%	39%	42%

Normally, about how many hours do you spend outdoors on an average WEEK-END day?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
0-2 hours	22%	30%	13%	16%	19%	29%	20%	23%	25%	23%	20%	25%	19%	25%
3-5 hours	40%	45%	34%	45%	38%	39%	37%	36%	48%	40%	38%	45%	40%	37%
6-8 hours	23%	19%	29%	22%	24%	24%	25%	27%	17%	23%	25%	19%	27%	23%
9-11 hours	7%	3%	12%	8%	10%	8%	10%	6%	6%	9%	7%	7%	7%	8%
12 hours or more	8%	3%	11%	9%	10%	7%	8%	8%	4%	5%	10%	4%	10%	7%

Normally, about how many hours do you spend outdoors on an average WEEK DAY?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
0-2 hours	51%	63%	37%	46%	53%	52%	39%	53%	67%	52%	47%	55%	50%	52%
3-5 hours	27%	26%	28%	27%	26%	29%	31%	25%	24%	27%	28%	25%	28%	27%
6-8 hours	12%	7%	18%	15%	10%	12%	16%	12%	6%	11%	14%	10%	12%	12%
9-11 hours	5%	2%	9%	6%	6%	4%	7%	5%	2%	5%	6%	6%	5%	4%
12 hours or more	5%	2%	8%	7%	6%	3%	7%	5%	2%	5%	5%	5%	6%	5%

Recently, you may have noticed that CLIMATE CHANGE has been getting some attention in the news. Climate change 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 climate change is happening?

[Those that responded “Yes” were then asked: “How sure are you that climate change is happening” and those that responded “No” were then asked: “How sure are you that climate change is not happening?”]

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Yes (net)	85%	86%	83%	94%	82%	79%	86%	83%	83%	89%	81%	95%	82%	73%
Extremely sure	26%	23%	27%	28%	26%	22%	21%	28%	28%	27%	23%	32%	25%	13%
Very sure	27%	29%	24%	27%	27%	27%	26%	27%	28%	30%	24%	35%	2%	19%
Somewhat sure	29%	30%	26%	34%	26%	27%	34%	24%	26%	28%	29%	25%	29%	35%
Not at all sure	4%	3%	5%	5%	3%	4%	6%	3%	3%	4%	5%	4%	4%	5%
Don't Know	2%	2%	1%	1%	2%	2%	2%	1%	2%	1%	3%	1%	2%	2%
No (net)	13%	12%	16%	5%	16%	19%	12%	16%	15%	10%	17%	4%	16%	25%
Extremely sure	2%	2%	3%	0	3%	4%	2%	3%	3%	2%	4%	1%	3%	5%
Very sure	3%	2%	4%	2%	3%	4%	2%	3%	5%	3%	4%	0	4%	6%
Somewhat sure	6%	5%	7%	2%	8%	7%	5%	7%	6%	4%	7%	1%	8%	11%
Not at all sure	2%	3%	1%	2%	1%	4%	2%	3%	1%	2%	2%	2%	1%	3%

%

Assuming climate change is happening, do you think it is..

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Caused mostly by human activities	31%	30%	32%	34%	32%	27%	28%	30%	36%	33%	29%	43%	29%	18%
Caused mostly by natural changes in the environment	22%	20%	23%	20%	24%	21%	24%	23%	16%	21%	22%	16%	20%	33%
Caused more or less equally by human activities and changes in the environment	36%	37%	32%	41%	32%	33%	33%	35%	38%	37%	34%	32%	40%	32%
Caused by other things	2%	2%	2%	2%	1%	3%	3%	3%	1%	2%	3%	2%	1%	4%
None of the above because global warming isn't happening	7%	7%	9%	2%	8%	11%	9%	6%	8%	6%	9%	4%	8%	12%
Don't know	2%	3%	2%	.5%	3%	4%	3%	2%	1%	2%	3%	2%	2%	2%

How worried are you about climate change? Are you...

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Very worried	13%	13%	13%	10%	15%	13%	10%	14%	18%	15%	12%	21%	11%	3%
Somewhat worried	36%	38%	33%	40%	34%	34%	37%	33%	37%	40%	34%	42%	38%	28%
Not too worried	27%	29%	26%	31%	27%	26%	27%	29%	26%	27%	27%	21%	26%	35%
Not at all worried	23%	21%	28%	19%	24%	28%	26%	24%	21%	19%	28%	16%	25%	34%

Previously, you mentioned that the weather here in Virginia is changing. Do you think that climate change is the major cause of that change, one of many causes of the change, or do you think that the change in the weather is not related to climate change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Climate change is the major cause	28%	25%	31%	30%	30%	24%	21%	34%	32%	29%	28%	34%	27%	19%
Climate change is one of many causes	51%	56%	45%	56%	51%	47%	53%	49%	50%	51%	50%	51%	50%	52%
The change in weather is not related to climate change	16%	14%	18%	13%	14%	21%	19%	14%	13%	16%	16%	10%	18%	23%
Don't know	3%	5%	3%	0	3%	7%	4%	3%	2%	3%	4%	4%	2%	5%

How much do you think climate change will harm you personally? Would you say...

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
A great deal	13%	13%	13%	12%	15%	11%	13%	15%	10%	13%	14%	16%	12%	8%
A moderate amount	31%	37%	25%	29%	31%	32%	30%	32%	32%	32%	31%	41%	29%	22%
Only a little	33%	32%	32%	41%	29%	30%	36%	30%	30%	35%	29%	30%	32%	36%
Not at all	24%	18%	31%	19%	25%	27%	21%	23%	29%	20%	26%	13%	27%	34%

When, if ever, do you think climate change will start to harm people in Virginia? Would you say people are being harmed now, that people will be harmed 10 years from now, 25 years from now, 50 years from now, 100 years from now or more, or that people in Virginia will never be harmed by climate change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Now	31%	35%	27%	27%	32%	32%	28%	32%	34%	31%	33%	36%	29%	24%
In 10 years	18%	21%	14%	19%	17%	18%	21%	16%	15%	20%	15%	24%	15%	14%
In 25 years	16%	16%	15%	19%	15%	14%	17%	15%	14%	18%	12%	20%	14%	13%
In 50 years	13%	11%	14%	16%	11%	11%	12%	15%	10%	13%	12%	10%	14%	14%
In 100 years or more	12%	7%	17%	15%	12%	10%	11%	12%	13%	10%	13%	6%	15%	17%
Never	11%	9%	14%	5%	13%	15%	12%	10%	13%	7%	16%	5%	13%	19%

How much had you thought about climate change before today? Have you thought about it...

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
A lot	26%	23%	29%	19%	26%	30%	21%	27%	33%	25%	26%	32%	28%	13%
Some	32%	33%	31%	33%	33%	29%	30%	34%	33%	33%	32%	28%	23%	33%
A little	30%	32%	28%	37%	30%	27%	33%	27%	30%	30%	29%	26%	38%	39%
Not at all	12%	12%	12%	11%	11%	14%	17%	13%	5%	12%	13%	14%	12%	15%

How important is the issue of climate change to you personally? Is it...

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Extremely important	9%	7%	11%	7%	10%	9%	6%	10%	12%	11%	7%	14%	6%	4%
Very important	26%	28%	24%	25%	26%	27%	26%	28%	23%	27%	26%	33%	27%	13%
Somewhat important	39%	42%	36%	46%	38%	35%	40%	39%	37%	38%	39%	38%	40%	40%
Not too important	17%	16%	19%	18%	17%	18%	18%	16%	19%	18%	18%	11%	18%	26%
Not at all important	9%	8%	11%	7%	10%	12%	10%	8%	10%	7%	11%	4%	10%	17%

How much would you say you, personally, know about the issue of climate change? A lot, some, not too much or nothing at all?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
A lot	19%	13%	26%	10%	22%	22%	13%	19%	27%	17%	20%	19%	21%	13%
Some	51%	53%	47%	56%	51%	45%	47%	53%	52%	50%	50%	51%	51%	49%
Not too much	26%	28%	24%	28%	24%	28%	32%	24%	20%	28%	25%	25%	24%	32%
Nothing at all	5%	6%	3%	6%	3%	6%	8%	4%	2%	5%	5%	5%	5%	6%

Which of the following statements would you say is the most accurate?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Most scientists think climate change is happening	43%	41%	43%	4%1	45%	38%	35%	45%	48%	46%	39%	51%	40%	33%
Most scientists think climate change is NOT happening	0.5%	0	1%	0	1%	1%	.5%	1%	1%	0.5%	0.5%	0	1%	1%
There is a lot of disagreement among scientists about whether or not climate change is happening	34%	29%	39%	35%	34%	32%	31%	33%	38%	30%	35%	21%	39%	43%
Don't know enough to say	23%	30%	17%	24%	20%	28%	33%	21%	13%	23%	25%	27%	19%	23%

Would you say you have personally experienced the effects of climate change, or not? How certain are you that you [have / have not] personally experienced the effects of climate change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Yes (net)	51%	51%	50%	49%	54%	47%	47%	55%	49%	51%	49%	59%	48%	40%
Extremely certain	26%	25%	28%	23%	32%	22%	22%	31%	26%	27%	25%	32%	25%	18%
Very certain	21%	23%	18%	23%	19%	20%	21%	21%	20%	21%	21%	24%	20%	17%
Somewhat certain	3%	3%	2%	2%	2%	3%	3%	2%	2%	2%	2%	3%	2%	3%
Not at all certain	1%	1%	1%	2%	0	1%	1%	1%	1%	1%	1%	1%	1%	2%
Don't Know	2%	2%	1%	2%	1%	2%	2%	2%	1%	1%	3%	2%	2%	2%
No (net)	47%	47%	50%	50%	44%	51%	51%	43%	49%	48%	48%	39%	50%	59%
Extremely certain	15%	12%	18%	13%	15%	17%	13%	15%	19%	13%	16%	8%	18%	23%
Very certain	17%	18%	15%	20%	16%	15%	16%	17%	18%	17%	15%	13%	18%	20%
Somewhat certain	9%	9%	10%	12%	8%	9%	12%	6%	9%	11%	9%	12%	7%	9%
Not at all certain	7%	7%	7%	5%	5%	11%	11%	5%	4%	7%	7%	7%	7%	7%

How much do you trust or distrust each of the following as a source of information about climate change?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Scientists														
Trust ³	86%	87%	83%	90%	85%	80%	85%	88%	87%	86%	83%	92%	83%	78%
Distrust	14%	12%	15%	9%	13%	16%	15%	12%	14%	11%	15%	6%	14%	19%
Mainstream news media														
Trust	61%	65%	55%	64%	57%	60%	67%	58%	54%	64%	58%	76%	55%	48%
Distrust	38%	34%	45%	36%	42%	39%	33%	42%	46%	36%	41%	23%	44%	51%
TV meteorologists and weather reporters														
Trust	77%	79%	73%	73%	78%	77%	79%	77%	73%	75%	78%	89%	69%	72%
Distrust	23%	20%	26%	26%	21%	21%	20%	23%	27%	24%	21%	10%	30%	28%

How many adults, age 18 and over, currently live in your household including yourself?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
1	17%	18%	15%	12%	13%	25%	19%	17%	13%	18%	16%	19%	19%	13%
2	52%	52%	51%	46%	53%	53%	46%	49%	62%	49%	53%	49%	52%	55%
3	22%	21%	23%	29%	24%	16%	25%	23%	17%	22%	22%	20%	23%	25%
4	8%	8%	8%	9%	9%	5%	7%	8%	8%	9%	6%	9%	5%	7%
5	1%	2%	1%	3%	1%	0.5%	1%	2%	1%	2%	1%	3%	1%	1%
6 or more	1%	0	2%	2%	0	1%	2%	0	1%	1%	0.5%	1%	1%	0

³ The answer “don’t know” was omitted from the table. Approximately 2-3% of respondents answered “don’t know” when asked about their trust in scientists, the news media, and TV meteorologists.

Generally speaking, do you think of yourself as a Republican, Democrat, or independent?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Republican	25%	25%	25%	20%	27%	27%	24%	27%	25%	21%	30%	--	--	100%
Democrat	34%	40%	25%	35%	30%	35%	31%	36%	33%	40%	27%	100%	--	--
Independent	38%	31%	47%	43%	39%	35%	40%	35%	41%	37%	38%	--	100%	--
No party affiliation	3%	3%	3%	2%	4%	3%	5%	2%	2%	3%	4%	--	--	--

Do you think of yourself as closer to the Republican Party or the Democratic Party?⁴

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Republican Party	39%	32%	43%	33%	39%	44%	32%	47%	40%	32%	42%	--	39%	--
Democratic Party	34%	37%	32%	43%	29%	30%	36%	29%	35%	41%	28%	--	36%	--
Neither	27%	31%	25%	25%	32%	26%	32%	24%	25%	27%	29%	--	26%	--

⁴Asked only of those who identified as “Independent” in the previous question, N = 733.

In general, do you think of yourself as...

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Very Liberal	10%	11%	7%	11%	9%	8%	8%	11%	10%	12%	7%	22%	4%	3%
Somewhat Liberal	19%	22%	15%	22%	19%	17%	17%	20%	20%	23%	17%	32%	16%	8%
Moderate	31%	32%	30%	33%	28%	31%	29%	30%	34%	32%	28%	29%	37%	22%
Somewhat Conservative	27%	22%	33%	25%	30%	27%	29%	27%	24%	22%	31%	13%	30%	41%
Very Conservative	14%	13%	15%	9%	14%	17%	17%	12%	12%	11%	17%	6%	12%	27%

Are you now employed full-time, part-time or not employed?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Full-time	45%	37%	53%	46%	65%	22%	34%	49%	56%	48%	42%	36%	47%	54%
Part-time	13%	14%	10%	20%	10%	9%	13%	13%	10%	13%	12%	15%	11%	10%
Not employed	43%	48%	37%	34%	25%	69%	53%	38%	34%	39%	46%	49%	42%	36%

What is your age? [categorized by group]

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
18-25	14%	12%	16%	50%	--	--	20%	13%	4%	16%	11%	15%	14%	9%
26-35	14%	12%	15%	50%	--	--	13%	15%	14%	17%	11%	14%	16%	13%
36-45	18%	19%	16%	--	48%	--	14%	18%	22%	16%	19%	18%	18%	16%
46-55	19%	19%	20%	--	52%	--	18%	20%	21%	19%	21%	16%	19%	23%
56-65	18%	19%	17%	--	--	49%	16%	18%	20%	16%	19%	18%	16%	19%
66-75	12%	13%	11%	--	--	33%	11%	12%	13%	10%	14%	13%	12%	13%
76 or older	6%	7%	6%	--	--	18%	8%	5%	6%	7%	6%	7%	5%	8%

Participant gender [as recorded by surveyor]:

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Female	54%	100%	--	48%	55%	57%	52%	57%	53%	53%	55%	65%	44%	54%
Male	46%	--	100%	52%	45%	43%	48%	43%	47%	47%	45%	35%	56%	46%

What is your race?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Caucasian	67%	68%	66%	55%	66%	77%	64%	65%	74%	54%	79%	45%	72%	90%
African American/Black	20%	20%	20%	24%	20%	17%	23%	22%	14%	27%	15%	43%	13%	2%
Asian or Pacific Islander	2%	2%	1%	1%	2%	1%	0	2%	4%	2%	0	2%	1%	1%
Hispanic	6%	5%	6%	12%	5%	2%	8%	6%	3%	10%	2%	6%	8%	3%
Other	4%	3%	5%	6%	4%	3%	4%	5%	4%	4%	3%	3%	5%	4%
No response	2%	2%	2%	2%	2%	1%	2%	2%	2%	3%	1%	1%	1%	1%

What is the highest level of school you have completed or the highest degree you have received?

	TOTAL	Gender		Age			Education			Population Density		Political Party Affiliation		
		Female	Male	18-35	36-55	56+	High School or Less	Some College	College Graduates	High	Low	Democrat	Independent	Republican
Less than high school	8%	2%	4%	3%	2%	5%	20%	--	--	7%	10%	3%	4%	3%
High school	32%	37%	40%	49%	34%	36%	79%	--	--	31%	37%	36%	37%	37%
Some college	20%	19%	20%	21%	19%	19%	--	63%	--	18%	21%	23%	19%	17%
Associate degree	12%	14%	9%	10%	13%	11%	--	37%	--	11%	11%	10%	15%	15%
Bachelor's degree	14%	14%	14%	11%	17%	13%	--	--	51%	15%	13%	14%	14%	14%
Postgraduate/ professional schooling	1%	1%	1%	2%	1%	1%	--	--	5%	1%	1%	1%	2%	2%
Postgraduate/ professional degree	13%	12%	13%	6%	14%	15%	--	--	45%	17%	7%	13%	13%	12%

Method

(Prepared by Princeton Survey Research Associates International)

The survey was conducted by Princeton Survey Research Associates International (PSRAI). Interviews were done in English and Spanish by Princeton Data Source from March 5 to 18, 2013.

Telephone interviews were conducted with a sample of 2,000 adults -- stratified by the state's seven media markets: Northern Virginia (suburbs of Washington, D.C.), Lynchburg-Roanoke, Richmond, Charlottesville, Harrisonburg, Norfolk-Portsmouth-Newport News, and the Tri-Cities area -- who watch local TV news at least once per week. Telephone interviews were conducted by landline (1,800) and cell phone (200). Statistical results are weighted to correct known demographic discrepancies.

Design and Data Collection Procedures

Sample Design

A combination of landline and cellular random digit dial (RDD) samples was used to represent adults in the current areas of Virginia who have access to either a landline or cellular telephone. Both samples were provided by Survey Sampling International, LLC (SSI) according to PSRAI specifications.

Within each market, numbers for the landline sample were drawn with equal probabilities from active blocks (area code + exchange + two-digit block number) that contained three or more residential directory listings. The cellular sample was not list-assisted, but was drawn through a systematic sampling from dedicated wireless 100-blocks and shared service 100-blocks with no directory-listed landline numbers.

Contact Procedures

Interviews were conducted from March 5 to 18, 2013. As many as five attempts were made to contact every sampled telephone number. Sample was released for interviewing in replicates, which are representative subsamples of the larger sample. Using replicates to control the release of sample ensures that complete call procedures are followed for the entire sample. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. Each phone number received at least one daytime call when necessary.

For the landline sample, interviewers asked to speak with the youngest adult male or female currently at home based on a random rotation. If no male/female was available, interviewers asked to speak with the youngest adult of the other gender.

For the cellular sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey.

For both landline and cellular samples, interviewers then confirmed the respondent lived in the state of VA and in one of the designated counties. Once the respondent consented to participating in the survey, they were asked about how often they watched local news on TV. All respondents who don't watch the local news were thanked and terminated from the survey.

Weighting and Analysis

Weighting is generally used in survey analysis to adjust for effects of the sample design and to compensate for patterns of nonresponse that might bias results. The weighting was accomplished in two stages to account for the

overlapping landline and cell sample frames and differential non-response associated with sample demographics. The weighting was performed on completed interviews plus cases that were screened-out as ineligible.

The first stage of weighting corrected for different probabilities of selection associated with the number of adults in each household and each respondent's telephone usage patterns.⁵ This weighting also adjusts for the overlapping landline and cell sample frames and the relative sizes of each frame and each sample. This weight was computed separately for each market.

After the first-stage weight adjustment, sample demographics for each market were raked to match population parameters. Samples were matched to population parameters for sex, age, education and race/ethnicity. The parameters were derived from the US Census Bureau's 2011 American Community Survey data.⁶ Post-stratification was done - by market - using Sample Balancing, a special iterative sample weighting program that simultaneously balances the distributions of all variables using a statistical technique called the *Deming Algorithm*. The raking corrects for differential non-response that is related to particular demographic characteristics of the sample. This weight ensures that the demographic characteristics of the sample closely approximate the demographic characteristics of the target population. Sample weights were adjusted so that the sum of the weights for each market equals the sample size.

Response Rate

Table 1 report the disposition of all sampled telephone numbers ever dialed from the original telephone number samples. The response rate estimates the fraction of all eligible sample participants that was ultimately interviewed and was calculated by taking the product of three component rates:⁷

- Contact rate – the proportion of working numbers where a request for interview was made⁸
 - Cooperation rate – the proportion of contacted numbers where a consent for interview was at least initially obtained, versus those refused
 - Completion rate – the proportion of initially cooperating and eligible interviews that were completed
- Thus the response rates for each group by sample are in the table below.
- Overall response rate – 2000 responses out of 16439 contacted numbers yields 12.2% total response rate.

⁵ i.e., whether respondents have only a landline telephone, only a cell phone, or both kinds of telephone.

⁶ ACS analysis was based on all adults excluding those living in institutional group quarters (GCs).

⁷ PSRAI's disposition codes and reporting are consistent with the American Association for Public Opinion Research standards.

⁸ PSRAI assumes that 75 percent of cases that result in a constant disposition of "No answer" or "Busy" are actually not working numbers.

Table 1: Sample Disposition

Landline	Cell	
79,412	6,150	Total Numbers Dialed
3,808	112	Non-residential
2,819	1	Computer/Fax
27	0	Cell phone
44,682	2,340	Other not working
5,178	88	Additional projected not working
22,899	3,610	Working numbers
28.9%	58.7%	Working Rate
1,726	30	No Answer / Busy
6,955	1,250	Voice Mail
106	3	Other Non-Contact
14,112	2,327	Contacted numbers
61.7%	64.4%	Contact Rate
774	447	Callback
10,698	1,311	Refusal
2,640	569	Cooperating numbers
18.7%	24.5%	Cooperation Rate
35	7	Language Barrier
794	362	Screen-out/Child's cell phone
1,811	200	Eligible numbers
68.6%	35.3%	Eligibility Rate
11	0	Break-offs
1,800	200	Completes
99.4%	100.0%	Completion Rate
11.5%	15.8%	Response Rate