ELON POLL

The Impact of Hurricane Florence on North Carolina Voters

Survey of North Carolina Registered Voters
October 1st-4th, 2018

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Survey Overview

The Elon University Poll conducted a representative survey of North Carolina registered voters between October 1 and October 4, 2018. The purpose of this survey was to understand how much North Carolina voters prepared for Hurricane Florence, what effects the storm had on voters, and voter attitudes about policy issues related to hurricanes and climate change.

The survey is a mixed mode, blended sample design. Of the 848 respondents in the weighted sample, 348 were interviewed on the telephone from a voter list sample, and 500 were interviewed online through an opt-in survey sample marketplace. Additional methodological details are available at the bottom of this document.

Our damage estimates for this survey should be interpreted in the context of official estimates from government entities and utility companies. For example, many of the 17% of respondents who reported flooding might have experienced flooding that wasn't sufficiently severe to be counted in official estimates of damage. Similarly, many among the 42% who reported experiencing power loss may have only experienced a very temporary loss of power.

For highlights of key findings from this survey, please see our press release at www.elon.edu/elonpoll.

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Topline Results
Note: Question order was the same as the order presented in this report.

Impact of Florence

Power Loss
Did you experience any power loss during the storm?

Yes	357	42.10%
No	491	57.90%
N=	848	100.00%

Flooding
Did you experience any flooding at your home or workplace?

Yes	143	16.90%
No	705	83.10%
N=	848	100.00%

Wind Damage
Did you experience any wind or tree damage to your property?

Yes	287	33.90%
No	561	66.10%
N=	848	100.00%

Leave Home
Did you leave your home to avoid the storm?

Yes	123	14.50%
No	725	85.50%
N=	848	100.00%

Help Needed
Are you getting the help you need to recover?
Note: Asked only to those with flooding or wind damage.

Yes	201	59.00%
No	90	26.30%
Somewhat	6	1.70%
Didn't need help [Don't read]	44	12.90%
N=	340	100.00%

Preparation for Florence

I am going to read you a list of things some people may or may not have acquired before Hurricane Florence. For each, please tell me if you obtained them in advance of the storm:

Extra gasoline

Yes	508	59.90%
No	339	40.00%
Don't Know	1	0.10%
N=	848	100.00%

Bottled water or other containers of water

Yes	698	82.40%
No	150	17.60%
N=	848	100.00%

Extra food

Yes	621	73.20%
No	226	26.70%
Don't Know	1	0.10%
N=	848	100.00%

Extra cash

Yes	417	49.50%
No	426	50.50%
N=	843	100.00%

Working flashlights

Yes	633	74.60%
No	214	25.30%
Don't Know	1	0.10%
N=	848	100.00%

Preparing for the Next Storm

Preparation for Next Storm
The next time a similarly powerful hurricane is projected to impact your community, will you prepare less, prepare more, or prepare in the same way?

Prepare Less	19	2.30%
Prepare Same	601	71.40%
Prepare More	222	26.30%
N=	842	100.00%

Next Hurricane Forecast
The next time a hurricane is forecasted to impact your community, are you more likely or less likely to believe weather reports, or did Hurricane Florence not make any difference in this?

Less Likely	63	7.5%
No Difference	536	64.2%
More Likely	236	28.2%
N=	835	100.0%

Storm Warnings
Do you think government warnings about Hurricane Florence were generally overstated, understated or about right?

Understated	52	6.30%
About Right	639	77.00%
Overstated	138	16.70%
N=	830	100.00%

Post-Florence Policy Ideas

Post-Florence Policy Ideas
I'm going to read you a list of some policy ideas that have been in the news after Hurricane Florence. For each, please tell me if you think the proposal is a good idea or a bad idea:

Restricting real estate development along flood prone areas

Good Idea	645	76.10%
Bad Idea	94	11.10%
Don't Know	109	12.90%
N=	848	100.00%

Incorporating findings from climate change scientists into local government plan

```
Good Idea ....................................522.................................... 61.70%
Bad Idea.......................................157.................................... 18.50%
Don't Know...................................168.................................... 19.80%
N=................................................847.................................. 100.00%
```

Increasing environmental regulations for hog farms

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Good Idea ....................................500.................................... 59.20%
Bad Idea.......................................136.................................... 16.10%
Don't Know...................................210.................................... 24.80%
N=................................................846.................................. 100.00%
```

Increasing environmental regulations for coal ash ponds

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Good Idea ....................................611.................................... 72.20%
Bad Idea.........................................88.................................... 10.40%
Don't Know...................................148.................................... 17.50%
N=................................................847.................................. 100.00%
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Making it easier to evacuate with pets during disasters

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Good Idea ....................................744.................................... 87.80%
Bad Idea.........................................38.................................... 4.50%
Don't Know.....................................65.................................... 7.70%
N=................................................848.................................. 100.00%
```

Beliefs About Climate Change

Storm Severity
Would you say hurricanes are becoming more severe, less severe, or staying about the same?

```
More severe...................................451.................................... 53.90%
Less severe......................................23.................................... 2.80%
Staying about the same ...................357.................................... 42.70%
Something else ..................................5.................................... 0.60%
N= ...............................................836.................................. 100.00%
```

Climate Change Coast
In your opinion, how likely is climate change, also known as global warming, to negatively impact the coastal communities in North Carolina within the next 50 years? Would you say it's very likely, somewhat likely, or not at all likely?

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Very likely ....................................431.................................... 51.50%
Somewhat likely.............................252.................................... 30.20%
Not at all likely..............................148.................................... 17.80%
Something else ..................................5.................................... 0.60%
N= ...............................................836.................................. 100.00%
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Approval of Trump and Cooper's Response

Approval of Trump and Cooper's Response
For each of the following, I'd like you to tell me whether you approve or disapprove of their response to Hurricane Florence:

President Donald Trump

Approve	450	57.60%
Disapprove	331	42.40%
N=	781	100.00%

Governor Roy Cooper

Approve	662	86.60%
Disapprove	102	13.40%
N=	764	100.00%

Weather Advice

Who do you trust for advice?
When it comes to making disaster decisions, who are you most likely to trust for advice?

No one / Myself	150	18.20%
Friend, Co-worker, neighbor, etc.	11	1.40%
Family Member	117	14.20%
Local Meteorologist / Local News	257	31.10%
National meteorologist / National News	140	16.90%
Governor	45	5.40%
President	13	1.60%
Law Enforcement/Firefighters	20	2.40%
Other local government	35	4.20%
Other	39	4.70%
N=	828	100.00%

Demographics

Age

Age 18-29	139	18.00%
30-44	186	24.10%
45-64	253	32.70%
65+	195	25.20%
N=	773	100.00%

Race
Note: Online respondents self-reported their race; telephone respondents' race comes from the voter file.

White...591..................................... 69.80%
Black ....188..................................... 22.20%
Other ....68....................................... 8.00%
N= ....846..................................... 100.00%

Education
Do you have a four-year bachelor's degree?

Did not graduate college ....563..................................... 66.70%
Bachelor's degree or higher ....281..................................... 33.30%
N= ....844..................................... 100.00%

Gender
Male ....399..................................... 47.40%
Female..442..................................... 52.60%
N= ....841..................................... 100.00%

Party Affiliation (Registration)
Note: Online respondents self-reported their registration status and registered party; telephone respondents' party affiliation comes from the voter file.

Democrat...325..................................... 38.30%
Unaffiliated ....273..................................... 32.20%
Republican ....251..................................... 29.50%
N= ....848..................................... 100.00%

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Cross-Tabulations

Storm Warnings Overstated

Do you think government warnings about Hurricane Florence were generally overstated, understated or about right?

	Understated %	About Right %	Overstated %	Total %
Overall	6	77	17	100
Age 18-29	13	63	24	100
30-44	4	76	20	100
45-64	6	82	13	100
65+	5	83	12	100
Did not graduate college	7	76	17	100
Bachelor's degree or higher	6	79	16	100
Male	8	76	16	100
Female	5	78	17	100
Democrat	7	78	15	100
Unaffiliated	6	78	15	100
Republican	5	75	20	100
Mountains	4	75	21	100
Piedmont	6	76	18	100
Coastal Plains	8	79	13	100

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Post-Florence Policy Ideas

I'm going to read you a list of some policy ideas that have been in the news after Hurricane Florence. For each, please tell me if you think the proposal is a good idea or a bad idea:

Restricting real estate development along flood prone areas

	Good Idea %	Bad Idea %	Don't Know %	Total %
Overall	76	11	13	100
18-29	66	14	19	100
30-44	73	14	13	100
45-64	81	9	10	100
65+	79	9	13	100
Did not graduate college	73	11	16	100
Bachelor's degree or higher	82	11	7	100
Male	77	13	11	100
Female	75	10	15	100
Democrat	80	9	12	100
Unaffiliated	76	10	14	100
Republican	72	15	13	100
Mountains	71	16	13	100
Piedmont	77	10	14	100
Coastal Plains	76	12	12	100

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Incorporating findings from climate change scientists into local government plan

	Good Idea %	Bad Idea %	Don't Know %	Total %
Overall	62	18	20	100
Age 18-29	69	13	18	100
30-44	55	19	26	100
45-64	62	19	20	100
65+	60	21	19	100
Did not graduate college	58	18	24	100
Bachelor's degree or higher	68	20	12	100
Male	59	22	19	100
Female	64	16	21	100
Democrat	76	7	16	100
Unaffiliated	58	22	20	100
Republican	47	29	24	100
Mountains	64	21	15	100
Piedmont	63	16	21	100
Coastal Plains	57	21	22	100

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Increasing environmental regulations for hog farms

	Good Idea %	Bad Idea %	Don't Know %	Total %
Overall	59	15	26	100
Age 18-29	63	10	27	100
30-44	63	13	24	100
45-64	59	16	25	100
65+	52	20	28	100
Did not graduate college	57	15	27	100
Bachelor's degree or higher	62	18	20	100
Male	57	20	23	100
Female	60	13	27	100
Democrat	68	10	21	100
Unaffiliated	61	14	25	100
Republican	45	26	29	100
Mountains	61	15	24	100
Piedmont	61	13	26	100
Coastal Plains	53	20	27	100

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Increasing environmental regulations for coal ash ponds

	Good Idea %	Bad Idea %	Don't Know %	Total %
Overall	73	9	18	100
Age 18-29	69	7	24	100
30-44	74	10	16	100
45-64	74	9	17	100
65+	72	11	17	100
Did not graduate college	70	9	21	100
Bachelor's degree or higher	76	13	11	100
Male	72	14	14	100
Female	72	7	20	100
Democrat	79	8	13	100
Unaffiliated	71	9	19	100
Republican	64	15	21	100
Mountains	75	9	16	100
Piedmont	75	9	16	100
Coastal Plains	66	10	24	100

Making it easier to evacuate with pets during disasters

	Good Idea %	Bad Idea %	Don't Know %	Total %
Overall	88	4	8	100
Age 18-29	94	3	3	100
30-44	93	4	4	100
45-64	89	3	8	100
65+	78	7	15	100
Did not graduate college	90	4	7	100
Bachelor's degree or higher	84	7	10	100
Male	83	6	11	100
Female	92	3	5	100
Democrat	91	2	6	100
Unaffiliated	86	4	10	100
Republican	85	8	7	100
Mountains	88	3	9	100
Piedmont	89	4	7	100
Coastal Plains	87	6	7	100

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Storms Getting More or Less Severe
Would you say hurricanes are becoming more severe, less severe, or staying about the same?

	More Severe %	Less Severe %	Staying Same %	Other Response %	Total %
Overall	55	3	42	1	100
Age 18-29	55	5	39	1	100
30-44	53	2	44	1	100
45-64	54	1	44	0	100
65+	56	2	41	1	100
Did not graduate college	54	2	43	0	100
Bachelor's degree or higher	53	4	42	1	100
Male	47	3	49	1	100
Female	59	2	38	1	100
Democrat	66	3	30	1	100
Unaffiliated	50	3	47	0	100
Republican	43	3	53	1	100
Mountains	50	3	47	0	100
Piedmont	58	3	39	0	100
Coastal Plains	50	3	45	2	100

Climate Change Impact on NC Coast

In your opinion, how likely is climate change, also known as global warming, to negatively impact the coastal communities in North Carolina within the next 50 years? Would you say it's very likely, somewhat likely, or not at all likely?

	Very likely %	Somewhat likely %	Not at all likely %	Other %	Total %
Total	52	31	17	0	100
Age 18-29	58	30	11	0	100
30-44	52	30	17	1	100
45-64	47	35	18	0	100
65+	55	25	19	1	100
Did not graduate college	47	34	18	1	100
Bachelor's degree or higher	60	23	17	0	100
Male	46	31	22	1	100
Female	56	30	14	0	100
Democrat	67	27	7	0	100
Unaffiliated	47	33	19	1	100
Republican	37	31	31	1	100
Mountains	47	27	25	1	100
Piedmont	57	26	16	1	100
Coastal Plains	44	42	14	0	100

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Approve of Trump's Response to Florence

	Approve %	Disapprove %	Total %
Overall	57	43	100
Age 18-29	36	64	100
30-44	61	39	100
45-64	63	37	100
65+	62	38	100
Did not graduate college	59	41	100
Bachelor's degree or higher	55	45	100
Male	61	39	100
Female	55	45	100
Democrat	30	70	100
Unaffiliated	57	43	100
Republican	92	8	100
Mountains	57	43	100
Piedmont	52	48	100
Coastal Plains	68	32	100

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Approve of Cooper's Response to Florence

	Approve %	Disapprove %	Total %
Overall	86	14	100
Age 18-29	78	22	100
30-44	83	17	100
45-64	90	10	100
65+	91	9	100
Did not graduate college	85	15	100
Bachelor's degree or higher	90	10	100
Male	86	14	100
Female	87	13	100
Democrat	91	9	100
Unaffiliated	86	14	100
Republican	82	18	100
Mountains	87	13	100
Piedmont	84	16	100
Coastal Plains	91	9	100

Methodological Information

Mode: Mixed Mode; Telephone (from voter list) and Online
Population: North Carolina Registered Voters
Dates in the field: October 1-4, 2018
Sample Size: 848; 500 online respondents, 348 telephone respondents
Weighting Variables: Race, Gender, Age, Education, Rural/Urban/Suburban, Registered Party
Credibility Interval   +/- 3.6%

Procedure
For this survey, the Elon University Poll used a blended sample that combined a telephone voter list sample with an opt-in sample. The registered voter telephone sample was purchased from Survey Sample International. Some telephone respondents had been sampled in prior Elon Poll telephone surveys. The online opt-in sample was provided by Lucid, LLC. Respondents were recruited for this sample from many sample providers in the Lucid marketplace. Respondents received small amounts of compensation in exchange for their opinions.

For the administration of the survey, the Elon University Poll used Qualtrics and a CATI system. We only included interviews in the final data if respondents spent a minimum length of time on the interview. A survey was considered complete only if a respondent progressed through the entire survey. Telephone calling times were 6:30PM to 9PM October 1 to 4. Elon University students conducted every telephone interview under supervision of the Elon Poll directors.

Reported results are limited to respondents who self-identified as North Carolina registered voters. Quotas on race, sex and age were applied prior to the online survey commencement. Online cases were deleted if a respondent completed the survey in less than 2 minutes, more than 20 minutes or with open-ended answers that clearly implied interviews were invalid.

Credibility Interval
Unlike a traditional random digit-dial telephone survey, blended sample surveys do not have traditional margin of errors because they do not adhere to assumptions of random selection. To account for uncertainty inherent in any sample-based research design, we provide a credibility interval. More information about this technique can be found here. The credibility interval was calculated by inflating traditional confidence intervals by design effects. For the registered voter sample this means: 1.077* 3.36 = 3.6. The telephone only sample is based on random selection from voter files (with some conditions). While this justifies a margin of error for the telephone only portion, we report only the credibility interval due to the blended sample design.

Support for Transparency
The Elon University Poll supports transparency in survey research and is a charter member of the American Association for Public Opinion Research Transparency Initiative, which is a program promoting openness and transparency about survey research methods and operations among survey research professionals and the industry. All information about the Elon University Poll that we released to the public conforms to reporting conventions recommended by the American Association for Public Opinion Research and the National Council on Public Polls.

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Weighting Information

Weights for registered voters were calculated based on demographics calculated by Elon Poll staff from the NCSBE individual voter file or a large sample thereof. Weights were generated in Stata using a technique known as iterative proportional fitting, also known as raking.

The weight variables were calculated based on NCSBE data for age, race, sex, state region[1], county density[2] and registered party affiliation. NCSBE data does not provide estimates for education. As a result, we determined these parameters based on the all resident weighted values restricted to self-described registered voters. For a small portion of cases with item non-response among some weight variables, an additional weight was calculated omitting those variables.

		Population Value	Unweighted Value	Weighted Value
Sex	Male	46%	47%	47%
	Female	54%	53%	53%
County Density	Urban	39%	37%	39%
	Suburban	25%	25%	25%
	Rural	36%	38%	36%
Education	Less than BA's	67% *(*estimated)*	54%	67%
	BA's or higher	33%	46%	33%
Race	White	69%	77%	69%
	African American	22%	18%	22%
	Other	8%	5%	8%
Age	18-29	18%	14%	18%
	30-44	24%	23%	24%
	45-64	33%	41%	33%
	65+	25%	22%	25%
Party Registration	Democrat	38%	41%	38%
	Unaffiliated / Other	32%	27%	32%
	Republican	30%	32%	30%

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[1] Created using the voter file among telephone respondents and the county of residence question among online respondents. A map of county region is available here.

[2] Same note as above. A map of county types is available here.

Frequently Asked Questions

1. **Who pays for the Elon University Poll?**

   Elon University fully funds the Elon University Poll. The poll operates under the auspices of the College of Arts and Sciences at Elon University, led by Dean Gabie Smith. The Elon University administration, led by Dr. Connie Ledoux Book, president of the university, fully supports the Elon University Poll as part of its service to the community. Because of this generous support, the Elon University poll does not engage in any contract work. This permits the Elon University Poll to operate as a neutral, non-biased, non-partisan resource.

2. **Does the Elon University Poll favor a certain party?**

   The Elon University Poll is an academic, non-partisan survey. We do not engage or work with any political candidates or parties. We employ best practices to ensure the results are not biased.

3. **Did you weight the data?**

   Yes. We apply weights to the data. For this survey, an iterative proportional fitting algorithm generated weights based on NCSBE voter registration data. For more information, consult the section in this report on our method.

4. **What did respondents know about the survey before agreeing to take the survey?**

   During online survey recruitment, respondents saw a title that the survey was about Hurricane Florence. In the telephone survey, interviewers said, "We are interviewing registered voters in North Carolina about their experiences with Hurricane Florence."

5. **What are the advantages and disadvantages of blended sample surveys over traditional random-digital dial surveys?**

   Traditional telephone surveys have an advantage over online surveys in that assumptions of equal probability of selection are more appropriate. Furthermore, online surveys alone do not capture opinions of respondents who lack internet access. However, our opinion is that declining telephone response rates and the growth in online sample pool sizes has narrowed quality differences between the two modes. In the case of this survey, we combined both telephone calls to registered voters with online sample- allowing us to reach those without internet access as well as populations hard to reach on the telephone. Additional information about opt-in surveys in general is available from AAPOR and the Pew Research Center.

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The Elon University Poll Team

Dr. Jason Husser is Director of the Elon University Poll and Associate Professor of Political Science & Policy Studies at Elon University. Dr. Husser holds a Ph.D. in Political Science from Vanderbilt University. He researches American political behavior and survey methodology.
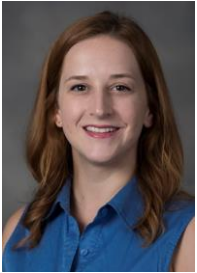
Dr. Kaye Usry is Assistant Director of the Elon University Poll and Assistant Professor of Political Science & Policy Studies at Elon University. Dr. Usry holds a Ph.D. in Political Science from the University of Illinois at Urbana-Champaign. Her research interests are in American politics and political psychology.

Owen Covington is Director of the Elon University News Bureau. A native North Carolinian, Owen Covington joined the staff of Elon University in 2016 after spending 17 years in the field of journalism as a reporter and editor for daily and weekly news outlets in North Carolina and Kentucky. As director of the Elon University News Bureau, Covington oversees the promotion of Elon and its students, faculty and staff both through stories told across Elon's media channels as well as through interactions with state, national and international media. He is involved in media relations, including responding to requests from print, digital and broadcast media outlets, and works to promote content generated by a variety of Elon news sources.

For more information on the Elon University Poll visit elon.edu/elonpoll or contact:
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