SEVERE WEATHER AND SOCIETY SURVEY INSTRUMENT
Date: Jun 20XX; Respondents = 1,500; Median Time = 20 min

You are invited to participate in the Severe Weather and Society study. This study seeks to assess how U.S. residents receive, understand, and respond to weather forecasts and warnings. You were selected as a possible participant because you volunteered to participate in online surveys through Qualtrics or one of its partners. If you agree to participate, you will complete this online survey.

There are no risks or benefits.

If you participate, you will be compensated according to your agreement with your online survey provider. Your participation is voluntary and your responses will be de-identified before they are shared for research purposes or published.

Even if you choose to participate now, you may stop participating at any time and for any reason. Your data may be used in future research studies, unless you contact me to withdraw your data.

Data are collected via an online survey system that has its own privacy and security policies for keeping your information confidential. The University of Oklahoma cannot provide assurances as to how this online survey system is permitted to use the data you provide.

If you have questions about this research, please contact the Center for Risk and Crisis Management at the University of Oklahoma, at 405-325-1720 or at clsilva@ou.edu.

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board at 405-325-8110 or irb@ou.edu with questions, concerns or complaints about your rights as a research participant, or if you don't want to talk to the researcher.

By answering the survey questions, I agree to participate in this research. Please print this page for your records. This research has been approved by the University of Oklahoma, Norman Campus IRB.

**IRB Number: 9418**
**Approval date: 06/13/2018**

**Paperwork Reduction Act**
A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0648-XXXX. Without this approval, we could not conduct this survey. Public reporting for this information collection is estimated to be approximately 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the NWS Office of Science and Technology Integration, Attn: Nicole Kurkowski, Nicole.kurkowski@noaa.gov.

----------End Web pg----------

**age:** How old are you? [verbatim; require numeric; IF < 18 SKIP TO END OF SURVEY]

**gend:** Are you male or female?
0 - Female
1 - Male

**hisp:** Do you consider yourself to be Hispanic, Latino, or Spanish or to have Hispanic, Latino, or Spanish origins?
0 - No

1 - Yes

**race:** Which of the following best describes your race?
1 - White
2 - Black or African American
3 - American Indian or Alaska Native
4 - Asian
5 - Native Hawaiian or Pacific Islander
6 - Two or more races
7 - Some other race (please specify)
**race_spec: [**VERATIM]

----------End Web pg----------

**state:** Please select the state or district where your primary residence is located.

**zip:** What is the five digit zip code at your residence? [VERATIM; REQUIRE 5-DIGIT NUMERIC]

----------End Web pg----------

Approximately how long have you lived at your current address or any other address within the same zip code area? **long_years**: **[**VERBATIM; REQUIRE NUMERIC] years and **long_months**: [VERBATIM, REQUIRE NUMERIC <12] months.

----------End Web pg----------

[SHOW IF **long_years** < 5]
**last_state:** Using the dropdown list, please select the state or district where your previous residence was located.

----------End Web pg----------

**now:** Please indicate which of the following statements applies to you.
0 - I am completing this survey from my current primary residence.
1 - I am completing this survey from a location that is not my current primary residence.

----------End Web pg----------

**rural:** Which of the following categories best describes the location of your current primary residence?
1 - Urban lot in a densely populated area
2 - Suburban lot in a neighborhood that is near a densely populated area
3 - Rural lot in a sparsely populated area

**home:** Which of the following categories best describes the nature of your current primary residence?
1 - Stand-alone (detached) permanent structure such as a house
2 - Condominium, town-house, or duplex that is attached to another structure
3 - Apartment or dormitory room that is part of a larger residential complex
4 - Mobile home (whether placed on a permanent foundation or not)
5 - Boat, boathouse, ship, dock, or other floating structure
6 - Other type (please specify)
**home_spec:** [VERBATIM]

**rent:** Which of the following categories best describes your living arrangements at your current primary residence?
1 - Live with family or friends and do not pay rent
2 - Pay to rent or lease your primary residence (includes college or other dormitory rooms)

3 - Own your primary residence (includes making mortgage payments or outright ownership with no mortgage payments)

----------End Web pg----------

**adults:** ***Including yourself,*** how many ADULTS AGE 18 AND OLDER live in your current primary residence? [VERBATIM; REQUIRE NON-ZERO NUMERIC RESPONSE] adults

**children:** How many CHILDREN AGE 17 AND YOUNGER live in your current primary residence? **[**VERBATIM; REQUIRE NUMERIC RESPONSE] children

----------End Web pg----------

Now we have some basic questions about the weather. How much do you agree or disagree with the following statements? [RANDOM ORDER]

**follow:** I follow the weather very closely.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**plan_around:** I plan my daily routine around the weather.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**und_weather:** I don't understand what causes extreme weather events like thunderstorms, tornadoes, and hurricanes.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

----------End Web pg----------

**long_forcast:** Some meteorologists provide daily temperature and rain forecasts many days in advance. We want to know what you think about these forecasts. If you were to guess, about how far in advance can meteorologists *accurately* forecast daily temperatures and rain?
1 - 5 days or less
2 - 7 days
3 - 10 days
4 - 2 weeks
5 - 4 weeks
6 - 8 weeks
7 - 2 months or more

----------End Web pg----------

How frequently do you get information about the weather from each of the following sources? [RANDOM ORDER IN TABLE]

**wthr_info_paper:** Newspapers
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_web:** Non-government Internet websites (such as weather.com)
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_govweb:** Government Internet websites (such as noaa.gov)
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_loctv:** Local TV (television) news
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_cabtv:** Cable TV (television) news (such as The Weather Channel)
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_radio:** Radio
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_fam:** Family, friends or colleagues
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_soc:** Social Media, such as Facebook and Twitter
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

**wthr_info_phone:** Cell phone applications or automated text messages
1 - Never
2 - Less than once per week
3 - About once per week
4 - Several times per week
5 - About once a day
6 - Several times a day

----------End Web pg----------

Thinking about all four seasons (winter, summer, spring, and fall), how do you rate the risk of the following extreme weather events to you and the people in your area? [RANDOM ORDER IN TABLE]

**risk_wind:** Extreme high winds
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_rain:** Extreme rain storms
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_heat:** Extreme heat waves
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_drought:** Droughts
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_cold:** Extreme cold temperatures
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_snow:** Extreme snow (or ice) storms
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_tor:** Tornadoes
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_flood:** Floods
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_hur:** Hurricanes
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

**risk_fire:** Wildfires
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

----------End Web pg----------

**risk_tie:** It looks like you gave these extreme weather events the same rating. Please indicate which type of event poses the biggest risk to you and the people in your area. [CHECK BOX OF TOP RISKS; RANDOM ORDER; 1 = SELECTED]

----------End Web pg----------

As you know, COVID-19 has had (and continues to have) a large impact on society. For some people, it may cause them to pay less attention to extreme weather risks or make it more difficult to take protective action in response to them.

**covid_risk:** How do you rate the risk of COVID-19 in relation to extreme weather risks to you and the people in your area?
1 – The risk of COVID-19 is ***significantly lower*** than the risk of extreme weather
2 – The risk of COVID-19 is ***lower*** than the risk of extreme weather
3 – The risks are about the same
4 – The risk of COVID-19 is ***higher*** than the risk of extreme weather
5 – The risk of COVID-19 is ***significantly higher*** than the risk of extreme weather

**covid_attention:** Do you pay less attention to extreme weather risks than you did before COVID-19?
1 - Definitely no
2 - Probably no
3 - Not sure
4 - Probably yes
5 - Definitely yes

**covid_respond:** Do you think COVID-19 will make it more difficult for you and other people in your area to take protective action in response to extreme weather events in the next few weeks?
1 - Definitely no
2 - Probably no
3 - Not sure
4 - Probably yes
5 - Definitely yes

----------End Web pg----------

Now we have some questions about the National Weather Service (NWS), an agency of the United States government that issues weather forecasts and different kinds of alerts to the public about hazardous weather, including severe weather watches and warnings.

**alert_und:** In general, do you understand the difference between watches and warnings?
1 - Definitely no
2 - Probably no
3 - Not sure
4 - Probably yes
5 - Definitely yes

----------End Web pg----------

The next few questions focus on severe thunderstorms and tornadoes. They may be relatively rare in your area, but severe thunderstorms and tornadoes can happen in every state.

To the best of your knowledge, is the following alert considered a tornado watch or a warning? [RANDOM SPLIT; 50% get **torwatch**; 50% get **torwarn**]

**torwatch:** This alert is issued when severe thunderstorms and tornadoes are possible in and near the area. It does not mean that they will occur. It only means they are possible.
1 - Tornado WATCH
2 - Tornado WARNING
3 - Don’t know

**torwarn:** This alert is used when a tornado is imminent. When this alert is issued, seek safe shelter immediately.
1 - Tornado WATCH
2 - Tornado WARNING
3 - Don’t know

----------End Web pg----------

**warn_time:** If the National Weather Service issues a tornado WARNING for your area, how much time do you have before the tornado arrives?
1 - less than 1 hour
2 - 1 to 24 hours
3 - 1 to 3 days
4 - more than 3 days

**warn_size:** Approximately how large is the area included in an average tornado WARNING?
1 - around the size of a city
2 - around the size of a county
3 - around the size of multiple counties
4 - around the size of a state
5 - around the size of multiple states

----------End Web pg----------

[SHOW ONLY IF **warn_time** = 1]
**warn_time_minutes:** You indicated that there is *less than 1 hour* between when tornado WARNINGS are issued and when tornadoes arrive. To the best of your knowledge, how many *minutes* are there between when tornado WARNINGS are issued and when tornadoes arrive? [VERBATIM, REQUIRED NUMERIC <= 60] minutes

----------End Web pg----------

[SHOW ONLY IF **warn_time** = 2]
**warn_time_hours:** You indicated that there is *1 to 24 hours* between when tornado WARNINGS are issued and when tornadoes arrive. To the best of your knowledge, how many *hours* are there between when tornado WARNINGS are issued and when tornadoes arrive? [VERBATIM, REQUIRED NUMERIC <=24] hours

----------End Web pg----------

**watch_time:** If the National Weather Service issues a tornado WATCH for your area, how much time do you have before the tornado arrives?
1 - less than 1 hour
2 - 1 to 24 hours
3 - 1 to 3 days
4 - more than 3 days

**watch_size:** Approximately how large is the area included in an average tornado WATCH?
1 - around the size of a city
2 - around the size of a county
3 - around the size of multiple counties
4 - around the size of a state
5 - around the size of multiple states

----------End Web pg----------

[SHOW ONLY IF **watch_time** = 1]
**watch_time_minutes:** You indicated that there is *less than 1 hour* between when tornado WATCHES are issued and when tornadoes arrive. To the best of your knowledge, how many *minutes* are there between when tornado WATCHES are issued and when tornadoes arrive? [VERBATIM, REQUIRED NUMERIC <=60] minutes

----------End Web pg----------

[SHOW ONLY IF **watch_time** = 2]
**watch_time_hours:** You indicated that there is *1 to 24 hours* between when tornado WATCHES are issued and when tornadoes arrive. To the best of your knowledge, how many *hours* are there between when tornado WATCHES are issued and when tornadoes arrive? [VERBATIM, REQUIRED NUMERIC <=24] hours

----------End Web pg----------

**tor_watchwarn_und:** How would you rate your understanding of tornado watches and warnings?
1 - Poor
2 - Fair

3 - Good
4 - Very good
5 - Excellent

**tor_map_und:** Forecasters, websites, and phone applications often use maps to display tornado watches and warnings. How would you rate your understanding of maps?
1 - Poor
2 - Fair
3 - Good
4 - Very good
5 - Excellent

**tor_radar_und:** Forecasters, websites, and phone applications also use radar images to communicate tornado risk. How would you rate your understanding of radar images?
1 - Poor
2 - Fair
3 - Good
4 - Very good
5 - Excellent

----------End Web pg----------

In addition to tornadoes, the National Weather Service issues alerts for *severe thunderstorms*. To the best of your knowledge, which of the following hazards does the National Weather Service consider when issuing SEVERE THUNDERSTORM WARNINGS? Please indicate all that apply. [RANDOM ORDER, CHECK BOX, 1 = SELECTED]
**svr_hail:** Large hail
**svr_wind:** High winds
**svr_lightning:** Lightning
**svr_flood:** Flooding
**svr_rain:** Extreme rainfall

**svr_watchwarn_und:** How would you rate your understanding of *severe thunderstorm* WATCHES and WARNINGS?
1 - Poor
2 - Fair
3 - Good
4 - Very good
5 - Excellent

----------End Web pg ----------

**ffd_und:** The National Weather Service also issues alerts for *flash floods*. How would you rate your understanding of *flash flood* WATCHES and WARNINGS?
1 - Poor
2 - Fair
3 - Good
4 - Very good
5 - Excellent

**ffd_watchwarn_und:** Do you understand the difference between *floods* and *flash floods*?
1 - Definitely no
2 - Probably no
3 - Not sure
4 - Probably yes
5 - Definitely yes

----------End Web pg ----------

The next set of questions is about TORNADOES.

Please tell us how strongly you agree with the following statements about tornado WARNINGS: [RANDOM ORDER]
**rec_all:** I receive *all* tornado warnings that are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**rec_most:** I receive *most* tornado warnings that are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**rec_soon:** I receive tornado warnings as soon as they are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**rec_miss:** Sometimes I miss tornado warnings that are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**rec_area:** Sometimes I am not sure if a tornado warning is for my area or a different area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**rec_time:** Sometimes I am not sure what time tornado warnings begin and end for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

----------End Web pg ----------

Sometimes people *miss* tornado WARNINGS because they are doing something that makes it difficult to pay attention to the weather. For example, people often miss tornado warnings when they are sleeping. How confident are you that you would *receive* tornado warnings in the following situations? [RANDOM ORDER]

**rec_sleep:** If you are sleeping?

1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_driving:** If you are in a car?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_work:** If you are at work or school?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_store:** If you are at a store?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_small_group:** If you are with a *small* group of friends or family?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_large_group:** If you are with a *large* group of friends or family?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_stream:** If you are watching a show or movie using an online streaming service like Netflix, Amazon Prime, or Hulu?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_phone:** If phone is not on or not working?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**rec_dif_sit:** Can you think of a ***different*** situation that might cause you to *miss* a tornado warning? [VERATIM]

----------End Web pg ----------

**warn_hist**: Do you recall having ever received a tornado WARNING for your area?
0 - No
1 - Yes

----------End Web pg ----------

[SHOW IF **warn_hist** = 1]
Think about the *most recent* tornado WARNING that you remember receiving.

**warn_when**: When did you receive the tornado warning?
1 - less than 1 month ago
2 - between 1 and 3 months ago
3 - between 3 and 12 months ago
4 - between 1 and 3 years ago
5 - more than 3 years ago
6 - I don't recall

How did you learn about the tornado warning? Please select all that apply.
**warn_how_br_rad**: Broadcast radio
**warn_how_wx_rad**: Weather radio (National Weather Service radio)
**warn_how_tv**: Television
**warn_how_siren**: Siren or other alarm
**warn_how_int**: Internet
**warn_how_soc**: Social media such as Twitter or Facebook
**warn_how_word**: Word-of-mouth (including telephone or text messages, email, etc.) from family, friends, neighbors, employers, co-workers, etc.
**warn_how_phone**: Automated text or phone notification
**warn_how_oth**: Other source (please specify)
**warn_how_dk**: I don't recall
**warn_how_spec**: [VERBATIM]

**warn_timercv:** What time was it when you received the tornado warning?
1 - Between 6am and noon
2 - Between noon and 6pm
3 - Between 6pm and midnight
4 - Between midnight and 6am
5 - I don't recall

**warn_where:** Where were you when you received the tornado warning?
1 - At home
2 - At work
3 - At school
4 - At a business (such as a store or restaurant)
5 - In a vehicle (such as a car, truck, or bus)
6 - Somewhere else (please specify)
7 - I don't recall
**warn_where_specify:** [VERBATIM]

**warn_iss:** Did you receive the tornado warning as soon as it was issued?
0 - No
1 - Yes
2 - I don't recall

**warn_sure**: Were you sure that the tornado warning was for your area and not a different area?
0 - No
1 - Yes
2 - I don't recall

**warn_tor**: Did a tornado touch down in the tornado warning area?
0 - No
1 - Yes
2 - I don't recall/don't know

----------End Web pg ----------

[SHOW IF **warn_where =** 1, 2, 3, or 4]
**last_act**: What did you do when you got the *most recent* tornado warning that you remember receiving?
0 - Nothing; continued my daily activities
1 - Monitored the situation, but did not move to shelter
2 - Moved to the most sheltered part of the building, but did not leave the building
3 - Moved to a specially constructed storm shelter in the building
4 - Moved to a nearby location or building that provided safer shelter
5 - Left the building and drove away from the tornado warning area
6 - Something else (please specify)
7 - I don't recall
**last_act_spec**: [VERBATIM]

**last_act_satis:** Looking back, how would you rate your satisfaction with the action you took?
1 - Very dissatisfied
2 - Dissatisfied
3 - Neither dissatisfied nor satisfied
4 - Satisfied
5 - Very satisfied

**last_act_again:** How likely is it that you would take the same action again if you were in the same situation in the future?
1 - Very unlikely
2 - Somewhat unlikely
3 - About as likely as not
4 - Somewhat likely
5 - Very likely

----------End Web pg ----------

Now we want you to think about the NEXT TIME you receive a tornado WARNING from the National Weather Service.

**next_act_day**: If you are *at home during daylight hours* and you receive a tornado warning for your area, what do you plan to do?
0 - Nothing; continue my daily activities
1 - Monitor the situation, but not move to shelter
2 - Move to the most sheltered part of my residence, but not leave the building
3 - Move to a specially constructed storm shelter in the building
4 - Move to a nearby location or building that provides safer shelter
5 - Leave the building and drive away from the tornado warning area
6 - Something else (please specify) [VERBATIM]
7 - Not sure
**next_act_day_spec**: [VERBATIM]

**next_act_night**: If you are *at home in the middle of the night* and you receive a tornado warning for your area, what do you plan to do?
0 - Nothing; continue my nightly activities
1 - Monitor the situation, but not move to shelter
2 - Move to the most sheltered part of my residence, but not leave the building
3 - Move to a specially constructed storm shelter in the building
4 - Move to a nearby location or building that provides safer shelter
5 - Leave the building and drive away from the tornado warning area
6 - Something else (please specify) [VERBATIM]
7 - Not sure
**next_act_night_spec**: [VERBATIM]

----------End Web pg ----------

Please tell us how strongly you agree with the following statements about tornado WARNINGS. If you have never received a tornado WARNING, please tell us how you think you will respond if you receive a WARNING in the future. [RANDOM ORDER]
**resp_ignore:** Sometimes I ignore tornado warnings that are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**resp_prot:** I always take protective action when tornado warnings are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**resp_busy:** Sometimes I am too busy to take protective action when tornado warnings are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

**resp_unsure:** I am not sure what to do when tornado warnings are issued for my area.
1 - Strongly disagree
2 - Disagree
3 - Neither disagree nor agree
4 - Agree
5 - Strongly agree

----------End Web pg ----------

Sometimes people receive tornado WARNINGS but *do not take protective action* because they are busy or doing something that makes it difficult to respond. For example, people often decide not to take protective action in response to tornado warnings when they are sleeping. How confident are you that you would *take protective action in response* to tornado warnings in the following situations? [RANDOM ORDER]

**resp_sleep:** If you are sleeping?
1 - Not at all confident
2 - Not very confident

3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_driving:** If you are in a car?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_work:** If you are at work or school?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_store:** If you are at a store?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_small_group:** If you are with a *small* group friends or family?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_large_group:** If you are with a *large* group friends or family?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_stream:** If you are watching a show or movie using an online streaming service like Netflix, Amazon Prime, or Hulu?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_phone:** If phone is not on or not working?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_dif_sit:** Can you think of a ***different*** situation that might cause you to *not take protective action* in response to a tornado warning? [VERATIM]

----------End Web pg ----------

For some people the time of day influences tornado warning reception, understanding, and/or responsiveness.

If a tornado WARNING were issued for your area tomorrow at [**rand_morn:** 1:00 AM | 2:00 AM | 3:00 AM | 4:00 AM | 5:00 AM | 6:00 AM | 7:00 AM | 8:00 AM | 9:00 AM], how confident are you that you would…

**rec_morn:** Receive the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**und_morn:** Understand the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_morn:** Take protective action in response to the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

----------End Web pg ----------

If a tornado WARNING were issued for your area tomorrow at [**rand_aft:** 10:00 AM | 11:00 AM | 12:00 PM (noon) | 1:00 PM | 2:00 PM | 3:00 PM | 4:00 PM | 5:00 PM], how confident are you that you would…

**rec_aft:** Receive the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**und_aft:** Understand the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_aft:** Take protective action in response to the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

----------End Web pg ----------

If a tornado WARNING were issued for your area tomorrow at [**rand_eve:** 6:00 PM | 7:00 PM | 8:00 PM | 9:00 PM | 10:00 PM | 11:00 PM | 12:00 AM (midnight)], how confident are you that you would…

**rec_eve:** Receive the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**und_eve:** Understand the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

**resp_eve:** Take protective action in response to the warning?
1 - Not at all confident
2 - Not very confident
3 - Somewhat confident
4 - Very confident
5 - Extremely confident

----------End Web pg ----------

Extreme weather can be dangerous and technically complex, so getting information you can trust is important. Please indicate your level of trust in information about extreme weather from each of the following organizations and groups. [RANDOM ORDER IN TABLE]

**nws_trust**: The National Weather Service
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

**lotv_trust**: Regional or local TV stations
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

**natv_trust**: National TV stations (like the Weather Channel)
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

**em_trust**: State or local emergency managers
1 - No trust
2 - Low trust
3 - Moderate trust

4 - High trust
5 - Complete trust

**fam_trust**: Family, friends, neighbors, employers, co-workers, etc.
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

----------End Web pg ----------

Warnings and information about severe weather are available from multiple sources. How much do you, *personally*, rely on each of the following sources of information about extreme weather? [RANDOM ORDER]

**wx_info1**: Broadcast radio
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

**wx_info2**: Weather radio (National Weather Service radio)
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

**wx_info3**: Television
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

**wx_info4**: Internet web pages focused on weather forecasts, such as those provided by the National Weather Service
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

**wx_info5**: Social media, such as Twitter or Facebook
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

**wx_info6:** Word-of-mouth (including telephone calls or texts) from family, friends, neighbors, employers, co-workers, etc.
1 - Not much
2 - Little
3 - Somewhat

4 - Much
5 - A great deal

**wx_info7**: Automated text or phone notifications
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

**wx_info8**: Outdoor warning sirens
1 - Not much
2 - Little
3 - Somewhat
4 - Much
5 - A great deal

----------End Web pg ----------

**wx_info_tie:** It looks like you gave these sources the same rating. Please indicate which source you rely on the *most* for information about severe weather. [CHECK BOX OF TOP SOURCES; RANDOM ORDER; 1 = SELECTED]

----------End Web pg ----------

Severe weather forecasts often include multiple pieces of information. We want to know how important each of the following pieces of information is to you. Please drag the boxes below to rank each piece of information from most important (top) to least important (bottom). [RANDOM ORDER; ARRANGE TEXT]
**forcast_loc:** Location: what area is the storm going to affect?
**forcast_time:** Timing: when is the storm going to happen?
**forcast_prob:** Chance: how likely is the storm to occur?
**forcast_sev:** Severity: how intense is the storm going to be (for example: wind speed, hail size, amount of rain)?
**forcast_impact:** Impacts: how might the storm impact you and surrounding areas? (for example: poor visibility, traffic delays, power outages, property damage)
**forcast_safe:** Protective actions: how can you stay safe during the storm? (for example: slow down when driving, stay inside, seek shelter)

----------End Web pg ----------

Some people look for different kinds of information at different points in time. In the next few questions, we are going to give you a timeline and ask you to indicate the type of information that is *most* important at each point in time.

**three_days**: 3 days before the storm
1 - Location: what area is the storm going to affect?
2 - Timing: when is the storm going to happen?
3 - Chance: how likely is the storm to occur?
4 - Severity: how intense is the storm going to be?
5 - Impacts: how might the storm impact you and surrounding areas?
6 - Protective actions: how can you stay safe during the storm?

**one_day**: 1 day before the storm
1 - Location: what area is the storm going to affect?
2 - Timing: when is the storm going to happen?
3 - Chance: how likely is the storm to occur?
4 - Severity: how intense is the storm going to be?
5 - Impacts: how might the storm impact you and surrounding areas?

6 - Protective actions: how can you stay safe during the storm?

**four_hours**: 4 hours before the storm
1 - Location: what area is the storm going to affect?
2 - Timing: when is the storm going to happen?
3 - Chance: how likely is the storm to occur?
4 - Severity: how intense is the storm going to be?
5 - Impacts: how might the storm impact you and surrounding areas?
6 - Protective actions: how can you stay safe during the storm?

**sixty_min**: 60 minutes before the storm
1 - Location: what area is the storm going to affect?
2 - Timing: when is the storm going to happen?
3 - Chance: how likely is the storm to occur?
4 - Severity: how intense is the storm going to be?
5 - Impacts: how might the storm impact you and surrounding areas?
6 - Protective actions: how can you stay safe during the storm?

**fifteen_min**: 15 minutes before the storm
1 - Location: what area is the storm going to affect?
2 - Timing: when is the storm going to happen?
3 - Chance: how likely is the storm to occur?
4 - Severity: how intense is the storm going to be?
5 - Impacts: how might the storm impact you and surrounding areas?
6 - Protective actions: how can you stay safe during the storm?

----------End Web pg ----------

A tornado WATCH means that tornadoes are *possible* in and near the watch area. The National Weather Service suggests that people do the following if they are in a tornado WATCH: *review and discuss your emergency plans, check supplies, and check your safe room. Be ready to act quickly if a warning is issued or you suspect a tornado is approaching*.

**watch_leadtime:** Forecasters are trying to decide how much time to give people between the issuance of a tornado WATCH and the beginning of a storm at their location. Many people want much time as possible, but forecasters must strike a balance between time and confidence. Giving people more time may mean that forecasters have less confidence about the location, timing, chance, severity, and impacts a possible storm.

How much time do you think forecasters should give people between the issuance of a tornado WATCH and the beginning of a storm at their location?
1 - Less than 1 hour
2 - 1 hour
3 - 2 hours
4 - 3 hours
5 - 4 hours
6 - 5 hours
7 - 6 hours
8 - More than 6 hours

----------End Web pg ----------

Forecasters often use a combination of phrases, scales, probabilities, and graphics to describe the risk of severe thunderstorms and tornadoes in an area. We want to know how you interpret these forecasts.

To begin, imagine that it is a Saturday morning at 8:00 AM and you see this forecast:

**rand_cond_format**: [RANDOM ASSIGNMENT]
1 - There is a [**rand_cond_perc**: 5 | 30] percent chance of tornadoes in your area this evening.
2 - There is a [**rand_cond_perc**: 5 | 30] percent chance of tornadoes in your area this evening. If tornadoes form, they are *unlikely* to cause significant damage.
3 - There is a [**rand_cond_perc**: 5 | 30] percent chance of tornadoes in your area this evening. If tornadoes form, they are *not expected* to cause significant damage.
4 - There is a [**rand_cond_perc**: 5 | 30] percent chance of tornadoes in your area this evening. If tornadoes form, it is *possible* that they will cause significant damage.
5 - There is a [**rand_cond_perc**: 5 | 30] percent chance of tornadoes in your area this evening. If tornadoes form, they are *expected* to cause significant damage.

**cond_risk_conc**: On a scale from 0 to 100, where 0 means *not at all concerned* and 100 means *extremely concerned*, how concerned would you be if you were to get this forecast? [VERBATIM; REQUIRE NUMERIC BETWEEN 0 AND 100]

**cond_risk_perc**: On a scale from 0 to 100, where 0 means *not at all likely* and 100 means *extremely likely*, how likely is it that you would change your plans for the day if you were to get this forecast? [VERBATIM; REQUIRE NUMERIC BETWEEN 0 AND 100]

----------End Web pg ----------

Now, imagine that it is a *different* Saturday morning at 8:00 AM and you see this forecast.

**rand_clim_format**: [RANDOM ASSIGNMENT]
1 - There is a 2 percent chance of tornadoes today
2 - There is a 5 percent chance of tornadoes today
3 - Tornadoes are 20 times more likely today than on an average day like today.
4 - Tornadoes are 50 times more likely today than on an average day like today.
5 - There is a 2 percent chance of tornadoes today; this means that tornadoes are 20 times more likely today than on an average day like today.
6 - There is a 5 percent chance of tornadoes today; this means that tornadoes are 50 times more likely today than on an average day like today.

**clim_risk_conc**: On a scale from 0 to 100, where 0 means *not at all concerned* and 100 means *extremely concerned*, how concerned would you be if you were to get this forecast? [VERBATIM; REQUIRE NUMERIC BETWEEN 0 AND 100]

**clim_risk_perc**: On a scale from 0 to 100, where 0 means *not at all likely* and 100 means *extremely likely*, how likely is it that you would change your plans for the day if you were to get this forecast? [VERBATIM; REQUIRE NUMERIC BETWEEN 0 AND 100]

----------End Web pg ----------

Next, we want you to look at an example forecast graphic from a few months ago.

**rand_pswo_location**: [RANDOM ASSIGNMENT]
1 - [**rand_pswo_format** = 1 show LINK; if **rand_pswo_format** = 2 show LINK]
2 - [**rand_pswo_format** = 1 show LINK; if **rand_pswo_format** = 2 show LINK]
3 - [**rand_pswo_format** = 1 show LINK; if **rand_pswo_format** = 2 show LINK]
4 - [**rand_pswo_format** = 1 show LINK; if **rand_pswo_format** = 2 show LINK]
5 - [**rand_pswo_format** = 1 show LINK; if **rand_pswo_format** = 2 show LINK]
6 - [**rand_pswo_format** = 1 show LINK; if **rand_pswo_format** = 2 show LINK]

**pswo_risk_conc**: On a scale from 0 to 100, where 0 means *not at all concerned* and 100 means *extremely concerned*, how concerned would you be if you were in **Location A**? [VERBATIM; REQUIRE NUMERIC BETWEEN 0 AND 100]

**pswo_risk_perc**: On a scale from 0 to 100, where 0 means *not at all likely* and 100 means *extremely likely*, how likely is it that you would change your plans for the day if you were in **Location A**? [VERBATIM; REQUIRE NUMERIC BETWEEN 0 AND 100]

----------End Web pg ----------

Now, we have some basic questions about how you assess various probabilities and risks. For the next few questions, please do not use a calculator but feel free to make notes or use paper if needed.

**cointoss:** Imagine that we flip a fair coin 1,000 times. What is your best guess about how many times the coin would come up heads in 1,000 flips? [VERBATIM; REQUIRED NUMERIC, ALLOW DECIMAL] [Answer = 500]

**bigbucks:** In the BIG BUCKS LOTTERY, the chance of winning a $10 prize is 1%. What is your best guess about how many people would win a $10 prize if 1,000 people each buy a single ticket to BIG BUCKS? [VERBATIM; REQUIRED NUMERIC] [Answer = 10]

**acme_pub:** In ACME PUBLISHING SWEEPSTAKES, the chance of winning a car is 1 in 1,000. What percent of tickets to ACME PUBLISHING SWEEPSTAKES win a car? [VERBATIM; REQUIRED NUMERIC, ALLOW DECIMAL] percent [Answer = 0.1]

----------End Web pg ----------

**choir:** Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in a choir 100 are men. Out of the 500 inhabitants that are not in a choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? Please indicate the probability as a percent. [VERBATIM; REQUIRED NUMERIC] percent [Answer = 25]

----------End Web pg ----------

**fiveside:** Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)? [VERBATIM; REQUIRED NUMERIC] [Answer = 30]

----------End Web pg ----------

**sixside:** Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of 70 throws how many times would the die show the number 6? [VERBATIM; REQUIRED NUMERIC] [Answer = 20]

----------End Web Pg ----------

**mushroom:** In a forest, 20% of the mushrooms are red, 50% are brown, and 30% are white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red? Please indicate the probability as a percent. [VERBATIM; REQUIRED NUMERIC] percent [Answer = 50]

----------End Web pg ----------

Probabilities can be difficult to calculate and interpret when you are trying to sort through a lot of information at once.

**your_ability:** How would you rate *your* ability to calculate and interpret probabilities when making decisions?
1 – Poor
2 – Fair
3 – Good
4 – Very good
5 – Excellent

----------End Web pg ----------

The survey is nearly complete. We have just a few more questions. [RANDOM ORDER IN TABLE]

**rq_1:** Does your local government have an emergency or disaster plan for your community?
0 – No
1 – Yes
2 – Not sure

**rq_2:** Do you know how to find the emergency broadcasting channel on the radio?
0 – No
1 – Yes
2 – Not sure

**rq_3:** In the past 30 days, have you seen or heard any messages that encourage people to take steps to be prepared for emergency situations in your community?
0 – No
1 – Yes
2 – Not sure

**rq_4:** In the last year, have you prepared a Disaster Supply Kit with emergency supplies like water, food and medicine that is kept in a designated place in your home?
0 – No
1 – Yes
2 – Not sure

**rq_5:** In the last year, have you prepared a small kit with emergency supplies that you keep at home, in your car or where you work to take with you if you had to leave quickly?
0 – No
1 – Yes
2 – Not sure

**rq_6:** In the last year, have you made a specific plan for how you and your family would communicate in an emergency situation if you were separated?
0 – No
1 – Yes
2 – Not sure

**rq_7:** In the last year, have you established a specific meeting place to reunite in the event you and your family cannot return home or are evacuated?
0 – No
1 – Yes
2 – Not sure

**rq_8:** In the last year, have you practiced or drilled on what to do in an emergency at home?
0 – No
1 – Yes
2 – Not sure

**rq_9:** In the last year, have you volunteered to help prepare for or respond to a major emergency?
0 – No
1 – Yes
2 – Not sure

**rq_10:** Have you taken first aid training such as CPR in the past five years**?**
0 – No
1 – Yes
2 – Not sure

----------End Web pg ----------

**income**: Was the estimated annual income for your household in 2020:
1 - Less than $50,000 [go to **inc50**]
2 - At least $50,000 but less than $100,000 [go to **inc100**]
3 - At least $100,000 but less than $150,000 [go to **inc150**]
4 - $150,000 or more [go to **inc200**]

----------End Web pg ----------

**inc_50**: Was the estimated annual income for your household in 2020:
1 - Less than $10,000
2 - $10,000 to less than $20,000
3 - $20,000 to less than $30,000
4 - $30,000 to less than $40,000
5 - $40,000 to less than $50,000

----------End Web pg ----------

**inc_100**: Was the estimated annual income for your household in 2020:
6 - $50,000 to less than $60,000
7 - $60,000 to less than $70,000
8 - $70,000 to less than $80,000
9 - $80,000 to less than $90,000
10 - $90,000 to less than $100,000

----------End Web pg ----------

**inc_150**: Was the estimated annual income for your household in 2020:
11 - $100,000 to less than $110,000
12 - $110,000 to less than $120,000
13 - $120,000 to less than $130,000
14 - $130,000 to less than $140,000
15 - $140,000 to less than $150,000

----------End Web pg ----------

**inc_200**: Was the estimated annual income for your household in 2020:
16 - $150,000 to less than $160,000
17 - $160,000 to less than $170,000
18 - $170,000 to less than $180,000
19 - $180,000 to less than $190,000
20 - $190,000 to less than $200,000
21 - $200,000 or more

----------End Web pg ----------

**edu:** What is the highest level of education you have COMPLETED?
1 - Less than high school
2 - High school / GED
3 - Vocational or Technical Training
4 - Some College; NO degree
5 - 2-year College / Associate's degree
6 - Bachelor's Degree
7 - Master's Degree
8 - PhD / JD (Law) / MD

----------End Web pg ----------

Research shows that information can influence the way that people answer survey questions. We would like to know if you generally read the information that comes before survey questions. To demonstrate that you have read this text, please ignore the question below and click on the blue dot.

**ign_instruct**: Which of the following devices do you typically use to answer surveys on the Internet?
1 - A computer
2 - A tablet (such as an iPad)
3 - A smart phone (such as an Android or iPhone)

----------End Web pg ----------

**comments:** Is there anything else that you would like us to know about how you receive, understand, or respond to information from the National Weather Service?