

## 2019 Kincade Fire Evacuation Household Survey

Erica D. Kuligowski<sup>a</sup>, Ruggiero Lovreglio<sup>b</sup>, Xilei Zhao<sup>c</sup>, Daniel Nilsson<sup>d</sup>

<sup>a</sup> RMIT University, 124 La Trobe Street, Melbourne, Vic 3000, Australia

<sup>b</sup> Massey University, Private Bag 102904, North Shore Auckland 0745, New Zealand

<sup>c</sup> University of Florida, 1949 Stadium Road, Gainesville, FL 32611, USA

<sup>d</sup> University of Canterbury, 69 Creyke Road, Christchurch 8041, New Zealand

\*Corresponding author: [erica.kuligowski@rmit.edu.au](mailto:erica.kuligowski@rmit.edu.au)

### Survey screening questions:

Q1a. Are you 18 years of age or older?

- Yes
- No

Q1b. Were you at home or in the area of Sonoma County, California when the Kincade fire occurred on October 23-28, 2019?

- Yes
- No
- Other, please explain \_\_\_\_\_

Please providing the ZIP code that best describes where you were when the Kincade fire occurred.  
(enter 5-digit ZIP code in the box provided)

\_\_\_\_\_

### Before the Kincade fire

The next set of questions relate to your understanding and actions before the Kincade fire.

Q2. Before the Kincade fire, did you know that wildfires could be a problem in your community?

- Yes
- No
- Not sure, please explain \_\_\_\_\_

Q3. Before the Kincade fire, how would you have described the possibility that a wildfire would **threaten your property**, on a scale from 1 to 5, where 1 signifies “not at all likely” and 5 signifies “very likely”? (Select only one)

**Note:** “Property” is defined here as the residence or home and surrounding land.

Not at all likely (that a wildfire would threaten my property)	Very likely (that a wildfire would threaten my property)
--	--

1	2	3	4	5
---	---	---	---	---

Q4. Before the Kincade fire, had you or others taken any measures to protect your residence from wildfires? (Select all that apply)

- No measures were taken
- Cleared or removed vegetation from property (for example, removed or trimmed trees, cleared brush)
- Removed or moved flammable items away from house (for example, woodpiles, gazebos, mulch or other ground cover)
- Installed sprinkler system (or other fire protection system) on or nearby house
- Modified residential structure
- Other, please explain \_\_\_\_\_
- I don't know or don't remember

Q5a. Did you have a household emergency plan for wildfires in place before the Kincade fire?

- Yes (Go to Q5b)
- No (Go to Q6)
- I don't know or don't remember

Q5b. If yes, what was the ultimate goal of this household emergency plan? (Select only one)

- The plan was for my family and/or me to evacuate (that is, leave and travel to a different, safer place) before the fire spread to my house
- The plan was for my family and/or me to stay at home
- I don't know or don't remember

Q6. Before the Kincade fire, how many times in the past 10 years did you evacuate because of a wildfire? (Select only one)

*Here, "evacuate" means to leave and travel to a different, safer place*

- 0 times (I never evacuated before the Kincade fire)
- 1 time
- 2-3 times
- 4-5 times
- 6 or more times
- I don't know or don't remember

**Home or place of residence at the time of the Kincade fire (October 23, 2019)**

The next set of questions relate to your home or place of residence at the time of the Kincade fire (October 23, 2019).

Q7. How long had you lived at that residence? (Select only one)

**Note:** *Residence is another word for home.*

- Less than 1 year
- 1-2 years
- 3-4 years
- 5-10 years
- 10 or more years
- I don't know or don't remember

Q8. Did you own or rent at that residence? (Select only one)

- Own
- Rent
- Other (please explain: \_\_\_\_\_)
- I don't know or don't remember

Q9a. Which of the following best describes the type of structure of your residence?

- Detached single family home
- Multi-family, 1-2 stories
- Multi-family, 3 or more stories
- Mobile or manufactured home
- Other (please specify) \_\_\_\_\_

Q9b. Which of the following best describes the material(s) on the outside of your residence?

- Brick
- Fiber-cement siding
- Stone
- Stucco
- Vinyl siding
- Wood
- Other building material \_\_\_\_\_
- I don't know or don't remember

Q9c. What type of roof materials did your residence have at the time of the fire?

- Asphalt shingles
- Clay or concrete tile
- Metal roofing
- Slate roofing
- Wood shingles or shakes
- Other \_\_\_\_\_
- I don't know or don't remember

Q9d. Please rate the extent to which you agreed or disagreed with each statement (before or at the time of the Kincade fire).

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

- I believed that my home was well-built and safe for a wildfire
- I believed that staying at home was safer than moving to a nearby building or shelter

**During the Kincade fire between Wednesday, Oct 23, 2019 and Monday, Oct 28, 2019**

**The next sets of questions ask about things during the Kincade fire between Wednesday, Oct 23, 2019 and Monday, Oct 28, 2019.**

Q10a. Before you decided to evacuate (or stay), did one or more **emergency officials** let you know that you had to evacuate immediately and/or that your area was under a **mandatory evacuation order**?

**Note:** An **emergency official** is anyone working in an official capacity for the Kincade fire, including officials from the police department, sheriff's office, fire department, emergency management agency, governor's office, or mayor's office.

Also, emergency officials can **let you know** about information in a variety of ways, including phone calls, text messages, in-person discussions, television, radio, and sirens or other types of alerts.

A **mandatory evacuation order** is a message where households in particular zones or neighborhoods are ordered to immediately move out of the area due to an imminent threat.

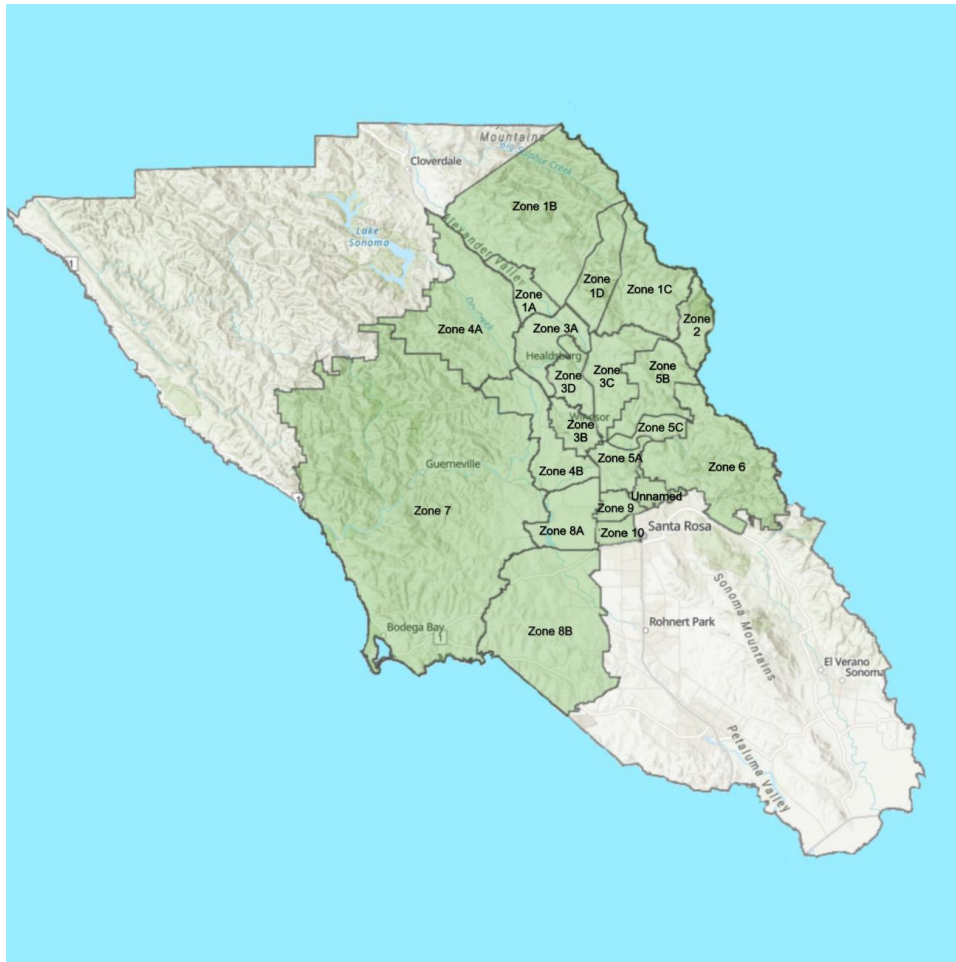
- Yes (Go to Q10b-g)
- No (Go to Q11a)

Q10b. What are the ways that one or more **emergency officials** let you know that you had to evacuate immediately and/or your area was under a mandatory evacuation order? (select all that apply)

- Email message
- Face-to-face (in-person or door-to-door)
- Loudspeaker or public address system
- Outdoor warning siren
- Radio
- Social media, such as Twitter or Facebook
- Telephone (landline or cell phone) with a live person
- Telephone (landline or cell phone) with a recorded message
- Television
- Text message – on a mobile communication device such as a cell phone
- Website (including streaming television, radio)
- Other (please explain: \_\_\_\_\_)
- I don't know or don't remember

The next five questions are going to ask you about the first time one or more **emergency officials** let you know that you had to evacuate immediately and/or that your area was under a **mandatory evacuation order**.

Q10c. The map, below, shows the evacuation zones for Sonoma County. Please click on the map below to indicate where you were when the emergency officials let you know.



Q10d. What day and what time did the emergency official(s) first let you know? Please indicate the date and the time as accurately as possible.

- Days listed separately: Wednesday, 10/23/19; Thursday, 10/24/19; Friday, 10/25/19; Saturday, 10/26/19; Sunday, 10/27/19; Monday, 10/28/19
- Times listed separately in 4 hours intervals beginning with 12:00 AM to 3:59 AM

Q10e. After first finding out from the emergency official(s), how much did you believe each of the following statements on a scale of 1 to 5, where 1 represents “did not believe” and 5 represents “fully believed”? (Select a number for each statement)

		Did not <u>believe</u>			Fully <u>believed</u>
1.	My home would be damaged or destroyed by fire	1	2	3	4 5
2.	My neighborhood would be damaged or destroyed by fire	1	2	3	4 5

Q10f. After first finding out from the emergency official(s), how much did you agree with each of the following statements on a scale of 1 to 5, where 1 represents “not likely” and 5 represents “extremely likely”? (Select a number for each statement)

		Not <u>likely</u>			Extremely <u>likely</u>
1.	I might become injured	1	2	3	4 5
2.	I might die	1	2	3	4 5
3.	Other people, pets or livestock might become injured	1	2	3	4 5
4.	Other people, pets, or livestock might die	1	2	3	4 5

Q10g. What was your immediate reaction when the emergency official(s) first let you know? (Select only one)

- No reaction; I continued my activities
- I waited for more information
- I tried to find more information
- I started preparing to act, and then waited
- I acted immediately (for example, evacuated or left the location, defended my property, took shelter)
- I don't know or don't remember

Q11a. Before you decided to evacuate (or stay), did **someone you know** tell you to evacuate or that a mandatory evacuation order was issued for your area?

**Note:** *Someone you know* could be a coworker, family member, friend, neighbor, or anyone else you know personally.

People can **tell** you information in a variety of ways, including phone calls, text messages, emails, and in-person discussions.

- Yes (Go to Q11b-h)
- No (Go to 12a)

Q11b. If yes, was **this person** your: (select all that apply)

- Coworker
- Family member
- Friend
- Neighbor
- Anyone else you know personally

Q11c. Thinking about the person or people you just selected, what were the ways they told you to evacuate or that your area was under a mandatory evacuation order? (select all that apply)

- Email message
- Face-to-face (in-person)
- Social media, such as Twitter or Facebook
- Telephone (landline or cell phone)
- Text message – on a mobile communication device such as a cell phone
- Other (please explain: \_\_\_\_\_)
- I don't know or don't remember

**The next five questions are going to ask you about the first time someone you know told you to evacuate or that a mandatory evacuation order was issued for your area.**

Q11d. The map, below, shows the evacuation zones for Sonoma County. Please click on the map below to indicate where you were when someone you know first told you.





Q11e. What day and what time did someone you know first tell you? Please indicate the date and the time as accurately as possible.

- Days listed separately: Wednesday, 10/23/19; Thursday, 10/24/19; Friday, 10/25/19; Saturday, 10/26/19; Sunday, 10/27/19; Monday, 10/28/19
- Times listed separately in 4 hours intervals beginning with 12:00 AM to 3:59 AM

Q11f. After first finding out from someone you know, how much did you believe each of the following statements on a scale of 1 to 5, where 1 represents “did not believe” and 5 represents “fully believed”? (Select a number for each statement)

		Did not <u>believe</u>			Fully <u>believed</u>
1.	My home would be damaged or destroyed by fire	1	2	3	4 5
2.	My neighborhood would be damaged or destroyed by fire	1	2	3	4 5

Q11g. After first finding out from someone you know, how much did you agree with each of the following statements on a scale of 1 to 5, where 1 represents “not likely” and 5 represents “extremely likely”? (Select a number for each statement)

		Not <u>likely</u>			Extremely <u>likely</u>
1.	I might become injured	1	2	3	4 5
2.	I might die	1	2	3	4 5
3.	Other people, pets, or livestock might become injured	1	2	3	4 5
4	Other people, pets, or livestock might die	1	2	3	4 5

Q11h. What was your immediate reaction when someone you know first told you? (Select only one)

- No reaction; I continued my activities
- I waited for more information
- I tried to find more information
- I started preparing to act, and then waited
- I acted immediately (for example, evacuated or left the location, defended my property, took shelter)
- I don't know or don't remember

**We will now ask you some questions about the fire and what you may have observed.**

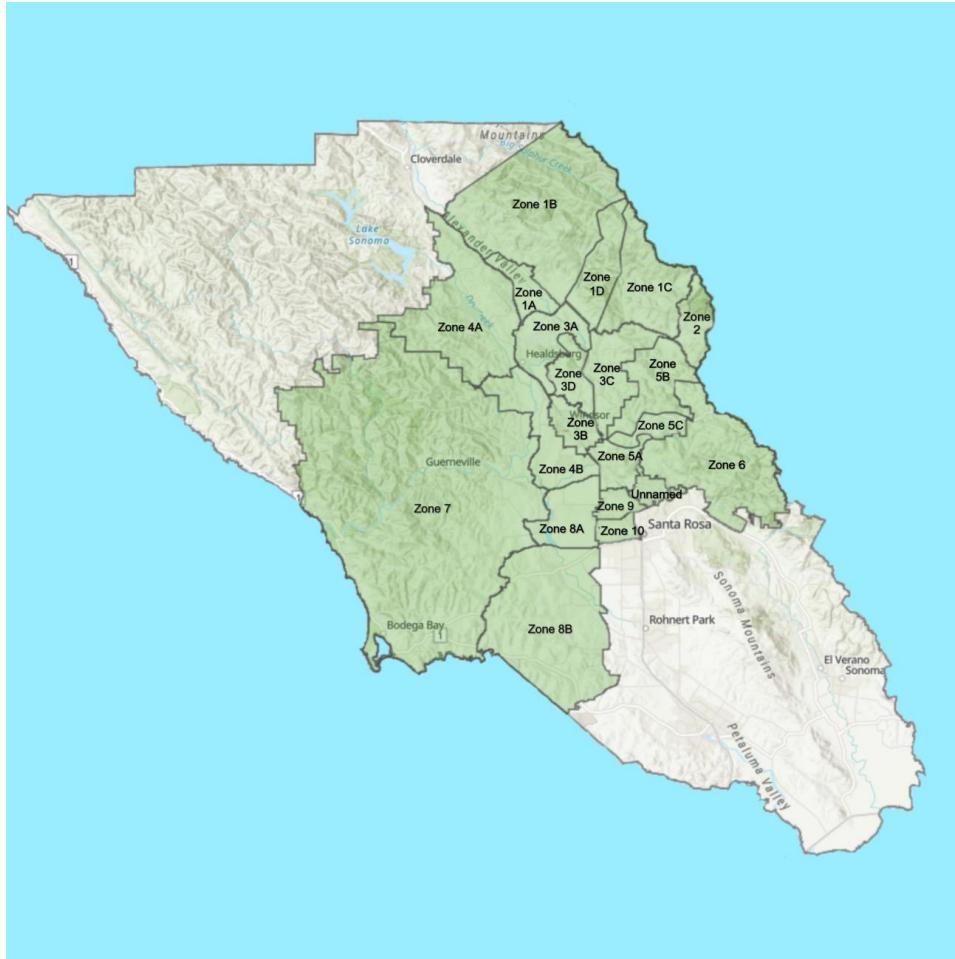
Q12a. Before you decided to evacuate (or stay), did you see, hear, or feel flames or embers in your immediate vicinity (that is, your neighborhood)? (mark all that apply)

**Note:** *Flames can be from burning trees, structures, or vehicles, for example.*

*Embers are small or larger pieces of burning or glowing materials flying past your property or landing on your property.*

- Yes, I observed flames in my vicinity (Go to Q12b-f)
- Yes, I observed embers in my vicinity (Go to Q12b-f)
- No, I did not observe flames or embers in my vicinity before making my decision (Go to Q13)

Q12b. The map, below, shows the evacuation zones for Sonoma County. Please click on the map below to indicate where you were when you first observed the flames or embers (or both) in your vicinity?



Q12c. What day and what time did you first observe the flames or embers (or both) in your vicinity? Please indicate the date and the time as accurately as possible.

- Days listed separately: Wednesday, 10/23/19; Thursday, 10/24/19; Friday, 10/25/19; Saturday, 10/26/19; Sunday, 10/27/19; Monday, 10/28/19
- Times listed separately in 4 hours intervals beginning with 12:00 AM to 3:59 AM

Q12d. After you first observed the flames or embers (or both), how much did you believe each of the following statements on a scale of 1 to 5, where 1 represents “did not believe” and 5 represents “fully believed”? (Select a number for each statement)

		Did not <u>believe</u>				Fully <u>believed</u>
1.	My home would be damaged or destroyed by fire	1	2	3	4	5
2.	My neighborhood would be damaged or destroyed by fire	1	2	3	4	5

Q12e. After you first observed the flames or embers (or both), how much did you agree with each of the following statements on a scale of 1 to 5, where 1 represents “not likely” and 5 represents “extremely likely”? (Select a number for each statement)

		Not <u>likely</u>				Extremely <u>likely</u>
1.	I might become injured	1	2	3	4	5
2.	I might die	1	2	3	4	5
3.	Other people, pets, or livestock might become injured	1	2	3	4	5
4	Other people, pets, or livestock might die	1	2	3	4	5

Q12f. What was your immediate reaction to observing the flames or embers (or both)? (Select only one)

- No reaction; I continued my activities
- I waited for more information
- I tried to find more information
- I started preparing to act, and then waited
- I acted immediately (for example, evacuated or left the location, defended my property, took shelter)
- I don't know or don't remember

**Now, we are discussing the decision you made in response to the Kincadee fire.**

Q13. In response to the Kincadee fire, what did you decide to do? (Select only one)

- I decided to stay in place
- I decided to evacuate (that is, leave and travel to a different, safer place)

Q14. The map, below, shows the evacuation zones for Sonoma County. Please click on the map below to indicate where you were when you made this decision?



Q15. What day and what time did you make this decision? Please indicate the date and the time as accurately as possible.

- Days listed separately: Wednesday, 10/23/19; Thursday, 10/24/19; Friday, 10/25/19; Saturday, 10/26/19; Sunday, 10/27/19; Monday, 10/28/19
- Times listed separately in 4 hours intervals beginning with 12:00 AM to 3:59 AM

Q17. At the moment you decided what to do, how much did you believe each of the following statements on a scale of 1 to 5, where 1 represents “did not believe” and 5 represents “fully believed”? (Select a number for each statement)

		Did not <u>believe</u>				Fully <u>believed</u>
1.	My home would be damaged or destroyed by fire	1	2	3	4	5
2.	My neighborhood would be damaged or destroyed by fire	1	2	3	4	5

Q18. At the moment you decided what to do, how much did you agree with each of the following statements on a scale of 1 to 5, where 1 represents “not likely” and 5 represents “extremely likely”? (Select a number for each statement)

		Not <u>likely</u>				Extremely <u>likely</u>
1.	I might become injured	1	2	3	4	5
2.	I might die	1	2	3	4	5
3.	Other people, pets, or livestock might become injured	1	2	3	4	5
4	Other people, pets, or livestock might die	1	2	3	4	5

**Now, we are discussing your actual response to the Kincade fire.**

Q19a. In Question 13, we asked about what you decided to do. Here, we want to ask about what you eventually DID in response to the Kincade fire. Please select the one response that best describes what **action** you took.

- I evacuated (that is, I left for a safer place) (Go to Q19b-d)
- I stayed in place (Go to Q20a-b)

Q19b. What were the reasons that you eventually left/evacuated? (Select all that apply)

- Seeing, hearing, smelling flames, embers, smoke, or heat from the fire
- Observing others evacuating (in person OR on TV, radio, or social media)
- Was afraid and/or felt danger for myself, my family or my friends
- Was afraid for my pets or livestock (or other farm animals)
- Finding out or receiving information about the fire (for example, location, intensity)
- My property caught fire
- I was being overcome by the effects of heat and/or smoke
- Police, fire or other emergency official(s) ordered me to leave
- My family, friends or neighbors advised or ordered me to leave
- Other, please explain: \_\_\_\_\_
- I don't know or don't remember

Q19c. Of the following reasons you just selected, what was the **main** reason you left? (select only one)

[The options that they selected in Q19b will be listed here for them to select only one]

Q19d. Did you do any of the following before leaving? (Select all that apply)

- I did not do anything before leaving
- Drove home (from a different location)
- Reunited with family members
- Reunited with others outside of family (for example, friends, neighbors, coworkers)
- Prepared family members and/or self (getting them dressed, used the bathroom)
- Reunited with or attend to pets or livestock (or other farm animals)
- Secured my home (for example, prepared house by turning off gas, turning off air conditioning, shut windows)
- Performed preparation actions (for example, tidied up garden or outdoors; put water on the house, vegetation and/or landscape)
- Packed items to take with me and/or loaded vehicle
- Told others what I was doing
- Told others about the fire, what was going on and/or what they should do
- Asked about what others were doing (or going to do)
- Planned an evacuation route (for example, travel directions)
- Identified and/or secured an evacuation destination
- Helped others prepare
- Other (please explain; \_\_\_\_\_)
- I don't know or don't recall

Q19d. How much time elapsed between when you decided to evacuate and when you actually left? Or, in other words: how much time did you take to prepare before you evacuated?

**Note:** Time could have been spent doing actions listed in the previous question, such as packing, planning, securing your home, or meeting with others?

Please use your best estimate: \_\_\_\_\_ hours and \_\_\_\_\_ mins

Q20a. If you did not evacuate, what were the reasons you didn't leave? (Select all that apply)

- I was not in an area ordered to evacuate
- I did not believe that I was in an area at risk of wildfires
- I did not think that there would be a fire
- I did not know anything about the fire
- I wanted or needed to do my job
- I observed others staying behind (in person OR on TV, radio, or social media)
- I wanted or needed to protect (or defend) my property
- I wanted or needed to take care of pets or livestock (or other farm animals)
- I wanted or needed to take care of a person (or persons) unable to evacuate
- I did not have the resources, for example, money or a vehicle
- I was physically unable to evacuate
- It was too late to leave and/or it was too dangerous to evacuate
- I thought that it was safer to stay in place
- Other (please explain: \_\_\_\_\_)
- I don't know or don't remember

20b. Of the following reasons you just selected, what was the **main** reason you stayed? (select only one)

[The options that they selected in Q20a will be listed here for them to select only one]

**The last set of questions is about you. Answers to these questions will help us learn how different types of people respond to wildfires.**

Q21. Do you consider yourself:

- Female
- Male
- Other, I identify as \_\_\_\_\_

Q22. Which of the following racial/ethnic groups best describes you? (Select one or more).

- American Indian or Alaskan Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White
- Other
- I prefer not to answer this question



Q23. How old are you? (Please enter your age at the time you are taking this survey, below)

\_\_\_\_\_ years old

Q24. What is the highest level of education you have completed? (Select only one)

- Less than high school diploma
- High school diploma or equivalent
- Some college but no degree
- Associate degree
- Bachelor degree
- Graduate degree
- I prefer not to answer this question

Q25. Thinking of all the people in your household, what was the total household income, including your own income, from all sources in 2019? (Select only one)

- Less than \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,999
- \$150,000 to \$174,999
- \$175,000 to \$199,999
- \$200,000 or more
- I prefer not to answer this question

Q26. Which of the following categories best describes your employment status at the time the Kincade fire started (on Wednesday, October 23, 2019)? (Select only one)

- Employed [including self-employed], working 1-20 hours per week
- Employed [including self-employed], working 21 - 40 or more hours per week
- Not employed
- Retired
- Disabled, not able to work
- Stay at home mom, dad, or other
- Other \_\_\_\_\_
- I prefer not to answer this question

Q27. How many people and pets including yourself lived in your household (or on your property) at the time the Kincade fire started (on Wednesday, October 23, 2019)?

**Note: Please mark "0" for none, or provide numbers for the following:**

\_\_\_\_\_ Children: under 13 years old

\_\_\_\_\_ Children: 13 years old to 17 years old

\_\_\_\_\_ Adults (including your own adult children): 18 years old to 64 years old

\_\_\_\_\_ Adults: 65 years old and older

\_\_\_\_\_ Pets

\_\_\_\_\_ Livestock or other farm animals

Q28a. Did you or someone in your household, including yourself, have a medical condition at the time of the Kincade fire?

- Yes
- No
- I prefer not to answer this question

Q28b. If yes, please list the medical condition(s): \_\_\_\_\_

Q29. Please use the space below to tell us anything else you would like to say about your experience with the Kincade fire on October 23 to 28, 2019.

---

---

---

*(Next screen...or end with the following statement)*

**We thank you for your time spent taking this survey.**

**Your response has been recorded.**