IRB NUMBER: 11841 IRB APPROVAL DATE: 12/22/2020

You are invited to participate in research regarding socially sustainable solutions for water, carbon and infrastructure resilience in Oklahoma. This study will ask you about your perceptions and experiences with weather/climate in Oklahoma, and to characterize and evaluate problem areas and potential solutions to weather/climate challenges. This is an important long-term study and we are looking for research partners throughout the state who are willing to share their experiences and views. We are contacting you because you indicated an interest in participating. You must be at least 18 years of age and be willing to provide your contact information to participate.

If you agree to participate, you will respond to an Internet survey that should take about 30 minutes to complete.

There are no risks or benefits.

If you participate, you will receive a $10 gift card, either mailed or emailed to you after you complete the survey.

Your participation is voluntary, and your responses will be de-identified before they are shared for research purposes or published. After removing all identifiers, we might share your data with other researchers or use it in future research without obtaining additional consent from you.

Even if you choose to participate now you may stop participating at any time and for any reason.

Data are collected via an online survey system that has its own privacy and security policies for keeping your information confidential.

If you have questions about this research, please contact:
Dr. Hank Jenkins-Smith
Institute for Public Policy Research and Analysis
University of Oklahoma
(405) 325-1720 or ippra@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.

Please print this document for your records. By providing information to the researcher(s), I am agreeing to participate in this research.

consent_18: Are you 18 years of age or older?
0 - No (If no – cannot participate)
1 - Yes

contact_consent: This project focuses on problems that are different across Oklahoma and it is important that we know where you live so that we can understand the problems in your area. Are you willing to provide us with your home address so that we can identify your area?
0 - No (If no – cannot participate)
1 - Yes

consent: Do you agree to participate in this study? [two buttons]
0 - No, I do not want to participate in this study
1 - Yes, I agree to participate in this study [IF **consent** = 0, skip to new page that says: "You have indicated that you do not want to participate in this study. If you have reached this page by accident and do wish to participate in this study, please contact our technical support staff at: (405) 325- 1720 or ippra@ou.edu."]

Thank you for participating in this study. The survey you are about to complete is different than most. We are not simply asking for opinions and preferences. We are asking for advice and guidance on how to tackle some of the biggest problems facing Oklahoma. While we will keep your identity strictly confidential, we are going to share the answers you provide with a team of scientists and policymakers across the state who are studying these problems and trying to develop creative solutions. Your responses will provide extremely valuable input into this process.

----------Page----------

First, we would like to get some background information about you.

age: How old are you? [verbatim; numeric]

gend: Are you male, female, or other?
0 - Female
1 - Male
2 - Other (please specify)
gend_specify: [verbatim]

hispanic: 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_specify: [verbatim]

----------Page----------

current_zip: What is the zip code at your current residence? [verbatim; numeric]

current_lngth: How many years have you lived at your current residence? [verbatim; numeric] years

adults: Including yourself, how many **adults age 18 and older** live in your current primary residence? [verbatim; numeric > 0]

children: How many **children age 17 and younger** live in your current primary residence? [verbatim; numeric]

----------Page----------

ok_lngth: How many years have you lived in Oklahoma? [verbatim; numeric] years

----------Page----------

home_lot: Which of the following best describes the property where you live?
1 - Urban
2 - Suburban
3 - Rural

----------Page----------

Water, land, and infrastructure affect prosperity and quality of life in many parts of Oklahoma. Scientists and decisionmakers working on this project are evaluating each of these resources and we want to know if you have any concerns about them.

We are currently thinking about three aspects when evaluating *water resources* in Oklahoma:

- Water availability: the supplies of water for various purposes, such as drinking, farming/ranching, recreation, or industrial processes
- Water quality: the suitability (cleanliness) of water for various purposes, such as drinking, farming/ranching, or recreation
- Water cost: the cost of water for various purposes, such as such as drinking, farming/ranching, or industrial processes

concern_water_availability: Do you have any concerns about *water availability* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

concern_water_quality: Do you have any concerns about *water quality* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

concern_water_cost: Do you have any concerns about the *cost of water* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

----------Page----------

We are currently thinking about two aspects when evaluating *land resources* in Oklahoma:

- Wildlife habitat: ecosystems that support animals and birds that people enjoy watching and hunting, such as butterflies, deer, quail, and turkey
- Soil quality: the suitability of soil for sustaining plants, animals, and livelihoods, such as productive farming and ranching

concern_land_wildlife: Do you have any concerns about *wildlife habitat* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

concern_land_soil: Do you have any concerns about *soil quality* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

----------Page----------

We are currently thinking about two aspects when evaluating *infrastructure* in Oklahoma:

- Electricity infrastructure: the generation facilities, substations, transmission lines, and distribution lines that deliver electricity to businesses and homes
- Transportation infrastructure: the roads, bridges, waterways, railways, and airways that facilitate transportation from place to place

concern_infra_electricity: Do you have any concerns about *electricity infrastructure* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

concern_infra_transportation: Do you have any concerns about *transportation infrastructure* in your region of Oklahoma?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

----------Page----------

If you were advising the scientists and policymakers who are working on this project, which of the following would you tell them require the most attention? Please rank the items from one (most attention) to six (least attention). [table; randomize; rank]

rank_water_availability: Water availability
rank_water_quality: Water quality
rank_water_cost: Water cost
rank_land_wildlife: Wildlife habitat
rank_land_soil: Soil quality
rank_infra_electricity: Electricity infrastructure
rank_infra_transportation: Transportation infrastructure

----------Page----------

Researchers and policymakers are also studying the impact of weather and climate hazards on *water*, *land*, and *infrastructure* resources in Oklahoma. The team is focusing on forecasts/predictions at three different time scales:

- Short-range weather forecasts that focus on the next day to two weeks
- Medium-range (seasonal) weather forecasts that focus on the next two weeks to 90 days
- Long-range climate predictions that focus on the next season to decade or more

Weather hazards that occur during the short-range weather time frame include tornadoes, hail, high winds, lightning, flooding/flash flooding and snow/ice storms.

How do you rate the risk of these weather hazards to people in Oklahoma? [table; randomize]

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

risk_hail: Hail
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

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

risk_lightning: Lightning
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

risk_flood: Flooding/flash flooding
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

risk_snow_ice: Snow/ice storms
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

----------Page----------

Did you experience any of these weather hazards in the last 6 months? [table; randomize]

experience_tornado: Tornadoes
0 - No
1 - Yes

experience_hail: Hail
0 - No
1 - Yes

experience_wind: High winds
0 - No
1 - Yes

experience_lightning: Lightning
0 - No
1 - Yes

experience_flood: Flooding/flash flooding
0 - No
1 - Yes

experience_snow_ice: Snow/ice storms
0 - No
1 - Yes

----------Page----------

When you think about the next 25 years in Oklahoma, do you think the risk (frequency and severity) of these weather hazards will increase, decrease, or stay about the same? [table; randomize]

future_tornado: Tornadoes
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_hail: Hail
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_wind: High winds
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_lightning: Lightning
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_flood: Flooding/flash flooding
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_snow_ice: Snow/ice storms
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

----------Page----------

Hazards that occur during the medium-range (seasonal) weather time frame include:

- Flash drought: periods of intense drought that arise quickly and last for a few weeks
- Pluvials: periods of excessive precipitation/rain that last for a few weeks
- Heat waves: periods of excessively hot temperatures that last for a few weeks
- Cold spells: periods of excessively cold temperatures that last for a few weeks

How do you rate the risk of these seasonal hazards to people in Oklahoma? [table; randomize]

risk_flash_drought: Flash drought
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

risk_pluvial: Pluvials (periods of excessive precipitation/rain)
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

risk_heat_wave: Heat waves
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

risk_cold_spell: Cold spells
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

----------Page----------

Did you experience any of these seasonal hazards in the last 6 months? [table; randomize]

experience_flash_drought: Flash drought
0 - No
1 - Yes

experience_pluvial: Pluvials (periods of excessive precipitation/rain)
0 - No
1 - Yes

experience_heat_wave: Heat waves
0 - No
1 - Yes

experience_cold_spell: Cold spells
0 - No
1 - Yes

----------Page----------

When you think about the next 25 years in Oklahoma, do you think the risk (frequency and severity) of these seasonal hazards will increase, decrease, or stay about the same? [table; randomize]

future_flash_drought: Flash drought
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_pluvial: Pluvials (periods of excessive precipitation/rain)
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_heat_wave: Heat waves
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_cold_spell: Cold spells
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

----------Page----------

There are multiple hazards that occur during the long-range climate time frame, but one of the most common in Oklahoma is long-term drought, which can last for several months.

risk_long_drought: How do you rate the risk of long-term drought to people in Oklahoma?
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

experience_long_drought: Did you experience long-term drought in the last 6 months?
0 - No
1 - Yes

future_long_drought: When you think about the next 25 years in Oklahoma, do you think the risk (frequency and severity) of long-term drought will increase, decrease, or stay about the same?
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase

5 - Significantly increase

----------Page----------

In addition to weather and climate hazards, Oklahoma also experiences other natural hazards, including wildfires and earthquakes.

How do you rate the risk of these hazards to people in Oklahoma? [table; randomize]

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

risk_earthquake: Earthquakes
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

Did you experience any of these hazards in the last 6 months? [table; randomize]

experience_wildfire: Wildfires
0 - No
1 - Yes

experience_earthquake: Earthquakes
0 - No
1 - Yes

When you think about the next 25 years in Oklahoma, do you think the risk (frequency and severity) of these hazards will increase, decrease, or stay about the same? [table; randomize]

future_wildfire: Wildfires
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

future_earthquake: Earthquakes
1 - Significantly decrease
2 - Decrease
3 - Stay about the same
4 - Increase
5 - Significantly increase

----------Page----------

Some people have strong feelings about their city/town and state. Others don't have such strong feelings. We are trying to measure these feelings among different people in Oklahoma. Can you tell us how much you agree or disagree with the following statements? There are no right or wrong answers; just give us your gut feeling. [table; randomize]

okfeel_hap: I feel happy when I am in Oklahoma.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

okfeel_sec: I feel secure when I am in Oklahoma.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

okfeel_cho: If I could live anywhere in the US, I would choose to live in Oklahoma.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

okfeel_bel: I don't feel like I belong in Oklahoma.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

okfeel_fut: I don't see myself living in Oklahoma in the future.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

okfeel_att: I am attached to Oklahoma.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

okfeel_who: Living in Oklahoma says a lot about who I am.
1 - Strongly disagree
2 - Disagree
3 - Neither agree/disagree
4 - Agree
5 - Strongly agree

----------Page----------

As you may know, the issue of global climate change has been the subject of public discussion over the last few years.

glbcc: In your view, are greenhouse gases, such as those resulting from the combustion of coal, oil, natural gas, and other materials, causing average global temperatures to rise?
0 - No
1 - Yes

----------Page----------

glbcc_cert: On a scale from zero to ten, where zero means *not at all certain* and ten means *completely certain*, how certain are you that greenhouse gases are/are not ["are" if **glbcc** = 1; "are not" if **glbcc** = 0] causing average global temperatures to rise?
0 - Not at all certain
1
2
3
4
5
6
7
8
9
10 - Completely certain

glbcc_risk: On a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how much risk do you think global warming poses for people and the environment?
0 - No risk
1
2
3
4
5
6
7
8
9
10 - Extreme risk

glbwrm_ok: In your view, is global warming causing the weather patterns in Oklahoma to change?
0 - No
1 - Yes
2 - Don't know

----------Page----------

Solving problems as a group or community can be contentious and technically complex, so getting information you can trust is important. How much do you trust information from the following groups and organizations? [table; randomize]

trust_policy: State and local policymakers and elected officials
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

trust_agencies: State and local agencies that regulate water, land, and infrastructure resources

1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

trust_private: Private companies whose operations use water, land, and infrastructure resources
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

----------Page----------

party: Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?
1 - Democratic party
2 - Republican party (or GOP)
3 - Independent
4 - Other party (Please specify)
party_spec: [verbatim]

----------Page----------

[If **party** = 1 or 2]

iden: Would you call yourself a strong [Democrat if **party** = 1; Republican if **party** = 2] or a not very strong [Democrat if **party** = 1; Republican if **party** = 2]?
2 - Strong
1 - Not very strong

----------Page----------

[If **party** = 3 or 4]

lean: Do you think of yourself as closer to the Republican or Democratic Party?
1 - Democratic Party
2 - Republican Party
3 - Neither

----------Page----------

ideol: On a scale of political ideology, individuals can be arranged from strongly liberal to strongly conservative. Which of the following categories best describes your views?
1 - Strongly liberal
2 - Liberal
3 - Slightly liberal
4 - Middle of the road
5 - Slightly conservative
6 - Conservative
7 - Strongly conservative

----------Page----------

vote_ loc: Do you usually vote in *local elections*, such as mayor, city council, and school board elections?
0 - No

1 - Yes

talk_politics_friends: How often do you talk about politics and policy with people you know, like friends and family?
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Frequently

talk_politics_strangers: How often do you talk about politics and policy with people you don't know, such as on Facebook or Twitter?
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Frequently

att_politics: Do you pay attention to current conversations about policies, development, and politics in your local area?
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Frequently

----------Page----------

If you were in charge of solving contentious and technically complex problems in Oklahoma, how much of a role would you give to the following? Please assign a percentage to each of the following, totaling 100%. [table; randomize; must add to 100; show calculator]

role_policy: Policymakers and elected officials [verbatim; numeric]
role_science: Scientists and technical experts [verbatim; numeric]
role_public: Members of the general public [verbatim; numeric]
role_business: Businesses and entrepreneurs [verbatim; numeric]
role_nonprofit: Nonprofit organizations [verbatim; numeric]

----------Page----------

Next, we have some questions about land and land management practices in Oklahoma.

rural_prop: Do you own or manage any land (property) *that is not in an urban area or subdivision*?
0 - No
1 - Yes

----------Page----------

[if **rural_prop** = 1]

rural_prop_size: About how large is the property you own or manage? If you own or manage multiple properties, please add them together.
1 - Less than 1 acre
2 - 1 to 5 acres
3 - 6 to 10 acres
4 - 11 to 40 acres

5 - 41 to 80 acres
6 - 81 to 160 acres
7 - 161 to 320 acres
8 - 321 to 640 acres
9 - 641 to 2,000 acres
10 - More than 2,000 acres

prop_live: Do you live on this property?
0 - No
1 - Yes

prop_farm: Do you use this property for ranching or farming?
0 - No
1 - Yes

----------Page----------

[if **rural_prop** = 1]

prop_manage: Many people in rural areas actively manage some portions of their property (e.g., farm, hay, graze, burn, harvest, or plant trees) and let other portions go unmanaged for extended periods of time. About what percentage of the property that you own or manage is ***actively managed***?
1 - Almost none of the property is actively managed
2 - Less than 25%
3 - About 25%
4 - About 50%
5 - About 75%
6 - More than 75%
7 - Almost all of the property is actively managed

----------Page----------

[if **rural_prop** = 1 and **prop_manage** < 7]

unmanage_why: Can you briefly explain why you ***do not*** actively manage some portions of the property you own or manage? For example, it is too expensive, not necessary, or you want it to "return to nature." [verbatim]

----------Page----------

[if **rural_prop** = 1]

Property owners and managers engage in land management practices for a wide variety of reasons. How important are these factors when ***you*** make land management decisions? [random table]

manage_imp_aesth_apl: Aesthetic appeal
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_soil_hlth: Soil health
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important

5 - Extremely important

manage_imp_soil_prod: Soil productivity
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_water_qual: Water quality
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_livestock_qual: Livestock production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_forage_qual: Forage production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_crop_qual: Crop production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_timber_qual: Timber production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_water_quany: Water quantity (availability)
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_wildlife: Wildlife habitat
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important

5 - Extremely important

manage_imp_wildfire: Wildfire risk
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_carbon: Carbon storage
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_othr: Something else
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

manage_imp_othr_spec: [verbatim]

----------Page----------

[if **rural_prop** = 0]

Land management practices are important for a variety of reasons. When you think about land management in *sparsely populated rural areas* of Oklahoma, how important are these factors to *you personally*? [random table]

sparse_imp_aesth_apl: Aesthetic appeal
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_soil_hlth: Soil health
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_soil_prod: Soil productivity
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_water_qual: Water quality
1 - Not important
2 - Slightly important

3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_livestock_qual: Livestock production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_forage_qual: Forage production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_crop_qual: Crop production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_timber_qual: Timber production
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_water_quany: Water quantity (availability)
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_wildlife: Wildlife habitat
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_wildfire: Wildfire risk
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_carbon: Carbon storage
1 - Not important
2 - Slightly important

3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_othr: Something else
1 - Not important
2 - Slightly important
3 - Moderately important
4 - Very important
5 - Extremely important

sparse_imp_othr_spec: [verbatim]

----------Page----------

Oklahoma faces a variety of challenges related to land and land management. Eastern redcedar encroachment is one of these challenges. Due to past and current land management decisions (primarily fire exclusion and suppression), eastern redcedar trees are rapidly spreading throughout the state, threatening both forests and rangelands.

In addition to transforming native ecosystems, eastern redcedar encroachment negatively impacts Oklahoma in multiple ways. It reduces forage and livestock production, water availability, and habitat for native animals and birds (such as the prairie chicken and bobwhite quail). Eastern redcedar is also highly flammable, so encroachment significantly increases wildfire risk throughout the state, both in rural and urban areas.

redcedar_know: Before reading this information, had you heard about eastern redcedar encroachment?
0 - No
1 - Yes
2 - Not sure

----------Page----------

[if **rural_prop** = 1]

redcedar_you: Is eastern redcedar encroachment an issue on the property you own or manage?
0 - No
1 - Yes
2 - Not sure

----------Page----------

[**redcedar_you** = 1]

redcedar_you_do: Have you done anything to manage eastern redcedar encroachment on the property you own or manage?
0 - No
1 - Yes

----------Page----------

[**redcedar_you_do** = 0]

redcedar_you_do_no: Can you briefly explain why you have not done anything to manage eastern redcedar encroachment on the property you own or manage? Are there any obstacles or challenges you face? [verbatim]

----------Page----------

[**redcedar_you_do** = 1]

redcedar_you_do_yes: Can you briefly explain what you have done to manage eastern redcedar encroachment on the property you own or manage? [verbatim]

----------Page----------

Based on your current understanding...

redcedar_risk_state: How much risk does eastern redcedar encroachment pose to the *state of Oklahoma*?
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

redcedar_risk_you: How much risk does eastern redcedar encroachment pose to *you personally*?
1 - No risk
2 - Low risk
3 - Moderate risk
4 - High risk
5 - Extreme risk

----------Page----------

Eastern redcedar encroachment is a public issue that affects everyone in the state, but much of it grows on private property where individuals make and pay for management decisions.

redcedar_decide: In your opinion, *who should make decisions* on the management of eastern redcedar encroachment on private property in Oklahoma?
1 - Only state agencies
2 - Mostly state agencies
3 - An even mix of state agencies and property owners/managers
4 - Mostly property owners/managers
5 - Only property owners/managers

redcedar_pay: In your opinion, *who should pay to implement decisions* on the management of eastern redcedar encroachment on private property in Oklahoma?
1 - Only state agencies
2 - Mostly state agencies
3 - An even mix of state agencies and property owners/managers
4 - Mostly property owners/managers
5 - Only property owners/managers

----------Page----------

State officials in Oklahoma are considering a program that would provide financial assistance (e.g., grants and low interest loans) to help property owners and managers remove eastern redcedar trees [**redcedar_vote_program:** by cutting them down | using controlled burns (prescribed fires)]. The program is expensive, but it will significantly reduce eastern redcedar encroachment in Oklahoma. This reduction will increase forage and livestock production, water availability, and habitat for native animals and birds. It will also decrease wildfire risk throughout the state.

redcedar_vote: Imagine that government officials were asking you to vote on the program. If it would not cost you anything, would you vote for a program that provides financial assistance to help property owners and managers remove eastern redcedar trees?
1 - Definitely vote ***against*** the program
2 - Probably vote ***against*** the program
3 - Not sure
4 - Probably vote ***for*** the program
5 - Definitely vote ***for*** the program

----------Page----------

[ask if **redcedar_vote** = 4 or 5]

redcedar_wtp: Would you vote ***for*** the eastern redcedar removal program if you had to pay a one-time fee of [**redcedar_bid**: $1:500] to support land management in Oklahoma?
0 - No (vote ***against*** the program)
1 - Yes (vote ***for*** the program)
2 - Not sure

----------Page----------

[ask if **redcedar_wtp** = 1]

redcedar_wtp_con_yes: On a scale from zero to ten, where zero means not at all certain and ten means completely certain, how certain are you that you would vote ***for*** the program if you had to pay a one-time fee of [$**redcedar_bid**]?
0 - Not at all certain
1
2
3
4
5
6
7
8
9
10 - Completely certain

----------Page----------

[ask if **redcedar_wtp** = 0]

redcedar_wtp_con_no: On a scale from zero to ten, where zero means not at all certain and ten means completely certain, how certain are you that you would vote ***against*** the program if you had to pay a one-time fee of [$**redcedar_bid**]?
0 - Not at all certain
1
2
3
4

5
6
7
8
9
10 - Completely certain

----------Page----------

[ask if **redcedar_wtp** = 1]

Can you explain why you would vote *for* the program? Please select all that apply.
redcedar_wtp_yes_livestock: To increase *forage and livestock* production in Oklahoma
redcedar_wtp_yes_water: To increase *water availability* in Oklahoma
redcedar_wtp_yes_habitat: To protect/restore *habitat for native animals and birds* in Oklahoma
redcedar_wtp_yes_fire: To decrease *wildfire risk* in Oklahoma
redcedar_wtp_yes_othr: Something else (please specify)
redcedar_wtp_yes_othr_spec: [verbatim]

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

[ask if **redcedar_vote** = 1 or 2 or **redcedar_wtp** = 0]

redcedar_comm_agnst: Can you explain why you would vote *against* the program? [verbatim]

----------Page----------

[ask if **redcedar_vote** = 3 or **redcedar_wtp** = 2]

redcedar_comm_unsur: Can you explain why you are *not sure* if would vote for the program? [verbatim]

----------Page----------

redcedar_wtp_othr_ok: Do you think the average Oklahoman would vote *for* the redcedar removal program if they had to pay a one-time fee of [$**redcedar_bid**]?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

----------Page----------

redcedar_you_apply: If Oklahoma were to implement an eastern redcedar removal program, would you or someone you know personally apply for financial assistance?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

----------Page----------

This set of questions is nearly complete. We have just one more thing to ask you about.

There are multiple ways to remove eastern redcedar trees. Property owners and managers can mechanically remove them by uprooting or cutting them down or they can burn them using prescribed fires (also known as controlled burns). There are pros and cons of each approach, but most experts agree that ***prescribed fire*** (low intensity, managed fire) is the most cost effective and ecologically favorable way to manage eastern redcedar encroachment. Prescribed fire works best on relatively small tress (less than 9' tall) and nearly all vegetation in Oklahoma regrows following fire.

redcedar_fire_support: Do you support using ***prescribed fire*** to manage eastern redcedar encroachment in Oklahoma?
1 - Strongly oppose
2 - Oppose
3 - Unsure
4 - Support
5 - Strongly support

----------Page----------

[**redcedar_fire_support** < 4]

Can you explain why you oppose or are unsure about using ***prescribed fire*** to manage eastern redcedar encroachment in Oklahoma? Please select all that apply.
redcedar_fire_oppose_smoke: Concerns about smoke from fires
redcedar_fire_oppose_escape: Concerns about the fire escaping
redcedar_fire_oppose_infra: Concerns about possible damage to infrastructure
redcedar_fire_oppose_financial: Concerns about financial liability
redcedar_fire_oppose_wildlife: Concerns about potential harm to wildlife
redcedar_fire_oppose_othr: Something else (please specify)
redcedar_fire_oppose_othr_spec: [verbatim]

----------Page----------

The survey is nearly complete. We have just a few more questions. The first set is about how cities clean wastewater.

Treating and cleaning wastewater can be an energy and cost intensive process. One process, called ***aeration***, consumes about 70% of electricity used in wastewater treatment plants (WWTP). During aeration, air is pumped through bubble diffusers to help clean the water. Aeration is a necessary component of treating wastewater, but the more electricity that is used for aeration, the more it costs the city/town.

City and town leaders are looking to save money. One possible way to reduce costs is to decrease energy use at the WWTP by only aerating wastewater to the necessary extent rather than at full blast continually. To do this, cities and towns would need to implement updated aeration control technology which is more efficient in aerating water. Aeration control technology allows water to be aerated continuously if needed but is automated to aerate less once the water is sufficiently treated. Aeration control technology is already used in some larger communities, but in smaller communities, water is typically aerated at full capacity all the time. This means that up to 40% of the aeration done in smaller communities may be unnecessary.

There are two primary reasons why many smaller communities haven't updated their aeration processes. The first is cost. The average cost to implement more efficient aeration is about $150,000. The second is training. WWTP employees would need to be trained on the new technology, which can take up to two hours. Many smaller communities are also unaware of the potential savings, which could be as much as $100,000 per year in electricity costs.

aeration_interest: If your community were considering implementation of aeration control, how interested would you be in seeing your community adopt this automated technology?
1 - Not at all interested

2 - Somewhat interested
3 - Moderately interested
4 - Very interested
5 - Extremely interested

aeration_trust: How much trust do you have that an automated aeration control process would maintain a high level of water safety compliance?
1 - No trust
2 - Low trust
3 - Moderate trust
4 - High trust
5 - Complete trust

aeration_energy: How important is the energy efficiency component of the automated aeration control process to you?
1 - Not at all important
2 - Somewhat important
3 - Moderately important
4 - Very important
5 - Extremely important

aeration_support: If your community included the costs of implementing aeration control as part of a bond process, would you support the bond if it meant your property taxes might increase by as much as $30 per year for 5 years?
1 - Definitely no
2 - Probably no
3 - Unsure
4 - Probably yes
5 - Definitely yes

----------Page----------

education: 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

----------Page----------

inc: Was the estimated annual income for your household in 2022:
1 - Less than $50,000 [skip to **inc50**]
2 - At least $50,000 but less than $100,000 [skip to **inc100**]
3 - At least $100,000 but less than $150,000 [skip to **inc150**]
4 - $150,000 or more [skip to **inc200**]

income_people: Including yourself, how many people contributed to the annual income for your household in 2022? [verbatim; require numeric > 0]

----------Page----------

inc50: Was the estimated annual income for your household in 2022:
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

----------Page----------

inc100: Was the estimated annual income for your household in 2022:
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

----------Page----------

inc150: Was the estimated annual income for your household in 2022:
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

----------Page----------

inc200: Was the estimated annual income for your household in 2022:
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

----------Page----------

As part of this project, we are inviting a select group of people to participate in a citizen science initiative where we are asking participants to provide pictures of a nearby landscape using smartphone app called **Field Photo 2**. In exchange for participating, participants will receive an extra $10 gift card.

smartphone: Do you have a smartphone that can download applications and take pictures?
0 - No
1 - Yes

citizen_science: Are you willing to download and use **Field Photo 2** to provide pictures of a nearby landscape?
0 - No
1 - Yes

----------Page----------

[If **norman_area** = 1]

We are also inviting a select group of people who live in central Oklahoma to participate in a project that will focus on engineering and community development. The project will involve a few short surveys and an in-person workshop that will take place in Norman on **Friday, April 21, 2023**. We are still working on the details, but the workshop will begin around 9:00 AM and conclude around 3:00 PM. Breakfast and lunch will be provided.

Participants will receive a $100 gift card in appreciation for participating in the workshop.

cinr_participate: Are you willing (and able) to participate in this workshop?
0 - No
1 - Yes
2 - Possibly (please send me more information)

Is there anything we can do to make it easier or more likely that you will participate? Please select all that apply.
cinr_childcare: Provide childcare
cinr_changedate: Change the date (to Saturday, April 22, 2023)
cinr_activity: Organize a side activity, like a tour of the OU campus
cinr_othr: Something else (please specify)
cinr_othr_spec: [verbatim]

----------Page----------

Thank you very much for completing this survey. Your responses will help our team of scientists and policymakers identify and solve some of the biggest problems facing Oklahoma. As a token of our appreciation, you will be receiving a $10 gift card by mail or email in the next few weeks.

giftcard_selection: Please select the type of gift card you would most like to receive from the four options shown below. You will be able to change your selection each time you complete the survey. Please note, if you do not select from the choices below, we will select a $10 Walmart gift card for you.
1 - $10 Walmart gift card
4 - $10 Amazon **e-card (will be sent via email)**

Please verify that our records are correct: [verbatim; autofill with prior data if available; require response]
confirm_fname: First name: [verbatim]
confirm_lname: Last name: [verbatim]
confirm_address: Address: [verbatim]
confirm_city: City: [verbatim]
state: Oklahoma
confirm_zip: Zip: [verbatim; 5-digit numeric]
confirm_county: County: [drop down list of counties]
confirm_phone: Phone: [verbatim; numeric
confirm_email: Email: [verbatim]

----------Page----------

[If **smartphone** = 1 and **citizen_science** = 1]

Thank you for volunteering to participate in our citizen science project! To participate, please follow these directions:

(1) Use your smartphone application store (such as the Apple App Store or Google Play) to find and download **Field Photo 2**

(2) Open **Field Photo 2** and create an account using the email address we have on file: [autofill]

(3) Follow these instructions to take and upload pictures of a nearby landscape within 1 week of completing this survey. [video in webpage: http://www.eomf.ou.edu/static/Field%20Photo%20Animation%20Draft%2003.mp4]

(4) That's it! We will watch for your pictures and mail you a gift card within a few weeks of receiving them!

----------Page----------

Thank you very much for your participation in the Oklahoma Weather, Society and Government Survey! We greatly appreciate your time and attention. As a token of our appreciation, you will be receiving a $10 gift card by mail or email within the next few weeks.