

CLIMATE CHANGE, ENVIRONMENTAL CHALLENGES AND VULNERABLE COMMUNITIES:

Assessing Legacies of the Past,
Building Opportunities for the Future

EXECUTIVE SUMMARY



FOREWORD

The Joint Center for Political and Economic Studies is grateful to the Texas Health Institute (THI) for a partnership that enabled us to develop a framework for assessing national research and programs on climate change and environmental priorities for vulnerable populations, especially communities of color.

This report, Joint Center research project *Climate Change, Environmental Challenges and Vulnerable Communities: Assessing Legacies of the Past, Building Opportunities for the Future*, and its Executive Summary offer guidance to advocates, policymakers, researchers and others who must set priorities, so that they can avoid duplication, maximize the use of scarce resources and encourage the development of policies that engage diverse populations while bringing environmental justice to their communities.

The report was prepared for the Joint Center by THI with project support from the U.S. Forest Service, U.S. Department of Agriculture.

We offer special thanks to members of the THI Project Team who prepared this report: Dennis Andrulis, Ph.D., M.P.H., Nadia Siddiqui, M.P.H. and Maria Rascati Cooper, M.A. We also are grateful to Gina E. Wood, Kellee James and Clori Jones of the Joint Center for their guidance and support.

Finally, we want to offer our appreciation to members of the Commission to Engage African Americans on Climate Change who have provided content recommendations, direction and support throughout all phases of this project.

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INTRODUCTION

Vulnerability to climate change differs substantially across regions, communities and even households, and the communities that are most vulnerable to climate change also face poverty, health disparities, and other social inequities. Recognizing that these socio-economic challenges impede the resilience, health, and prosperity of communities, the recent Progress Report of the Interagency Climate Change Adaptation Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy sets forth as one of its guiding principles that policymakers should prioritize helping the people, places and infrastructure that are the most vulnerable to climate impacts, and meaningfully involve these same communities in designing and implementing adaptation plans.

As the Progress Report notes, helping vulnerable people and places reduce their exposure and sensitivity to climate change and improve their capacity to predict, prepare for, and avoid adverse impacts requires thoughtful planning. Such planning, in turn, requires a comprehensive understanding of the status and scope of research, programs and actions on climate change and environmental challenges for vulnerable communities, particularly as they relate to eliminating disparities and advancing health equities across the range of climate and environmental issues. Notwithstanding recent research and advocacy in the field, this kind of comprehensive assessment has not been undertaken, leaving policymakers with insufficient data with which to implement the Progress Report's recommendations and other policy priorities. As such, this research offers direction and guidance to advocates, policymakers, scholars and others on priorities and gaps that leverage limited resources, prevent unnecessary duplication, and encourage the development and consistent implementation of policies and programs that appropriately engage racially and ethnically diverse populations in climate change and bring environmental justice to communities.

A growing body of evidence suggests that certain populations are more vulnerable to the effects of a changing climate. Specifically, these individuals and their communities—due to the socioeconomic status, geography, racial and ethnic health disparities and lack of access to care—are likely to face greater susceptibility to such events. Moreover, the resultant frequency and intensity of impact from storms, wildfires, pollution, drought and other events that have been related to a changing climate will differ across areas where they reside.

This report draws from the previously described social vulnerability models and other resources to examine the effects of extreme weather events and climate-related challenges among vulnerable populations and highlighting opportunities for future focus. The intent of this research is to provide an inventory of available

baseline data and prior research as well as a compendium of resources on policies and programs to inform public health practitioners, policymakers, advocates, and others. Drawing from these findings, this report also offers recommendations to develop future policies and priorities that incorporate vulnerable populations into both their scope and goals.

RESEARCH DESIGN

The geographic focus for this report was a six state region of the southern United States: Arizona, Arkansas, Louisiana, New Mexico, Oklahoma and Texas. In selecting this region, the project team developed an analytical framework drawing from peer-review research, seminal reports and publicly available data from national, state and local sources. It applied a vulnerability framework specific to climate change around four dimensions: hazard, temporal reference, system and attribute of concern. This vulnerability framework guided the analysis of 16 indicators selected and categorized according to: social and economic factors (e.g. poverty); climate and environmental concerns (e.g. air quality); health disparities in exposure to environmental hazards (e.g. difference in racial and ethnic populations share of health risk from exposure to air toxins versus their share of the population); and adaptation programs and policies (e.g. states with a climate change action plan). A weighted analysis of these indicators revealed a cluster of southern states as, collectively, among the most at-risk to climate change. With valuable input from the Joint Center for Political and Economic Studies as well as the members of the Commission to Engage African Americans on Climate Change, the project team decided to focus on the southern states within the EPA's Region 6 and to include Arizona due to its high level of diversity, especially in Native American/ American Indian populations.

The project team undertook a review of literature for this region to identify prior resources describing climate change effects among diverse and low income communities. To complement this information, the project team identified current programs and policies within the six states using a systematic search strategy. Key informants were sought throughout the region to complement findings from data and existing research, providing perspective on program effectiveness, leading climate challenges in their state and region, as well as a suggested future climate change priorities. Publicly available data measures on demography, climate and extreme weather events, health and health access were overlaid using Geographic Information Systems (GIS) tools and presented in a series of regional maps. Climate events that were examined included: air pollution (ozone, particulate matter and industrial toxins) and extreme weather events (wildfires, water shortage, drought, extreme heat, hurricanes and flooding).

MAJOR FINDINGS

Common climate threats and population vulnerability.

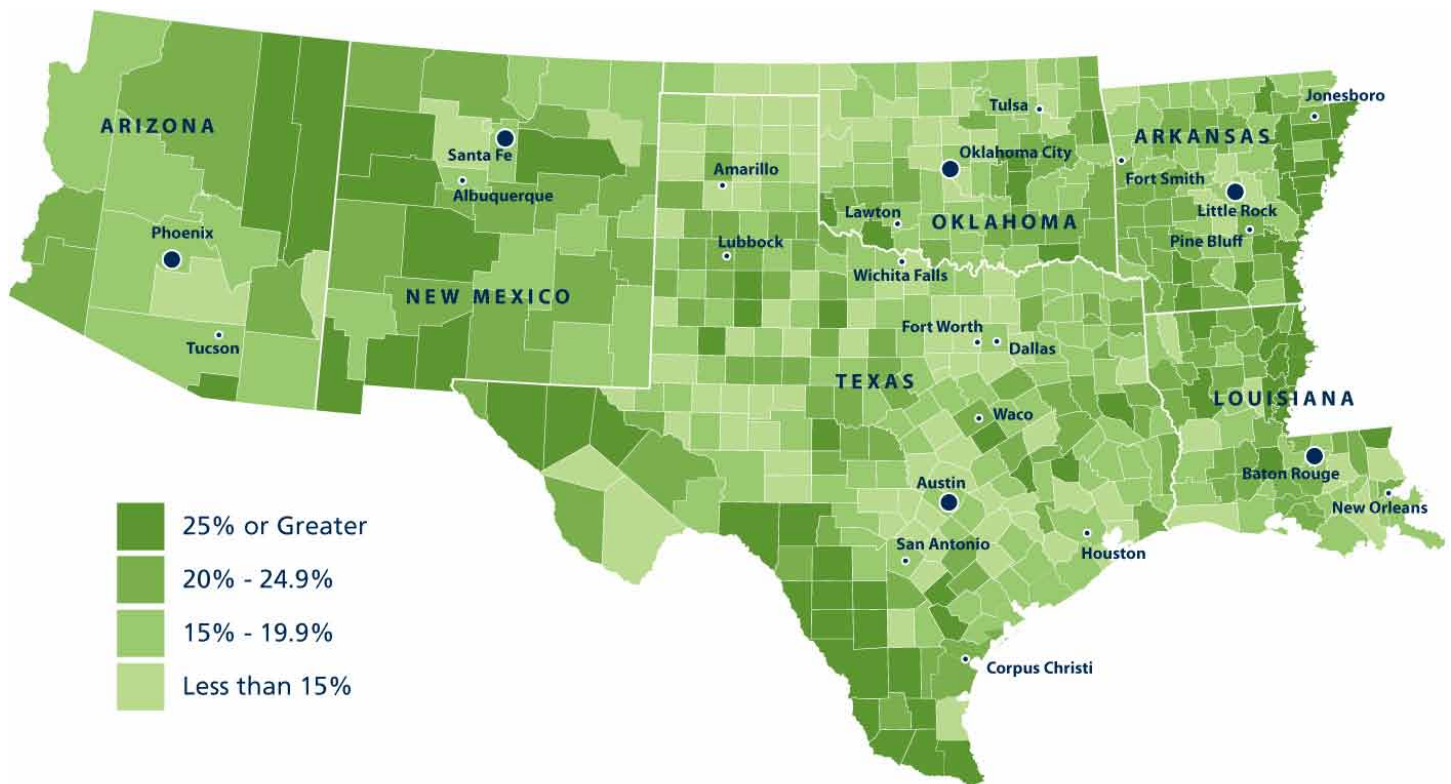
Our review provided a socio-demographic and health/health care portrait of the region and states within it, revealing both the nature and extent of vulnerable populations and their vulnerability to environmental challenges. The data-based findings revealed multiple commonalities across states. Poor air quality, drought and water shortages affect residents across the region. Other threats such as sea level rise, extreme heat and wildfires present major multi-state, cross-border consequences. We further identified emerging challenges around infectious diseases, which are increasingly manifest due to a warmer and wetter climate. As one-fourth of the region is considered rural, these events and threats have potentially significant consequences for urban areas, but also for the agricultural industry and those whose livelihood depends on it.

At risk populations in each state, by poverty or other socio-demographic vulnerabilities, face climate change vulnerabilities as well. For example, there are high levels of poverty virtually across all six states with pockets of poverty concentrated around urban cores and other non-urban areas such as the Texas-Mexico border

and Eastern Arkansas (Map 13). Hispanic/Latino and other diverse populations—many of whom are also low income and reside in areas with significant climate change concerns—are significant and growing in all states across the region. Over one in 10 residents in these states is limited in English proficiency.

Compounding the effects of socio-demographic vulnerability are challenges to health and access to health care that can influence an individual's ability to cope, plan for and mitigate the adverse effects of climate change. Almost one in five adults across the region (18.2%) self-reports their health status as fair or poor. Poor health status, obesity, uninsurance, and a low rate of primary care providers may further disadvantage populations during or after extreme weather events or in the face of environmental challenges. Additionally, effects related to climate, such as extreme heat, may exacerbate pre-existing conditions already prevalent in a community. In this region, health and health care concerns intersect with the previously cited climate change concerns: rates of obesity and uninsurance are widespread and are higher than the national average across states in this region (Maps 20 and 22). With higher rates, these conditions and circumstances are significant barriers especially for low income and racially diverse communities.

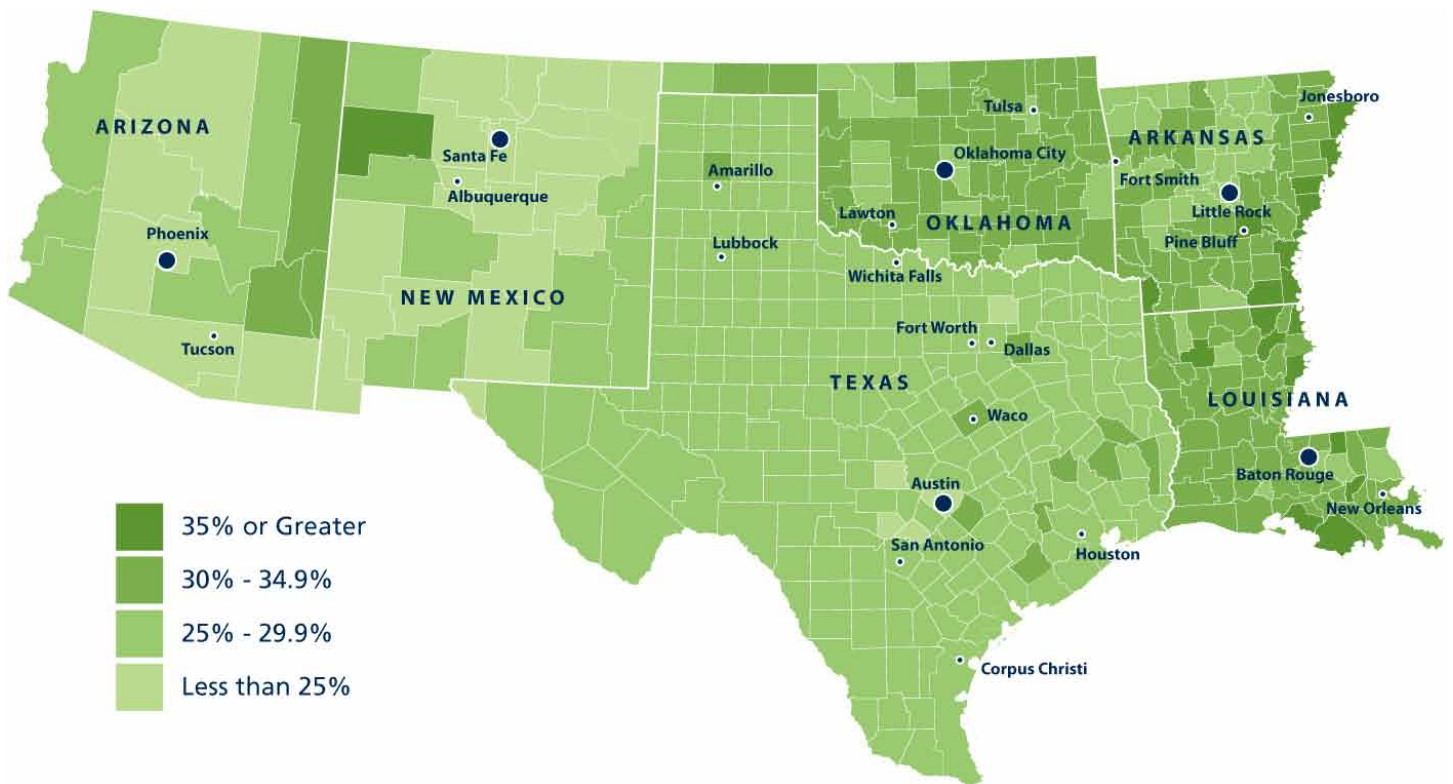
MAP 13. PERCENT POPULATION (ALL AGES) IN POVERTY BY COUNTY, 2010



Source: U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) with estimates derived from the 2010 Decennial Census



MAP 20. PERCENT OBESE BY COUNTY, 2007



Source: National Center for Chronic Disease Prevention and Health Promotion, 2008

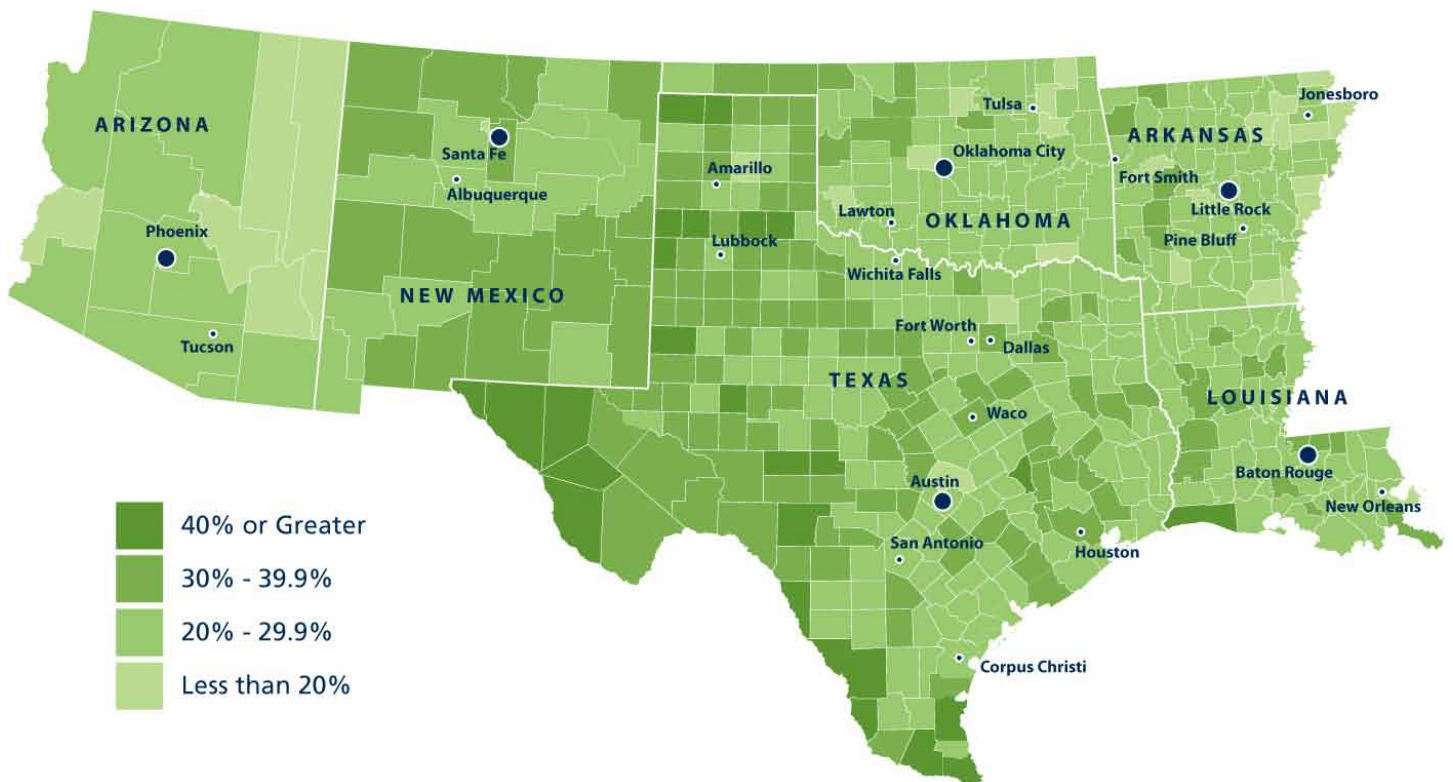
The climate change threat for most vulnerable communities.

Our analysis generally revealed that populations in some areas within all states are especially susceptible to climate change threats. For example, as illustrated in Map 25, without exception, elevated unhealthy air quality days due to ozone overlap with many diverse areas in these states. And virtually all states in the region have among the greatest racial and ethnic disparities in health risks from industrial air toxins (Map 31).

However, for certain communities and states the convergence of these challenges further elevates their risk to create the potential for a climate change-related “perfect storm.” For example, Louisiana’s strikingly high rate of obesity and poverty as well as challenges in access to health care, coupled with several climate-related events such as sea level rise, an increased frequency and intensity of storms and poor air quality could lead to possibly devastating effects for these vulnerable communities. But other areas are also alarmingly susceptible: extreme water shortages along the Texas-New Mexico border and eastern Arkansas could have profound effects on these communities who are both among the poorest, the most diverse and report the poorest health status.

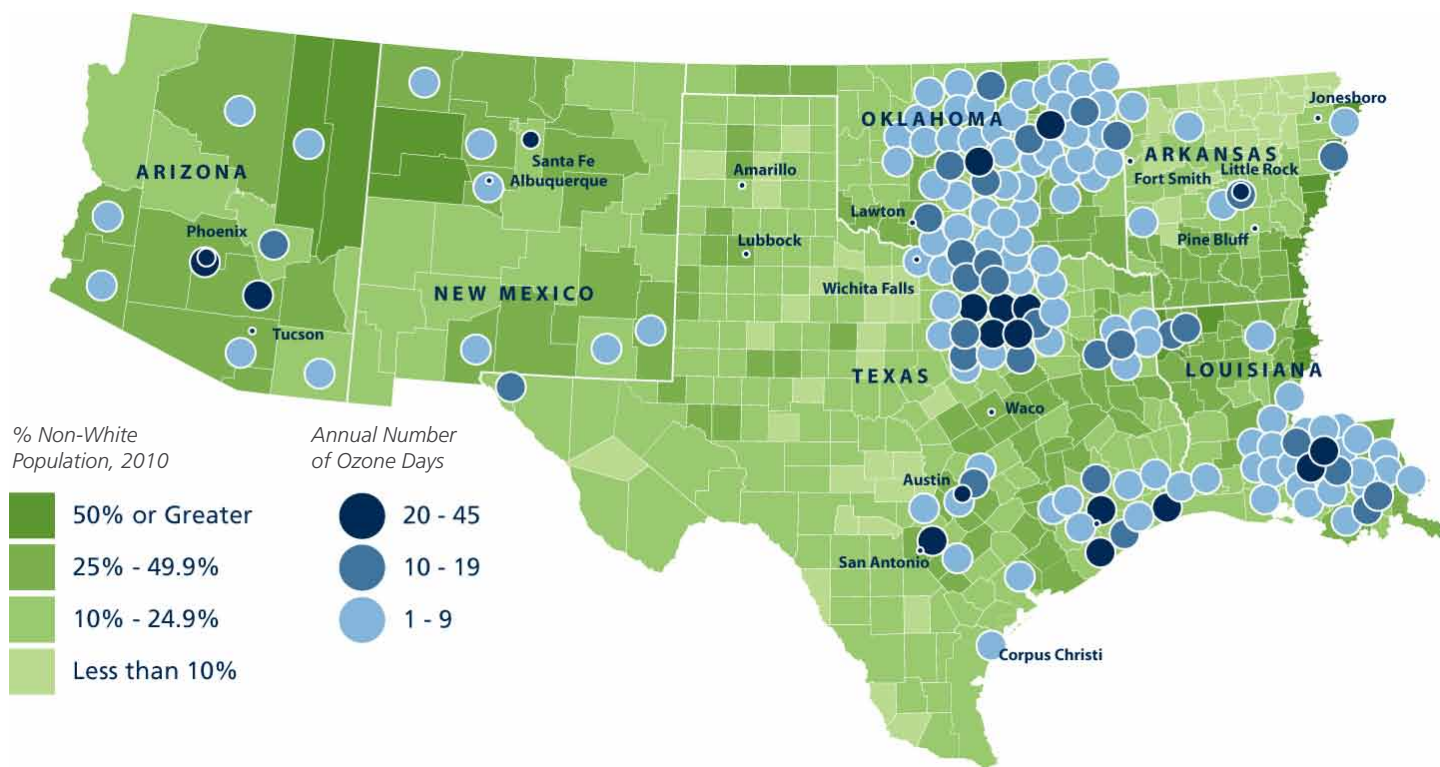


MAP 22. PERCENT UNINSURED BY COUNTY, 2007



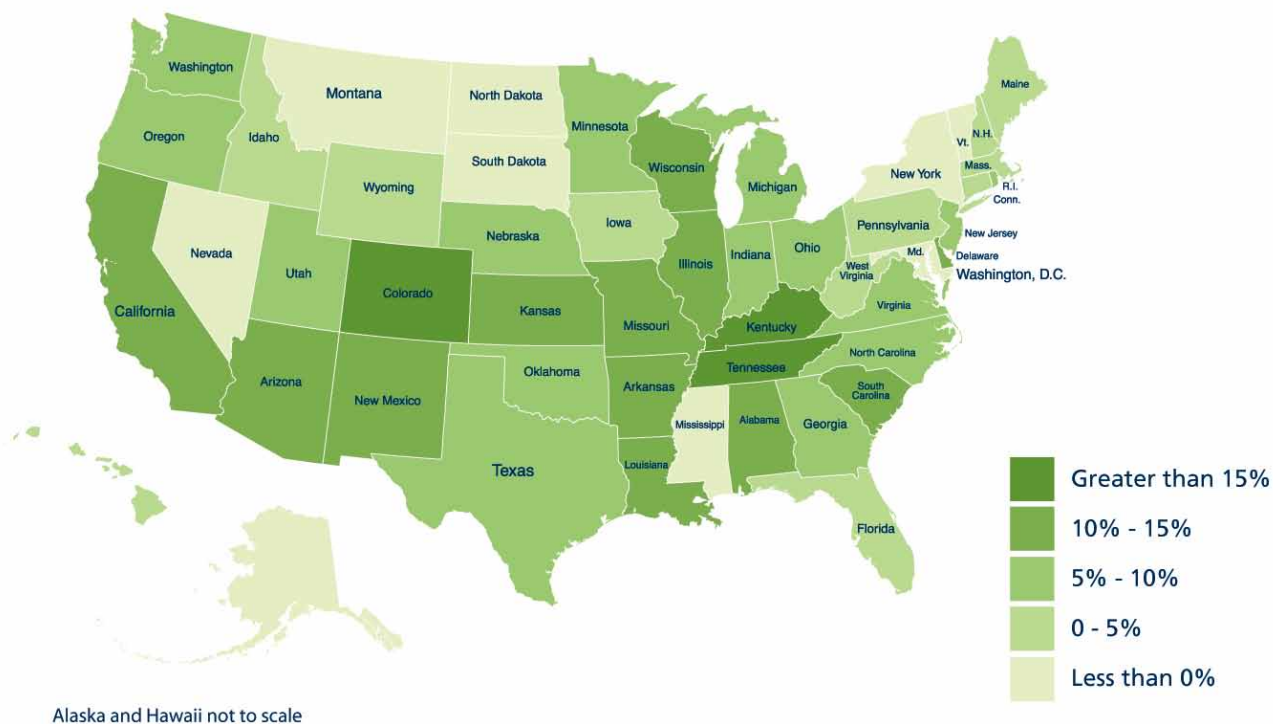
Source: U.S. Census Bureau, Small Area Health Insurance Estimates, 2007

MAP 25. ANNUAL NUMBER OF UNHEALTHY AIR QUALITY DAYS DUE TO OZONE, 2006 AND PERCENT NON-WHITE POPULATION, 2010, BY COUNTY



Source: Data on air quality were obtained from the 2011 County Health Rankings. Demographic data were obtained from the U.S. Census Bureau's 2010 Decennial Census.

MAP 31. DIFFERENCE BETWEEN MINORITY SHARE OF HEALTH RISK FROM INDUSTRIAL AIR TOXICS AND MINORITY SHARE OF POPULATION BY STATE



Source: Ash M, Boyce JK, Chang G, Pastor M, Scoggins J and Tran J. Justice in the Air: Tracking Toxic Pollution from America's Industries and Companies to our States, Cities and Neighborhoods. April 2009.

Questionable and varied progress in state and local mitigation adaptation. This six state region faces significant challenges related to planning and mitigating the effects of climate change (Table 18). As a whole, the region is lacking in statewide policies. Only 3 states had written, established climate change action plans; and implementation of recommended actions from those plans in many cases has progressed slowly or not at all. Our review found that none of the states in the region have formal and comprehensive adaptation plans in place, nor do they include communities of color or economically disadvantaged populations.

There is some variation in state legislative progress to mitigate the effects of climate change in the region, however. For example, New Mexico and Arkansas have taken some actions to implement emission targets. But Texas, Louisiana and Oklahoma have not passed significant legislation to promote a statewide goal or plan to reduce greenhouse gas emissions. According to our review, virtually none of the state laws include vulnerable populations in climate change mitigation strategies.



TABLE 18. SUMMARY OF CLIMATE CHANGE MITIGATION AND ADAPTATION STRATEGIES

	Active Climate Legislative Commissions And Executive Advisory Groups	Climate Change Action Plan	States with Greenhouse Gas Emissions Targets	Range of Greenhouse Gas Emissions Targets	Regional Greenhouse Gas Initiatives	State Greenhouse Gas Reporting and Registries	Renewable Portfolio Standard	State Adaptation Plan
Arizona	Yes	Yes	Yes	2000 levels by 2020, 50% below 2000 by 2040	No	Climate Registry	Yes	Recommended in climate action plan but not adopted
Arkansas	Yes	Yes	No	Recommended in climate change action plan but not adopted	No	No	No	No
Louisiana	No	No	No	—	No	No	No	No
Oklahoma	No	No	No	—	No	Climate Registry	No	No
New Mexico	No	Yes	Yes	2000 levels by 2012, 10% below 2000 by 2020, 75% below 2000 by 2050	No	Climate Registry and Mandatory Reporting	Yes	No
Texas	No	No	No	—	No	Independent Voluntary Registry	Yes	No

Source: Center for Climate and Energy Solutions' U.S. Climate Policy Maps

This lack of attention to vulnerable communities among state legislative actions is also reflected in local and community level initiatives. A number of cities in all states have undertaken initiatives to address issues specific to climate change after recognizing the need to address local priorities and/or acknowledging the lack of state leadership; however, there is little focus on the circumstances and threat-related needs of vulnerable populations in these city or area plans, initiatives or task forces. There is also little attention devoted at the state or local level to profiling the challenges or issues specific to vulnerable populations in reports and other publications such as those involving limited English proficiency or immigrant workers. Key informants confirmed these findings as they had difficulty citing current efforts or progress. Finally, there is a general lack of awareness of information and resources to document degree and extent of vulnerability in the context of climate change. Informants also acknowledged that little documentation is available that links poverty and diversity in the context of climate change vulnerability.

Other potential barriers to progress. Our review and interviews revealed other barriers contributing to and compounding progress toward incorporating vulnerable populations into climate change initiatives, including political opposition, skepticism of climate change effects and influence from industry. Political realities have restricted both development and expansion of these programs and policies in virtually all states in the region. Key informants also cited skepticism about climate change and its causes as a major barrier. This perpetuation of the concept of global warming as a myth has created widespread doubt on the topic that reaches deeply into many communities, including low income and racially diverse populations. Across states, there is a strong opposition to climate change policies by industry (including fossil fuel and electricity companies) and its lobbying efforts. This opposition extends to communities who may be concerned around threat of job losses and economic impact.

RECOMMENDATIONS

State level initiatives. Our review has documented and affirmed many of the significant challenges that lie ahead in mitigating the effects of climate change for vulnerable communities in this region. Nonetheless, efforts to date, data, and research offer guidance for integrating diverse, low income and other vulnerable population priorities into state climate change policies, programs and strategies. As such, recommendations build on existing state efforts and suggest new initiatives to document populations and their needs; and to take action to redress longstanding absence in state climate change goals.

- **Review and renew existing current state climate change efforts and work to include vulnerable populations within them.** Our review found that all states have passed climate change legislation but with little attention to vulnerable populations each state should identify and consider revising current laws and regulations to include these communities, Examples of information for potential inclusion into existing climate change policies and actions are degree of vulnerability to climate change threat, plans for event response, and community engagement in the context of programs and policies. Such a review may serve an important secondary purpose. Reinvigorating previously fallow efforts through reassessing original intent in the context of vulnerable populations and seeking support may offer renewed opportunity within existing policy.
- **Coordinate and communicate promising climate change related priorities and actions across states and regionally, and integrate vulnerable priorities into these cross state initiatives.** When addressing cross-border priorities, states in the region can benefit from sharing data, coordinating monitoring efforts, and developing mutually beneficial policies. Multistate partnerships could also be developed in planning for drought, preparing for wildfires and sea level rise, and creating sustainable strategies in agricultural farming.
- **Integrate vulnerable population concerns and representation into task forces and advisory groups.** Many states have created and convened commissions, expert panels and other advisory bodies. Current and future groups should include vulnerable population representation. They should also assure that addressing related circumstances and concerns such as assessing vulnerable populations' needs and priorities and developing recommendations to promote equity in action are among their core objectives.
- **Develop data that targets climate change priorities to inform programs and state actions.** States should consider developing data sets and measures not only addressing climate change concerns such as degree of temperature rise and number of poor air quality days but also extend and link such data to demographic and health care dimensions that may influence resiliency and vulnerability.

Community level initiatives. As communities have taken on responsibility for mitigating and adapting to climate change, they offer important opportunities to promote actions that can engage and positively affect their most vulnerable. Such efforts include sharing local resources across states, building messages that are acceptable and understandable to vulnerable populations, engaging communities in a meaningful way, and tapping into the strengths of both academic institutions and foundations.

- **Make available local climate change actions occurring across the region.** Counties and cities have undertaken local efforts to target climate change priorities. Their programs, reports and lessons learned could serve as a resource, providing opportunities to transfer knowledge and tap into expertise for other areas seeking to mitigate climate change effects. At the same time such resource development and discussion will need to assure representation of vulnerable populations.
- **Work to assure that vulnerable populations can accept and understand messages about climate change.** Effective outreach, education as well as information development and dissemination to racially, ethnically and linguistically diverse residents around climate change require tailoring health messages to build trust, facilitate understanding, participation and adherence to recommended actions. Involving known cultural “references”, including knowledgeable representatives from these communities, is key to developing culturally competent health communication.
- **Community engagement is essential to advancing climate change strategies for vulnerable populations.** Communities bring assets, knowledge and experience that can be invaluable in providing important input to program planning and policy, by assuring that results will be of value to residents and building trust. Strategies to engage communities will need to recognize the circumstances and challenges that they face in their lives in the context of climate change actions.

- **Leverage academic institutions, to include Minority-Serving Institutions for advancing vulnerable population climate change research, outreach and education.** These entities can offer attention through academic grantmaking capacity, ability to offer expertise and, for faculty with community-based experience, through Community Based Participatory Research initiatives, for example. Their research can foster action, while for those who focus on the needs of vulnerable communities, faculty participation in climate change task forces and advisory groups can add substance to related deliberations. University expertise and experience may also serve as a resource for states in assessing threats and developing and evaluating policies to address them.
- **Elevate the presence of foundations and the private sector in developing and advancing vulnerable population climate change programs and policies.** Foundation leadership, their ability to adapt their objectives to meet area priorities, and capacity for grantmaking that can yield results in the short term and can offer valuable resources in raising the importance of climate change as a state and/or local priority; supporting research that targets critical issues of concern; and advancing legislative agendas. Corporate commitments to related local priorities can provide additional resources for populations most likely to be adversely affected.

While environmental challenges such as wildfires, coastal change and floods may demonstrate the **consequences** of inattention to climate change, one of the major challenges is to expand awareness, engagement and action to address the underlying **causes**. Policymakers, agencies, researchers, advocates and community based organizations can take advantage of “windows of opportunity” emerging from tragic events to bring attention to both targeted need and broader climate change priorities—and to take actions before events occur. The energy behind these tragedies should not dissipate as they recede from today’s headlines. Communities and their governments in this region, as well as the nation have a responsibility to foster broader awareness, understanding and involvement of how vulnerability and climate change are integrally linked. In so doing those committed to redressing legacies of the past can work to promote a healthier environment for the future.

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The members of the Texas Health Institute Project Team are Dennis Andrulis, Ph.D., MPH, Nadia Siddiqui, MPH and Maria Rascati Cooper, M.A. The Project Team acknowledges and thanks the U.S. Forest Service and the Joint Center for Political and Economic Studies in supporting this project. We also are grateful to Gina Wood, Kellee James and Clori Jones of the Joint Center for their guidance and support in preparation of this report.

Finally we want to offer our appreciation to members of the *Commission to Engage African Americans on Climate Change* who, with Joint Center staff through their invaluable contributions, have provided content recommendations, direction and support throughout all phases of this project.

ABOUT THE TEXAS HEALTH INSTITUTE

Texas Health Institute is a 501c3, which provides leadership in development of health care solutions to shape the health care landscape. As an independent, nonpartisan, nonprofit organization, THI takes a broad view of health care issues and their impact on people and their communities. From acting as a neutral convener and facilitating balanced health care dialogue, to creating a vision of improved health care, THI provides innovative, “outside the box” collaboratively developed options to improve the health of people and their communities.

ABOUT THE COMMISSION TO ENGAGE AFRICAN AMERICANS ON CLIMATE CHANGE

The Joint Center’s Commission to Engage African Americans on Climate Change is comprised of leading experts representing scientists, scholars, policymakers, entrepreneurs, leaders in public health, industry, business, and the media, educators, civil rights activists, and environmentalists to provide input and advice to the Joint Center regarding research priorities, equitable energy and climate policy, and ongoing outreach efforts. Key areas of focus include providing pivotal research and support

ABOUT THE JOINT CENTER

The Joint Center for Political and Economic Studies conducts research and policy analysis on topics of concern to African Americans and other people of color. Initially founded in 1970 to encourage African American political participation and to support newly-elected black public officials in the wake of the passage of the Voting Rights Act, the Joint Center continues to promote civic and political engagement-and support black leadership-as the primary route to greater equality and opportunity.

Today the Joint Center’s approach includes identifying and examining critical emerging issues, as well as collaborating with highly-regarded scholars and experts in designing and conducting rigorous investigations and studies. We publicize our research findings in relevant policy circles and among targeted audiences through publications such as research reports and policy briefs and forums and seminars that often are crafted collaboratively with our strategic partners. We reach the public through both traditional and social media channels.

In recent years, the Joint Center has established several institutes to spotlight key issues. Our Health Policy Institute has played an important role in the debate over health care reform and health disparities. Our Media and Technology Institute has been in the forefront of the debate over broadband access and other issues related to emerging communications technologies. We recently launched a Civic Engagement and Governance Institute that includes other vital issues such as economic and retirement security, and voting patterns. And we have devoted significant resources to supporting our energy and environment program with a distinguished national Commission to Engage African Americans on Climate Change.

The Joint Center facilitates analysis of issues through the lens of the African American community, with the goal of ensuring that its views are heard and its findings are considered in the public policy development process. We do this by engaging elected and appointed officials with regard to our body of work on the racial and socioeconomic aspects of public policy. We do not take positions on public policy proposals or advocate official positions. Recognizing that complex issues require the engagement, understanding and commitment of society at large, the Joint Center aims to provide a forum where disparate interests can seek common ground and move forward toward policy solutions.

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