

# CCHViz: An Interactive Data Visualization Platform for California's Climate Change and Health Vulnerability Indicators



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## Vulnerability

Visualize California Counties based on levels of both an exposure variable and a population sensitivity variable.

The plot illustrates the intersection of hazard (from an aspect of climate change) and sensitivity (from circumstances of the population or place that tend to increase susceptibility to the hazards of climate change). Counties are assigned to the bottom (least), middle, or top (most) third for both exposure and sensitivity. The most vulnerable counties appear in top and right-most portions of the figure. Points are sized according to the population living in that county. Hover over points for the county name, population, and indicator values.

Some examples of important combinations to consider are

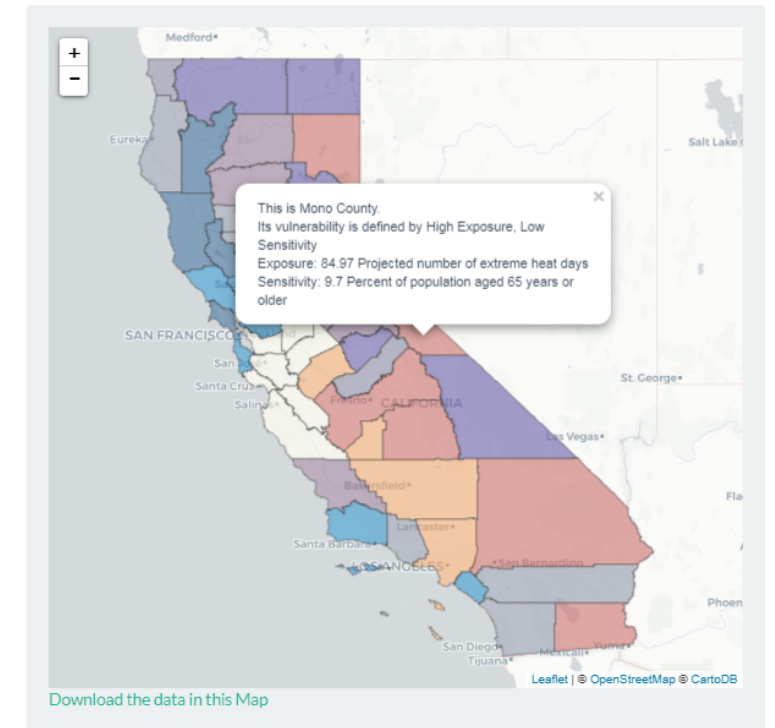
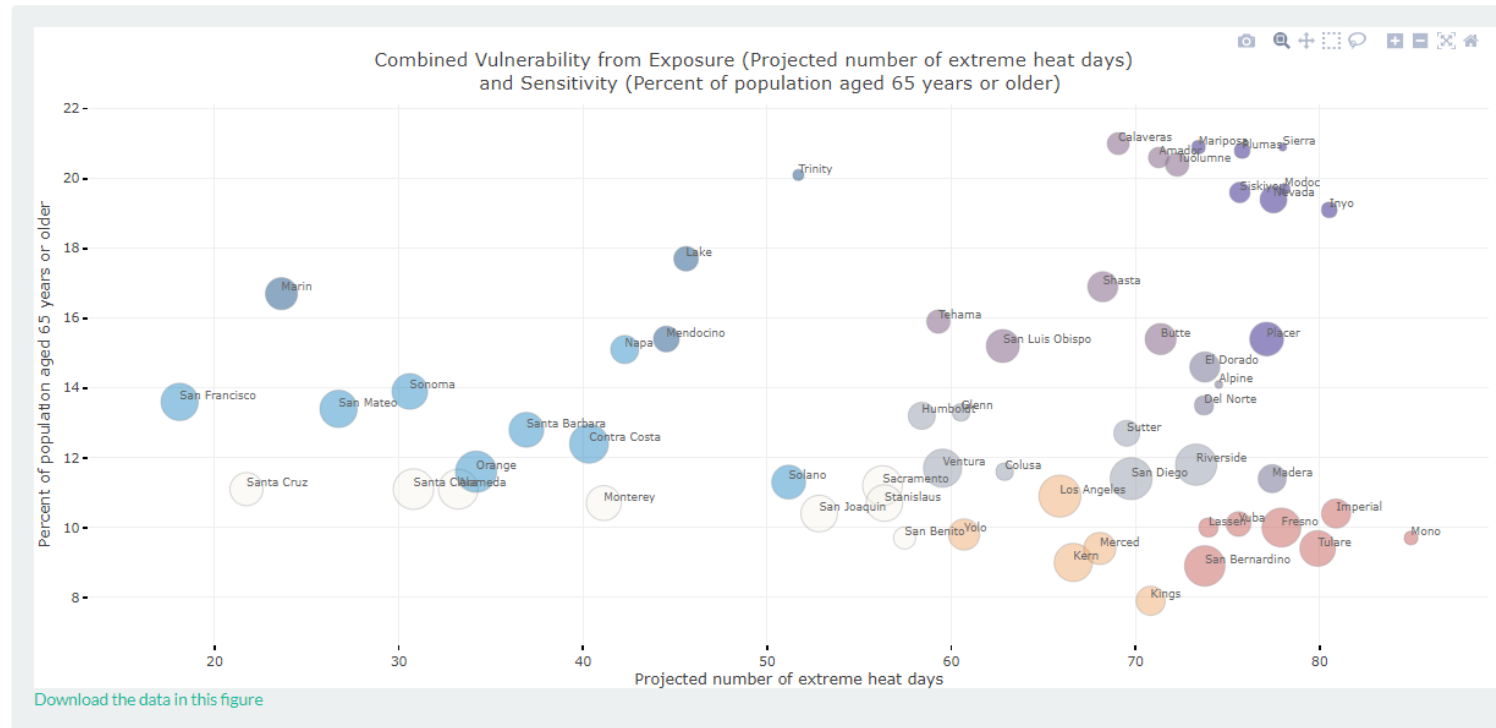
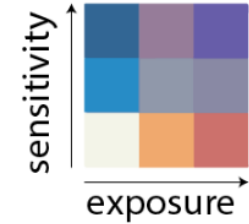
- Heat + elderly / outdoor workers / health insurance / air conditioning / tree canopy / impervious surfaces
- Ozone + children
- PM2.5 + children
- Wildfire + elderly / disability

Exposure Indicator

Projected number of extreme heat days

Sensitivity Indicator

Percent of population aged 65 years or older



# Climate Change & Health Equity Section:

## Embedding health and equity in California climate action

***Mission:*** Assure that **California's actions to prevent and prepare for climate change improve health equity.**

CCHES helps to implement California's climate change policies, contributing health equity guidance, research approaches, and tools, to **improve living conditions and health outcomes with and for people facing inequities.**

### ***Strategies:***

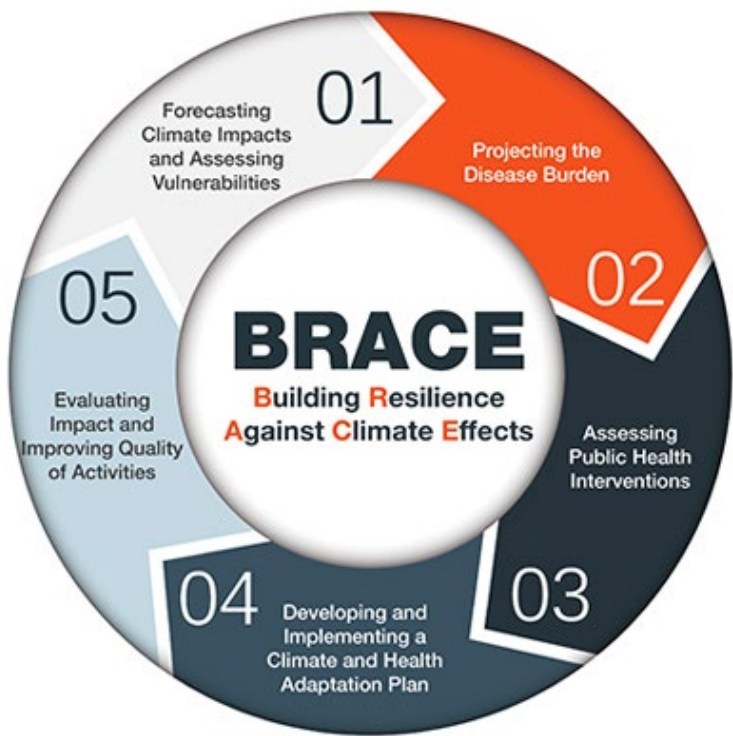
- **Embed health and equity into climate change programs and policies** so that implementation improves living conditions for communities facing inequities.
- **Guide State investment and resource distribution** to prioritize health equity.
- **Provide data, research, and tools** to reduce and prepare for the health effects of climate change and maximize the health equity benefits of climate action.
- **Increase the capacity of local and state health departments** to work on climate change and health equity through consultation and technical assistance.
- **Engage with climate justice and health equity stakeholders** to increase their decision-making power.





# History of the CCHVI Indicators

## CalBRACE Program



## CalBRACE - 2017 Climate Change and Health Profile Reports

The Climate Change and Health Profile Reports are designed to help counties in California prepare for the health impacts related to climate change through adaptation planning. The reports present projections for county and regional climate impacts, the climate-related health risks, and local populations that could be vulnerable to climate effects. The information is based on available science compiled from previously published, state-sponsored research and plans. We invite local public health agencies in California and their partners to use these reports to inform their efforts to address climate change and public health in their unique counties and regions.



These reports were developed by the California Department of Public Health – Office of Health Equity's CalBRACE Project with funding from Cooperative Agreement 5UE1EH001052 with the Federal Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC or the US Department of Health and Human Services.

CDPH CalBRACE Adaptation Toolkit

CDPH - Climate Change and Health Equity Section

Toolkit Overview Before You Start Impacts and Vulnerabilities Project Disease Burden Assess Interventions Adaptation Plan and Action Evaluate and Monitor Resources

Welcome to the CDPH CalBRACE Adaptation Toolkit

Public Health Adaptation Planning—A process to identify and assess the health risks from likely climate changes, and the vulnerability of people and places that are likely to be affected; to develop adaptation goals and actions to reduce vulnerability and increase resilience; and to establish a plan to implement and monitor success of adaptation actions.

This collection of tools, reports, and guides helps local health departments and communities understand, and plan to address the health risks of climate change.

The California Building Resilience for Climate Effects (CalBRACE) project, within the California Department of Public Health (CDPH) Climate Change and Health Equity Section developed this toolkit with assistance from the CivicSpark Program.

This toolkit aligns with the Building Resilience Against Climate Effects (BRACE) Framework created by the Centers for Disease Control and Prevention (CDC). BRACE allows health officials to anticipate, prepare for, and respond to a range of climate sensitive health impacts with a unified climate and health adaptation strategy. Key principles for the framework include adaptive management, evidence-based public health practice, and engaging stakeholders.

How to Use This Toolkit

Navigate through the tabs in sequence or choose to focus on the most relevant BRACE steps and tools with flexibility based on local and regional conditions, resources and priorities. Please share comments

# Climate Change & Health Vulnerability Indicators for California

## Environmental Exposures:

Heat

Air Quality

Drought

Wildfires

Sea Level Rise

## Adaptive Capacity:

Air Conditioning Ownership

Tree Canopy

Impervious Surfaces

Public Transit Access

## Population Sensitivity:

Children and Elderly

Poverty

Education

Race and Ethnicity

Outdoor Workers

Vehicle Ownership

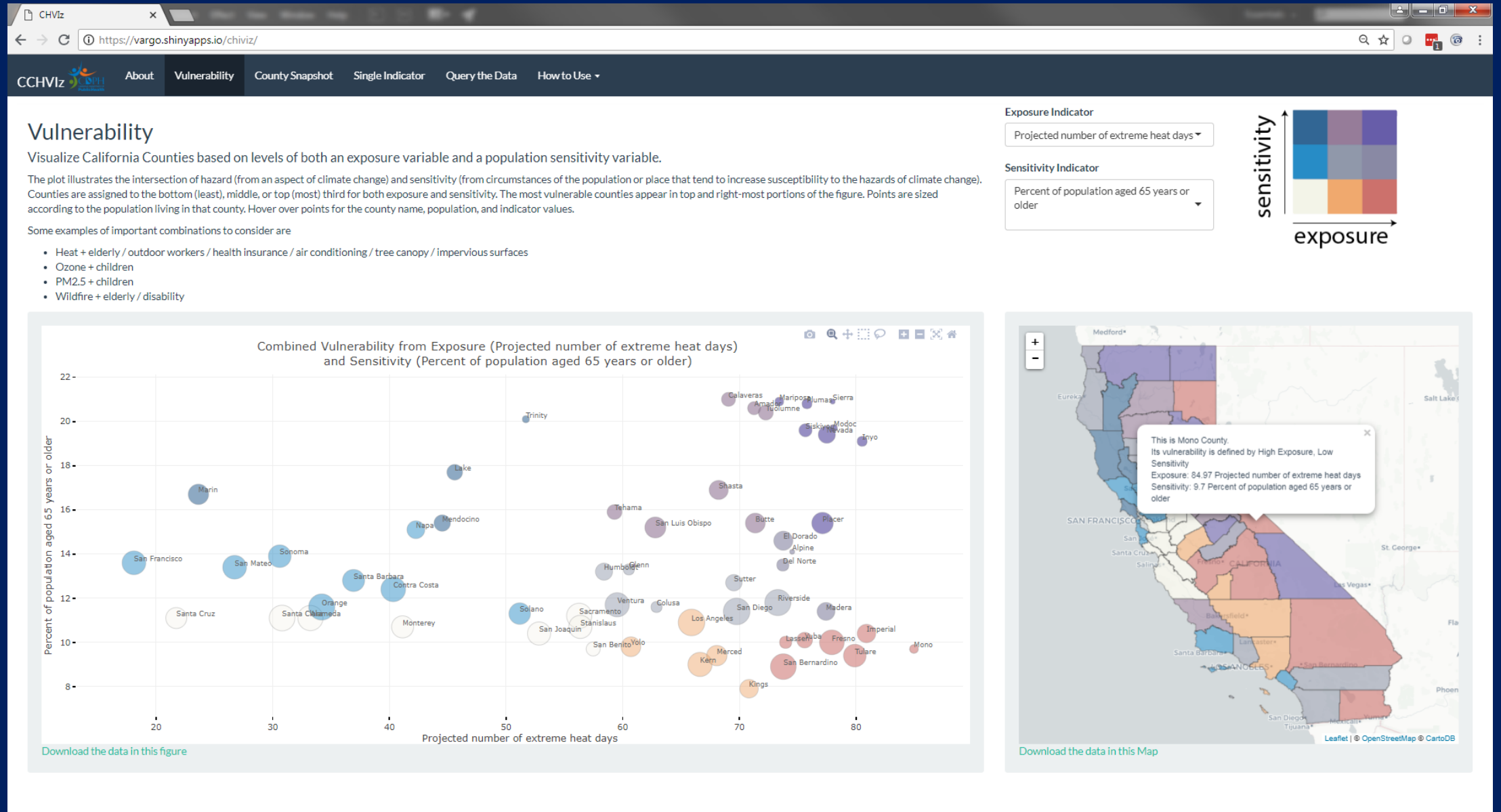
Linguistic Isolation

Disability

Health Insurance

Violent Crime Rate

<https://skylab.cdph.ca.gov/CCHViz/>



# Climate Change and Health Vulnerability Indicators for California (CCHVIs)

## Online Visualization Platform:

- Built using R Shiny
- "Living" resource with plans to improve and expand with health data

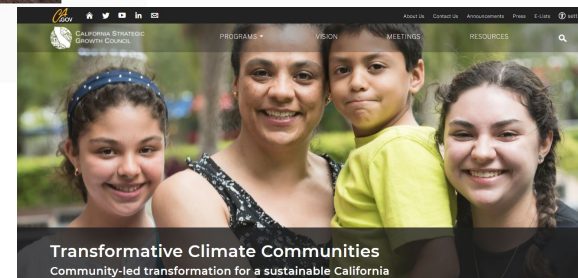


## How Stakeholders are Using the CCHVIs:

- Local vulnerability assessments
- State climate change grants
- Other statewide plans and policies
- Included in other platforms





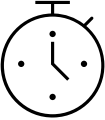



Prepared by:  
California Department of Forestry and Fire Protection



The City of  
**SAN DIEGO**

Climate Change Vulnerability  
Assessment

# Lessons Learned

- **R shiny = flexible** 
- **Never enough staff or time!** 
- **Data get out of date very quickly** 
- **Some populations underrepresented (e.g., Tribes, rural areas)** 
- **There are so many tools out there!** 
- **Overall indicator or index of vulnerability** 





# CDPH Climate Change & Health Equity Section



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**Thank you!**

<http://bit.ly/cchep>



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