

ARCCA Learning Session

Advancing the Climate-Health Connection

September 27th, 2016 | 1:00-2:00 PM PST



Learning Session Agenda

- **Brief overview** of the Alliance of Regional Collaboratives for Climate Adaptation (ARCCA)
- **Feature presentation** on the U.S. Global Change Research Program's scientific assessment on *The Impacts of Climate Change on Human Health in the United States*
- **Q&A** with webinar participants
- **Roundtable discussion** on advancing the climate-health connection in California

Webinar Logistics

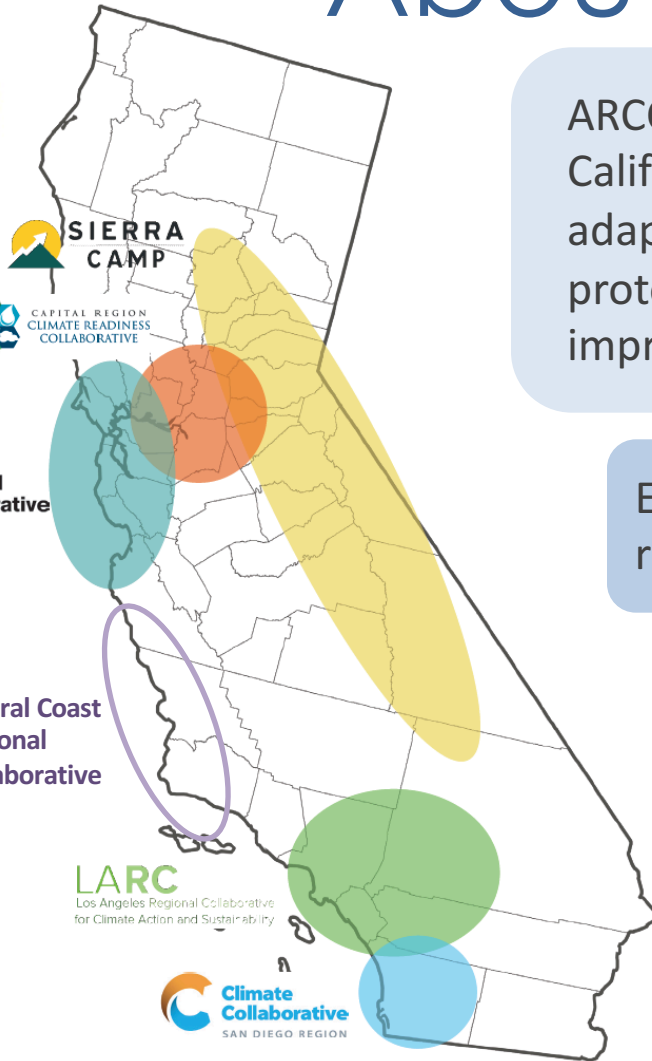
Questions:

At any point during the webinar, you can type your question into the question text box and click send.

All questions directed towards a speaker will be read aloud and answered at the end of the presentations, as long as time permits.

The screenshot shows the GoToWebinar Control Panel interface. At the top, it says "GoToWebinar Control Panel". Below that is the "Audio" section, which includes "Audio Mode" with two options: "Use Telephone" (unselected) and "Use Mic & Speakers" (selected). There is a "MUTED" status indicator with a microphone icon and a volume slider. Below the audio section is the "Questions" section, which features a large text input box and a "Send" button. At the bottom, it displays "Webinar Now" with the "Webinar ID# 349-759-329" and the "GoToWebinar" logo.

About ARCCA



ARCCA is a **network of regional collaboratives** in California coordinating and supporting climate adaptation efforts to enhance public health, protect natural systems, build economies, and improve quality of life.

Engaging in **state policymaking** to advance a regional and holistic approach to adaptation.

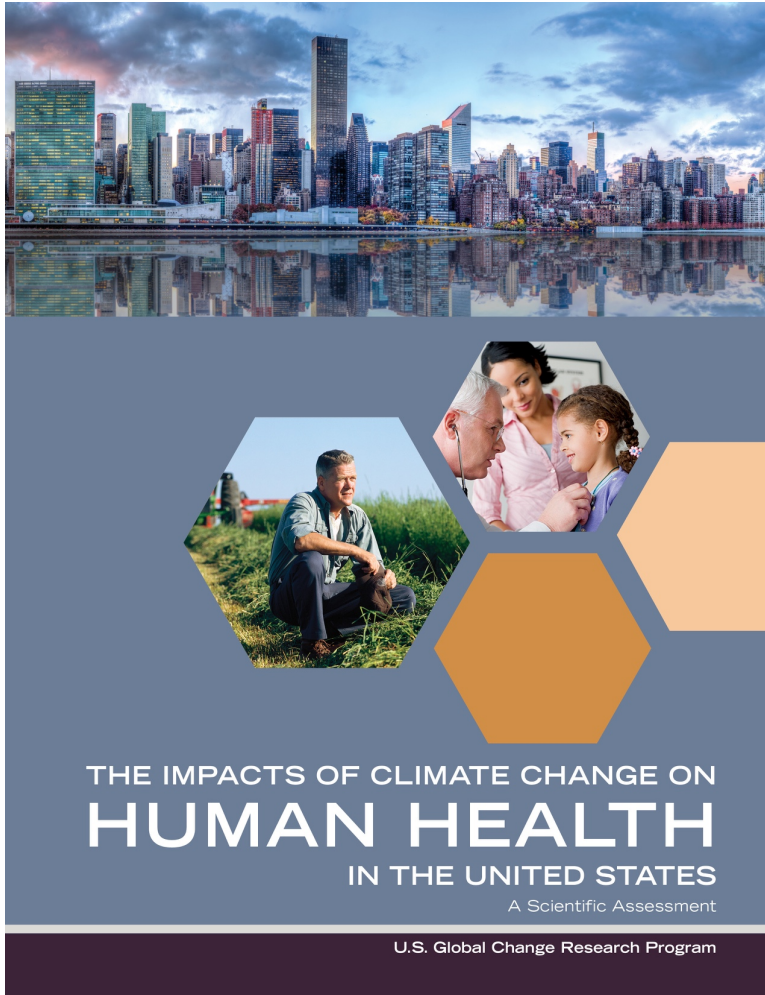
Sharing **best practices and resources** to advance local efforts on the ground.

Encompassing over **80%** of the state's population.

Current Initiatives

- Fourth Assessment research projects: overcoming financial and institutional barriers to implementing local adaptation strategies
 - Regional stakeholder workshops, 10/4-10/26
 - Online survey: www.research.net/r/Y68JMH
- Legislative tracking
 - 2016 Climate Legislative Update
- Whitepaper on *Exploring the Connections Between California's Communities Through Ecosystems-Based Adaptation*
- Adaptation in Action Roadmap and Toolkit
- More information available at www.arccacalifornia.org

Featured Presentation



Allison Crimmins

Environmental Scientist, Climate Change
Division, Office of Atmospheric Programs
U.S. Environmental Protection Agency



THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH

IN THE UNITED STATES: A SCIENTIFIC ASSESSMENT

Allison Crimmins

U.S. Environmental Protection Agency

Alliance of Regional Collaboratives for Climate Adaptation— 09/27/2016



U.S. Global Change
Research Program

Health2016.globalchange.gov

USGCRP Climate and Health Assessment

What is the USGCRP Climate and Health Assessment?

- An Interagency product of the US Global Change Research Program (USGCRP)
- Part of the National Climate Assessment (NCA) sustained assessment process and called for under the President's Climate Action Plan



What is the purpose of the Climate and Health Assessment?

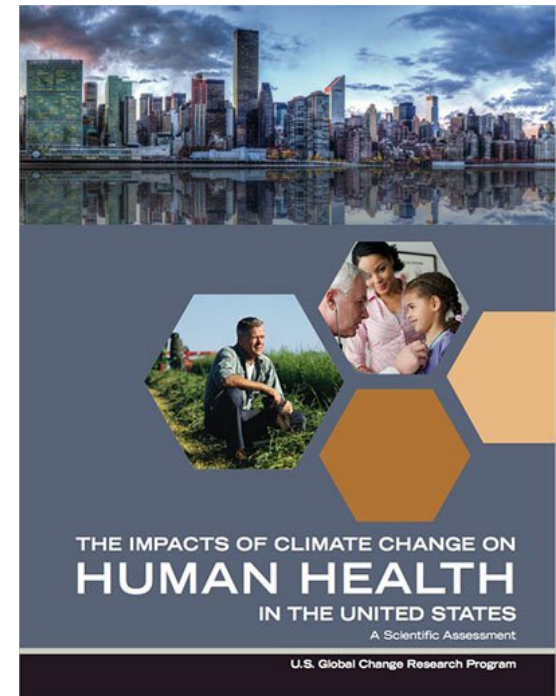
- Enhance understanding about the growing threat climate change poses to the health and well-being of Americans
- Inform decisions made by public health officials, planners, decision makers, and stakeholders



Process and People

What was the process for development?

- Driven by the USGCRP Interagency Crosscutting Group on Climate Change and Human Health (CCHHG)
- Coordinated by the EPA
- Written by a team of ~100 Federal employees, contractors, and grantees from eight U.S. Federal agencies: HHS (NIH, CDC, NIOSH, ASPR, FDA, SAMHSA), NOAA, EPA, USDA, NASA, USGS, DOD (USUHS), VA
- Extensively reviewed by the public and experts, including a committee of the National Academies of Sciences and the 13 Federal agencies of the USGCRP; draws from a large body of scientific peer-reviewed research



Health2016.globalchange.gov



Scope

The Climate and Health Assessment is a Highly Influential Scientific Assessment (HISA):

- Synthesizes literature, assesses peer-reviewed science, weighs evidence, and provides confidence levels for key findings
- Advances the science: four chapters highlight new peer-reviewed quantitative analyses of projected health impacts
- Focuses on quantifying, where possible, observed and projected impacts.

The Climate and Health Assessment does not address:


- Mitigation, adaptation, economic valuation, or any policy recommendations.
- Indirect non-climate factors or other compounding, secondary, or cumulative effects of climate change.
- Research needs: though briefly summarized research needs are not described comprehensively.

Table of Contents

- 1. Climate Change and Human Health (Introduction)**
- 2. Temperature-Related Death and Illness**
- 3. Air Quality Impacts**
- 4. Extreme Events**
- 5. Vectorborne Disease**
- 6. Water-Related Illnesses**
- 7. Food Safety, Nutrition, and Distribution**
- 8. Mental Health and Well-Being**
- 9. Populations of Concern**

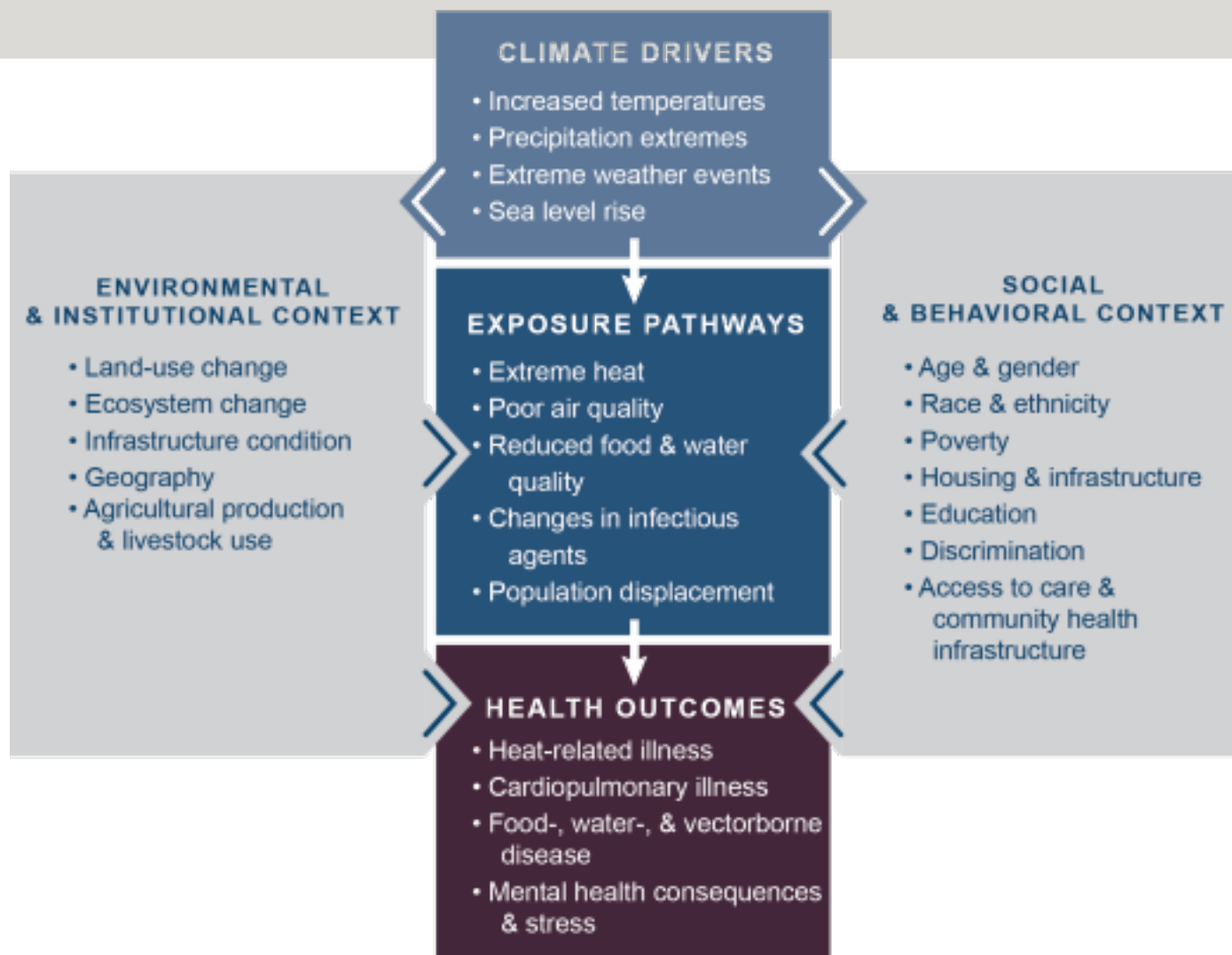


Top Line Messages of the Report

- 
- Climate change is a significant threat to the health of the American people.
 - Climate change exacerbates some existing health threats and creates new public health challenges.
 - This assessment significantly advances what we know about the impacts of climate change on public health, and the confidence with which we know it.
 - Every American is vulnerable to the health impacts associated with climate change.



Chapter 1: Introduction: Climate Change and Health



Chapter 2: Temperature- Related Death and Illness

Key Finding 1: Future Increases in Temperature-Related Deaths

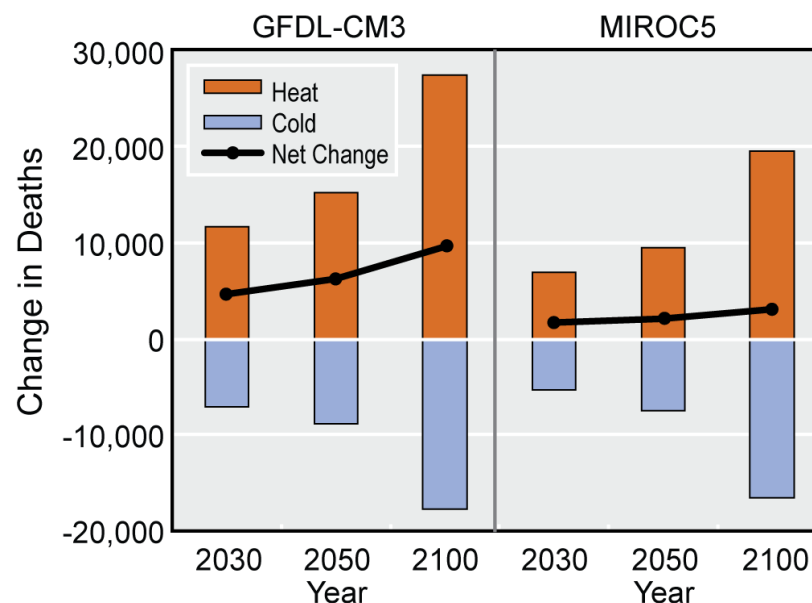
Based on present-day sensitivity to heat, an increase of thousands to tens of thousands of premature heat-related deaths in the summer are projected each year as a result of climate change by the end of the century.

KF2: Even Small Differences from Seasonal Average Temperatures Result in Illness and Death

KF3: Changing Tolerance to Extreme Heat

KF4: Some Populations at Greater Risk

Projected Changes in Deaths in U.S. Cities by Season



Chapter 3: Air Quality Impacts

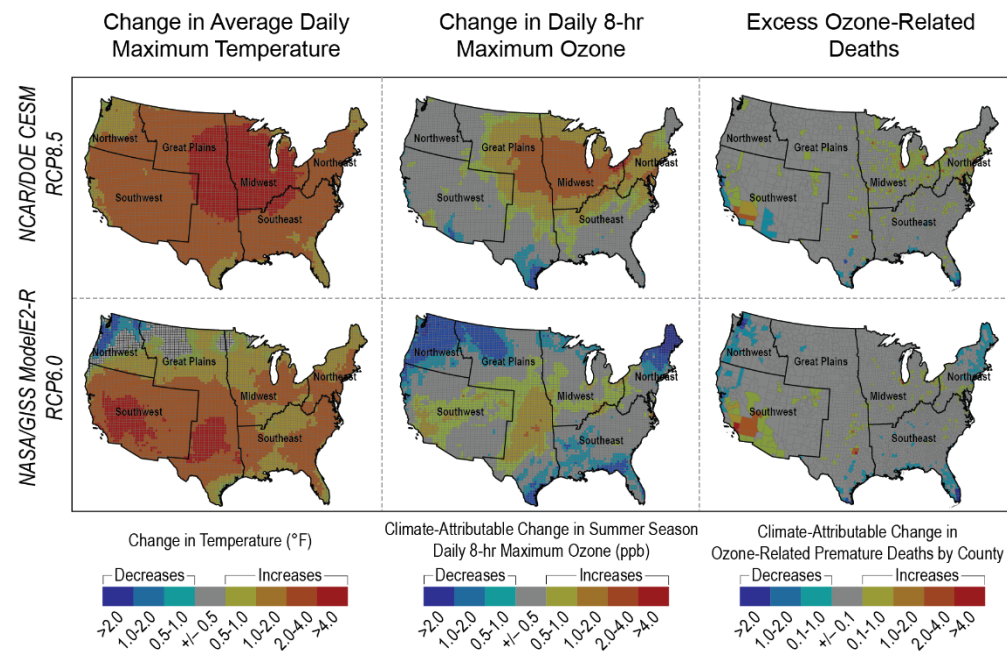
Key Finding 1: Exacerbated Ozone Health Impacts

Climate change will make it harder to reduce ground-level ozone pollution in the future as air and weather conditions support more ozone formation across most of the US. Unless offset by additional emissions reductions of ozone-producing chemicals, these climate-driven increases in ozone will cause premature deaths, hospital visits, lost school days, and acute respiratory symptoms.

KF2: Increased Health Impacts from Wildfires

KF3: Worsened Allergy and Asthma Conditions

Projected Changes in Temperature, Ozone, and Ozone-Related Premature Deaths in 2030



Chapter 4: Extreme Events

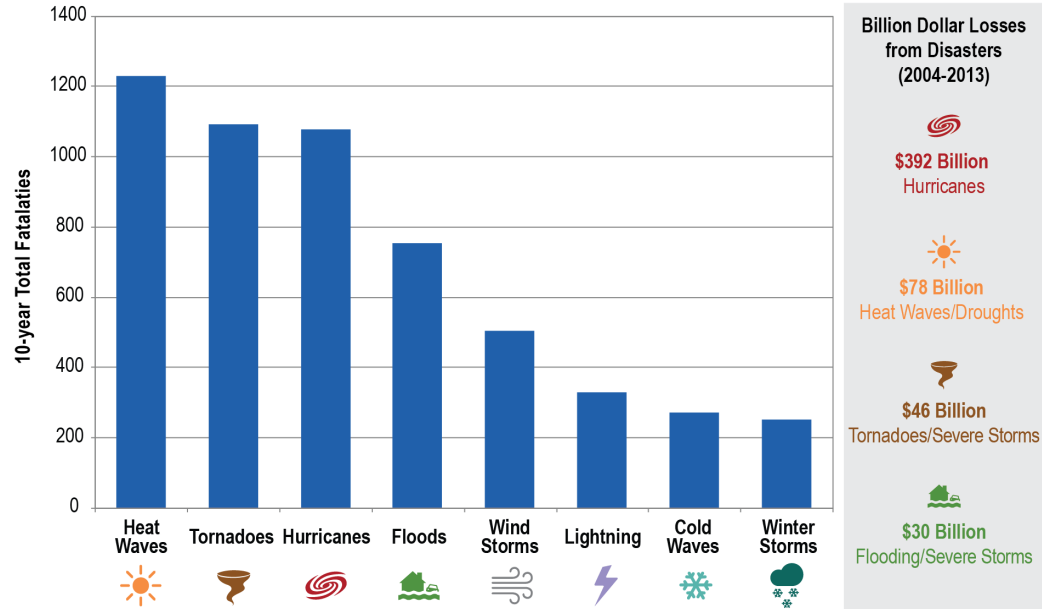
KF1: Increased Exposure to Extreme Events

Key Finding 2: Disruption of Essential Infrastructure

Many types of extreme events related to climate change cause disruption of infrastructure, including power, water, transportation, and communication systems, that are essential to maintaining access to health care and emergency response services and safeguarding human health.

KF3: Vulnerability to Coastal Flooding

Estimated Deaths and Billion Dollar Losses from Extreme Events in the U.S., 2004–2013



Chapter 5: Vector-borne Diseases

KF1: Changing Distributions of Vectors and Vector-borne Diseases

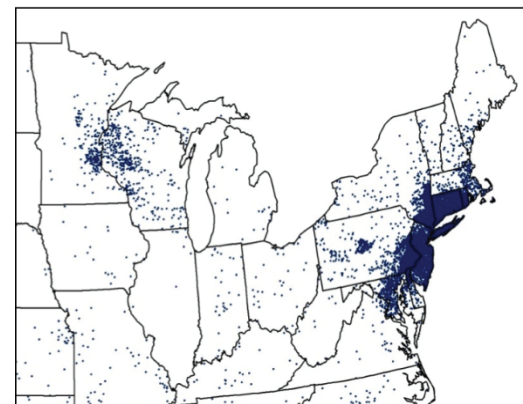
Key Finding 2: Earlier Tick Activity and Northward Range Expansion

Ticks capable of carrying the bacteria that cause Lyme disease and other pathogens will show earlier seasonal activity and a generally northward expansion in response to increasing temperatures associated with climate change. Longer seasonal activity and expanding geographic range of these ticks will increase the risk of human exposure to ticks.

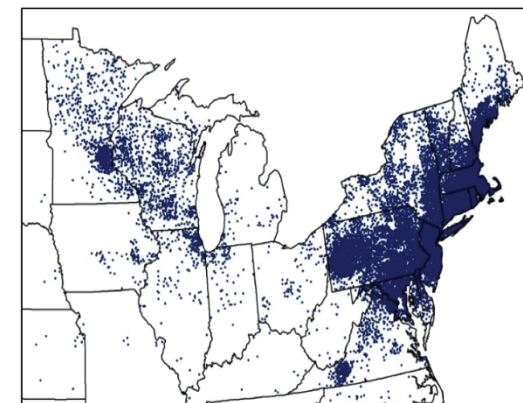
KF3: Changing Mosquito-borne Disease Dynamics

KF4: Emergence of New Vectorborne Pathogens

Changes in Lyme Disease Case Report Distribution



2001



2014



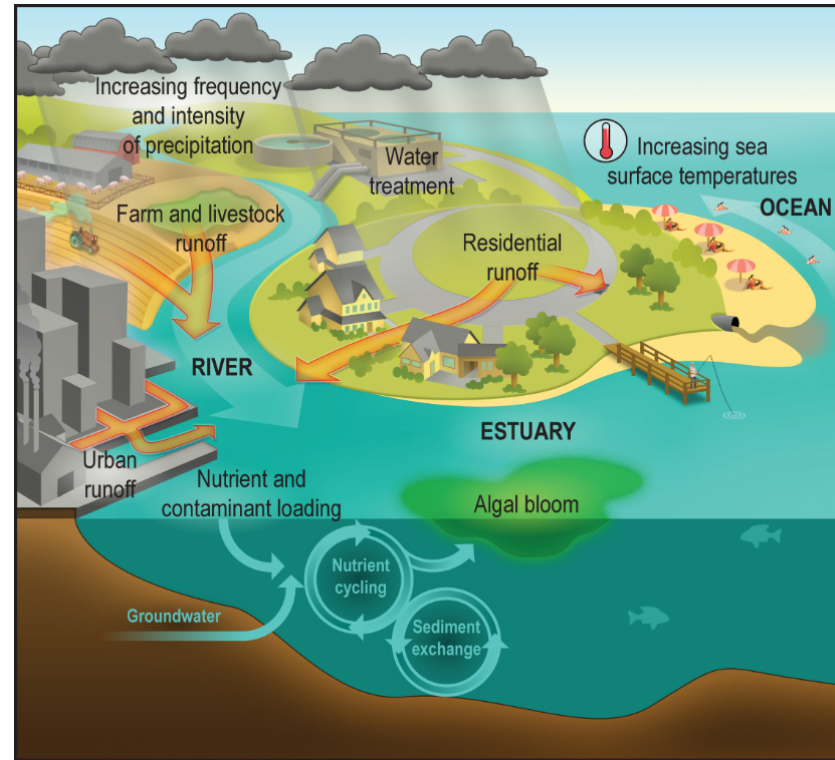
Chapter 6: Water-Related Illnesses

Key Finding 1: Seasonal and Geographic Changes in Waterborne Illness Risk

*Increases in water temperatures associated with climate change will change the seasonal windows of growth and the habitat range for freshwater and marine toxin-producing algae as well as certain naturally occurring *Vibrio* bacteria. These changes will increase the risk of exposure to waterborne pathogens and toxins that can cause a variety of illnesses.*

KF2: Runoff from Extreme Precipitation Increases Exposure Risk

KF3: Water Infrastructure Failure



Chapter 7: Food Safety, Nutrition, and Distribution

KF1: Increased Risk of Foodborne Illness

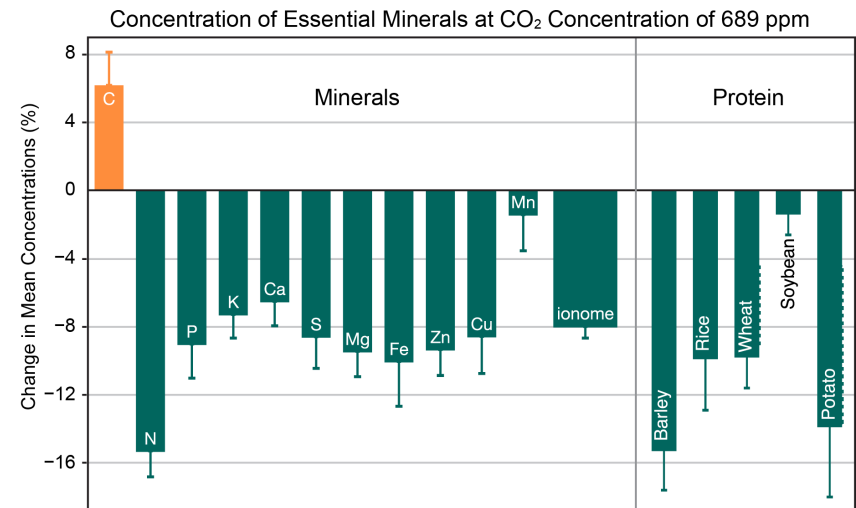
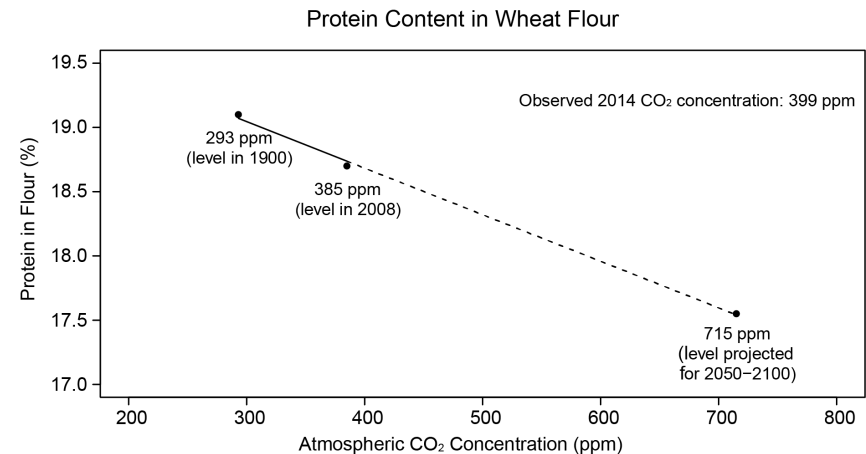
KF2: Chemical Contaminants in the Food Chain

Key Finding 3: Rising Carbon Dioxide Lowers Nutritional Value of Food

The nutritional value of agriculturally important food crops, such as wheat and rice, will decrease as rising levels of atmospheric carbon dioxide continue to reduce the concentrations of protein and essential minerals in most plant species.

KF4: Extreme Weather Limits Access to Safe Foods

Effects of Carbon Dioxide on Protein and Minerals



Chapter 8: Mental Health and Well-Being

KF1: Exposure to Disasters Results in Mental Health Consequences

KF2: Specific Groups of People Are at Higher Risk

KF3: Climate Change Threats Result in Mental Health Consequences and Social Impacts

Key Finding 4: Extreme Heat Increases Risks for People with Mental Illness

People with mental illness are at higher risk for poor physical and mental health due to extreme heat. Increases in extreme heat will increase the risk of disease and death for people with mental illness, including elderly populations and those taking prescription medications that impair the body's ability to regulate temperature.

Impact of Climate Change on Physical, Mental, and Community Health



Chapter 9: Populations of Concern

KF1: Vulnerability Varies Over Time and is Place-Specific

KF2: Health Impacts Vary with Age and Life Stage

Key Finding 3: Social Determinants of Health Interact with Climate Factors to Affect Health Risk

Climate change threatens the health of people and communities by affecting exposure, sensitivity, and adaptive capacity. Social determinants of health, such as those related to socioeconomic factors and health disparities, may amplify, or otherwise influence climate-related health effects, particularly when these factors occur simultaneously or close in time or space.

KF4: Mapping Tools and Vulnerability Indices Identify Climate Health Risks



Resources: health2016.globalchange.gov

Quick links to downloads and chapters



The screenshot shows the top portion of the GlobalChange.gov website. The header includes the GlobalChange.gov logo, the text 'Climate and Health Assessment', a search bar, and navigation links for 'HOME', 'DOWNLOADS', and 'MENU'. The 'DOWNLOADS' and 'MENU' links are circled in red. The main content area features a large orange-tinted image of a city skyline and a waterfront walkway. Overlaid on this image is the title 'The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment' and a brief description. A 'VIEW SUMMARY' button with a downward arrow is visible at the bottom of the main content area. On the right side of the main content area, there are two hexagonal icons (one with a download arrow, one with a share icon) and a vertical list of circular icons.



Resources: health2016.globalchange.gov

Download page has report, chapters, citations, figures, PowerPoint presentations, and 2-pg summaries

Download page has report, chapters, citations, figures, PowerPoint presentations, and 2-pg summaries

10MB25MB

The PDF is the official version of the Climate and Health Assessment.

	Screen	Print	Citation	Figures	Presentation	Brochure
Climate and Health Assessment	39MB	98MB	738B	-	-	-
Front Matter	3MB	7MB	-	-	-	-
Executive Summary	9MB	9MB	682B	2MB	4MB	-
Ch. 1. Climate Change and Human Health	3MB	7MB	546B	1MB	3MB	600KB
Ch. 2. Temperature-Related Death and Illness	2MB	4MB	572B	614KB	2MB	2MB

Spanish translated Executive Summary also available

Spanish translated Executive Summary also available

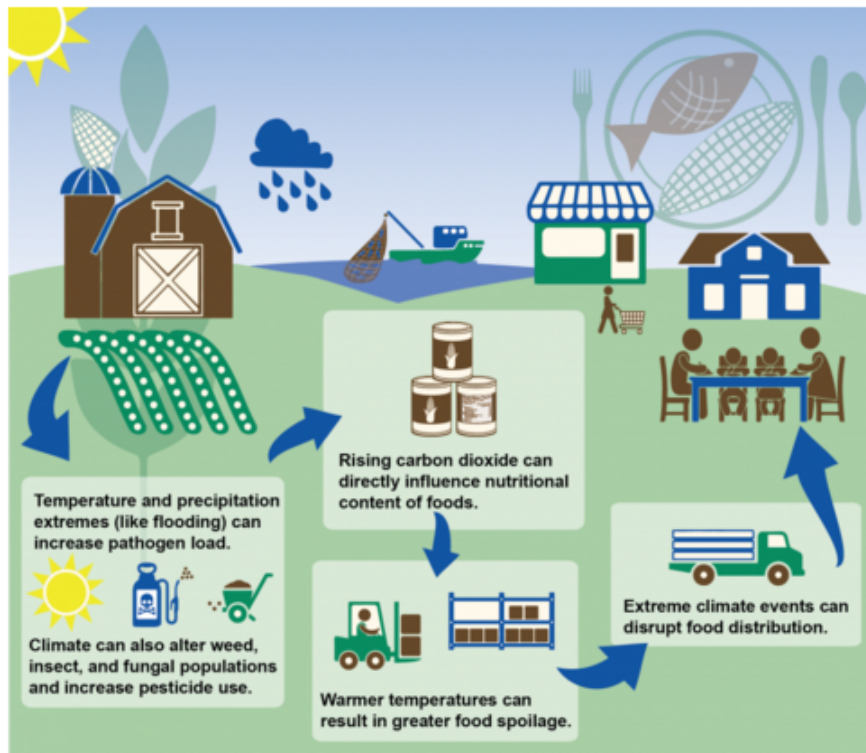


Resources: health2016.globalchange.gov

Figure 7.1: Farm to Table: The Potential Interactions of Rising CO₂ and Climate Change on Food Safety and Nutrition



Icons let you download figures, view metadata, and share through social media



EPA Resources


www.epa.gov/climatechange/impacts/

Climate Change

Climate Change Home
Basic Information
Greenhouse Gas Emissions
Science
Impacts
Alaska
U.S. Islands
Southwest
Southeast
Northeast
Northwest
Midwest
Great Plains
International
Human Health
Ecosystems
Forests
Transportation
Energy
Coasts
Agriculture and Food
Society
Water Resources
Adaptation
What EPA is Doing
What You Can Do
Newsroom
Glossary
Students' Site

You are here: EPA Home » Climate Change » Impacts

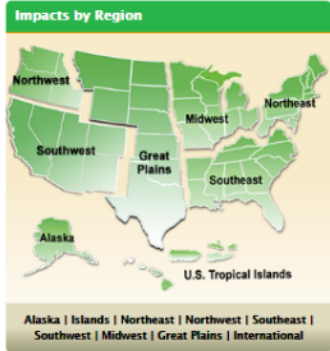
Climate Change Impacts



The changing climate impacts society and ecosystems in a broad variety of ways. For example climate change can increase or decrease rainfall, influence agricultural crop yields, affect human health, cause changes to forests and other ecosystems, or even impact our energy supply. Climate-related impacts are occurring across regions of the country and across many sectors of our economy.

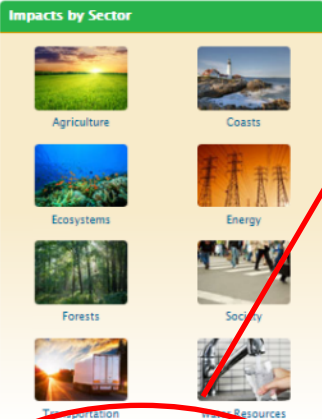
Explore the impacts of climate change by region or by sector.

Impacts by Region




Alaska | Islands | Northeast | Northwest | Southeast | Southwest | Midwest | Great Plains | International

Impacts by Sector



Agriculture | Coasts
Ecosystems | Energy
Forests | Society
Transportation | Water Resources

Related Links



Preparing for Change - Adaptation Resources
National Climate Assessment
USCRP Climate and Health Assessment

Human Health Impacts

Learn about the health impacts of climate change
Quiz: How much do you know about the Health Impacts of Climate Change?
Factsheets: Climate Change, Health, and Populations of Concern
How Will Climate Change Affect My Health? (PDF, 1 pp, 1 MB) (Text version (PDF, 2 pp, 551 KB))

or search for: “EPA climate impacts health”

Human Health Impacts

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Climate Change and Human Health Risks in Your State

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How Will Climate Change Affect My Health? (PDF, 1 pp, 1 MB) (Text version (PDF, 2 pp, 551 KB))

EPA Resources

10- question online quiz with social media sharing options

Quiz: How Much Do You Know About the Health Impacts of Climate Change?

Understanding the threats that climate change pose to human health can help us work together to lower risks and be prepared. Take this quiz to see how much you know about the health impacts of climate change.

4

Which illness does NOT increase in frequency along with higher temperatures?


☐ A. Dehydration

☐ B. Arthritis

☐ C. Kidney stones

☐ D. Legionnaires' disease

SUBMIT



Source: Impacts of Climate Change on Human Health in the United States: A Scientific Assessment

4/10

Human Health Impacts

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<https://www.epa.gov/climatechange/impacts/health-assessment-quiz.html>

EPA Resources

A **clickable map** with examples of state impacts and resources to prepare and respond to climate threats



EPA United States Environmental Protection Agency

LEARN THE ISSUES SCIENCE & TECHNOLOGY LAWS & REGULATIONS ABOUT EPA

Climate Change

You are here: EPA Home > Climate Change > Impacts > Climate Change and Human Health Risks in Your State

Climate Change and Human Health Risks in Your State

Climate change poses risks to human health. Already in the United States, we are seeing rising temperatures, increased frequency and intensity of some types of extreme weather, sea level rise, and other changes in weather and climate patterns.

We are all vulnerable to the health impacts associated with climate change. However, these climate and health risks vary across the country. Click on the map below or use the drop-down menu to learn about examples of climate-related health risks in your state and actions you can take to reduce these risks. Find additional resources for your area below the map.

Select a state:

Alaska
U.S. Islands
Southwest
Southeast
Northeast
Northwest
Midwest
Great Plains
International
Human Health
Ecosystems
Forests
Transportation
Energy
Coasts
Agriculture and Food
Society
Water Resources
Adaptation
What EPA is Doing
What You Can Do
Newsroom
Glossary
Students' Site

Disasters of Columbia

Puerto Rico
Virgin Islands

Human Health Impacts

Learn about the health impacts of climate change

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<https://www.epa.gov/climatechange/impacts/health-assessment.html>

EPA Resources

Eight factsheets covering issues related to populations especially vulnerable to the health impacts of climate change



1. Indigenous/tribal
2. Environmental justice (e.g., low income, minority, immigrants)
3. Occupational groups
4. Older adults/elderly
5. Children
6. Pregnant women
7. People with disabilities
8. People with pre-existing medical conditions

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<https://www.epa.gov/climatechange/impacts/health/factsheets/>

Spanish translated versions available on the EPA En Espanol website:

<https://espanol.epa.gov/espanol/hojas-informativas-el-cambio-climatico-la-salud-y-las-poblaciones-que-nos-preocupan>

EPA Resources

Graphic on how climate change can affect your health at different stages of your life



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<https://www.epa.gov/climatechange/impacts/health/factsheets/climate-health-life-stages.pdf>

Allison Crimmins

crimmins.allison@epa.gov

USGCRP resources: health2016.globalchange.gov

EPA resources: www.epa.gov/climatechange/impacts/health.html



Roundtable Discussion



Allison Crimmins
U.S. Environmental
Protection Agency



David Rouse
American Planning
Association



Elizabeth Rhoades
Los Angeles County
Dept. of Public Health



Judy Robinson
County of
Sacramento



Linda Helland
California Department
of Public Health

Thank you!

- **Special thanks to our panelists!**
- **To learn more about ARCCA:**
 - Visit www.arccacalifornia.org
 - Contact Julia Kim at jkim@lgc.org or (916) 448-1198 x304
- **Stay tuned for our next Learning Session!**