The Intersection of Environment, Housing, and Health

Part 3: Climate Change and Considerations for Health Care

Deepa Mankikar, Public Health Project Manager
Kevin Leacock, Public Health Project Coordinator

November 20, 2019

NATIONAL NURSE-LED CARE CONSORTIUM
a PHMC affiliate

National Nurse-Led Care Consortium

The **National Nurse-Led Care Consortium (NNCC)** is a membership organization that supports nurse-led care and nurses at the front lines of care.

NNCC provides expertise to support comprehensive, community-based primary care.

- Policy research and advocacy
- Technical assistance and support
- Direct, nurse-led healthcare services

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Question & Answer

During the presentation, you may ask questions. Click **Q&A** and type your questions into the open field.

The Moderator will either send a typed response or answer your questions live at the end of the presentations.

Reminder: After the webinar, NNCC will host Office Hours with today's presenter! Stick around to join the conversation!

Quick Poll Questions

1. To better understand our attendees, please indicate your interest in this webinar is as a ____
   - Clinician
   - Administrator/Manager
   - Community advocate
   - Policy maker
   - Student
   - Other

2. Describe your workplace setting.
   - Hospital/Health system
   - Health center
   - Non-profit organization
   - For-profit organization
   - Government agency
   - Institutes of Higher Education
   - Other

Quick Poll Questions

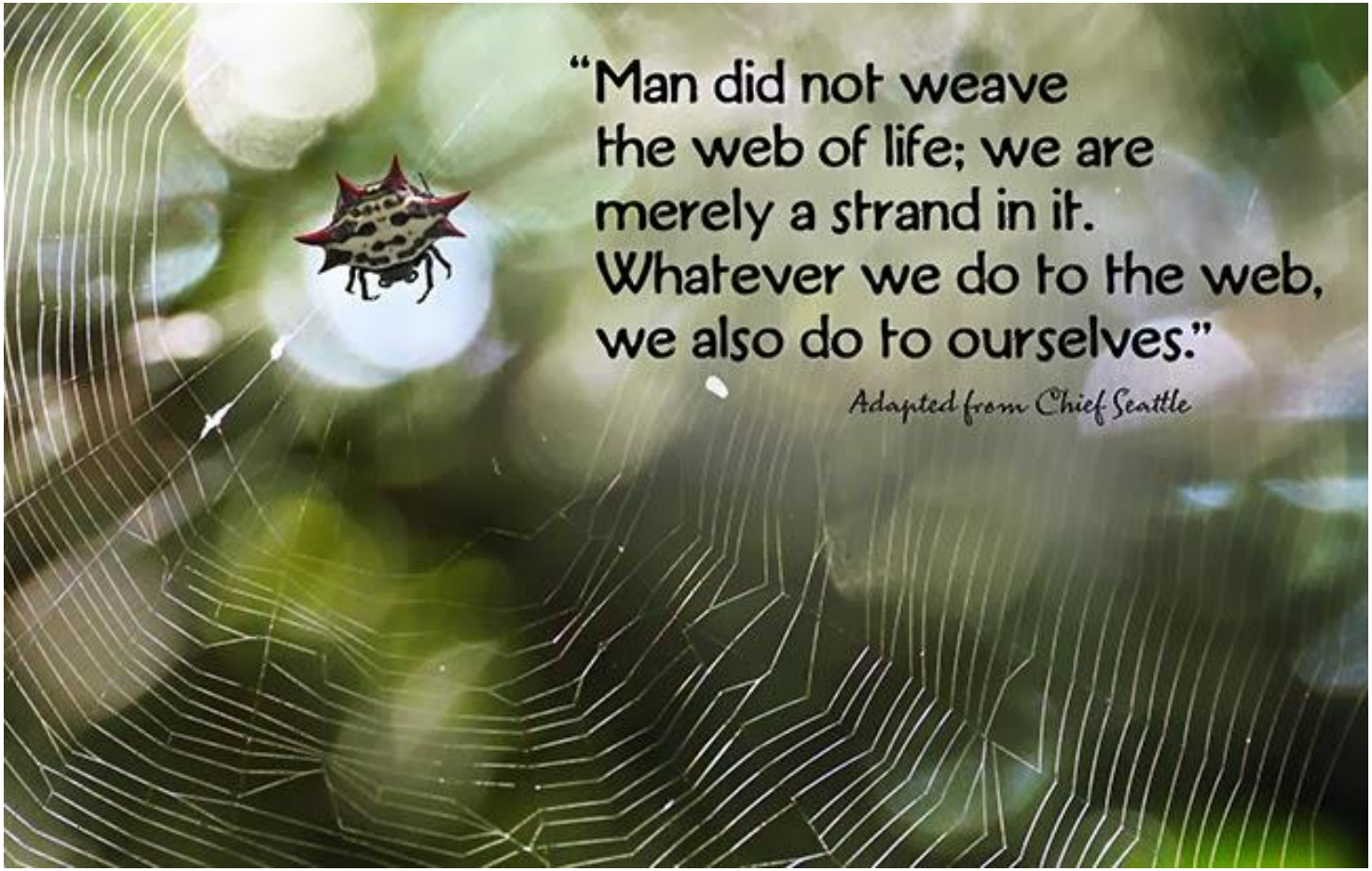
1. What climate change impact are you <u>most</u> interested in hearing about today?
   - Extreme Heat
   - Wildfires
   - Hurricanes
   - Flooding
   - Air Quality Issues
   - Drought

Climate Change and Considerations for Health Care

November 20, 2019

Laura Anderko PhD RN
la266@georgetown.edu
Professor & Scanlon Endowed Chair, Values Based Health Care
Director, Mid-Atlantic Center for Children's Health and the Environment
White House Champion of Change: Climate Change and Public Health

GEORGETOWN UNIVERSITY

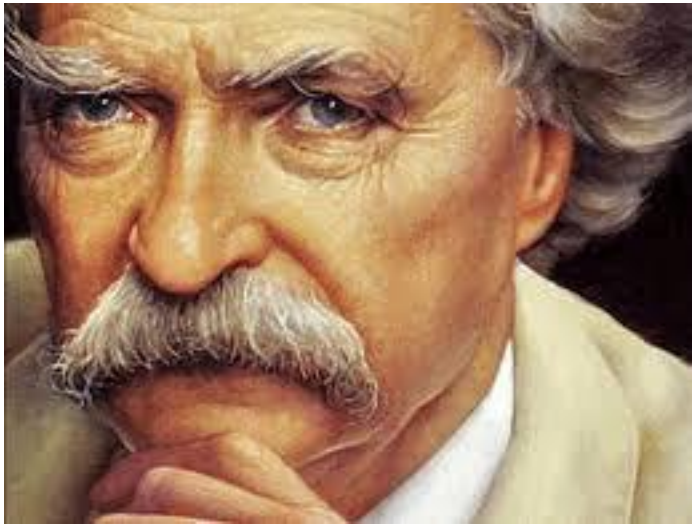

"Man did not weave
the web of life; we are
merely a strand in it.
Whatever we do to the web,
we also do to ourselves."
Adapted from Chief Seattle

"Warming of the climate system is unequivocal."

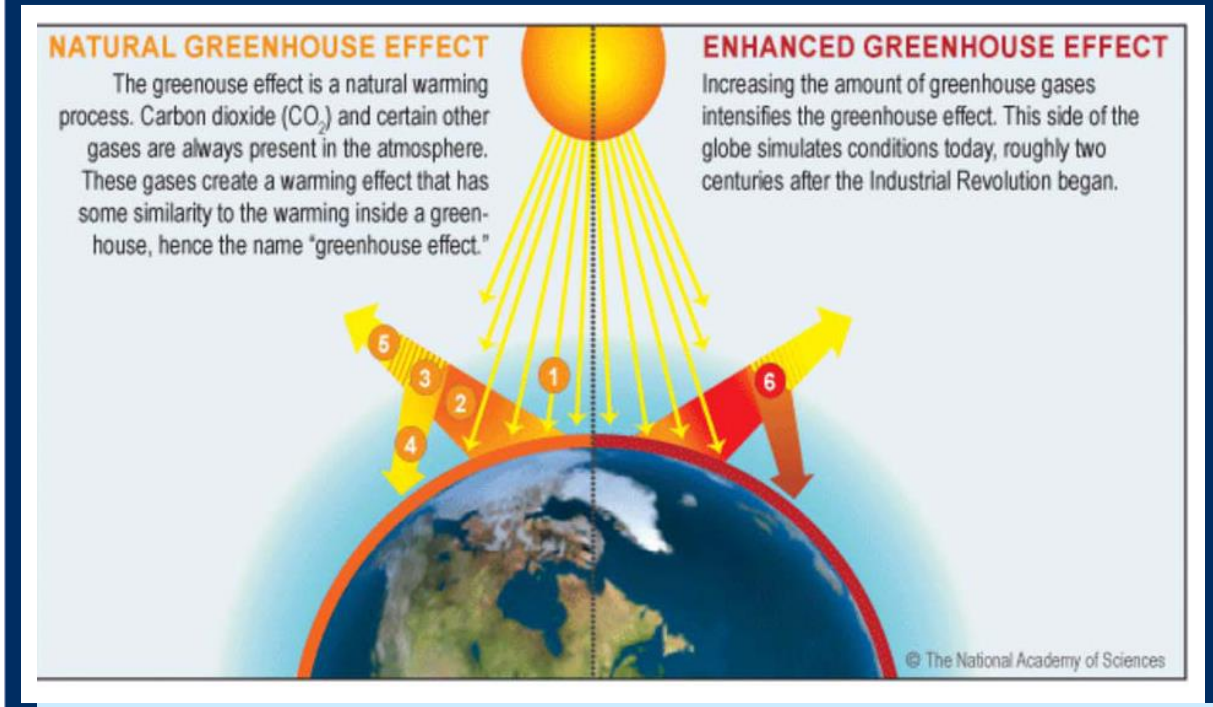
-Intergovernmental Panel on Climate Change, 2007

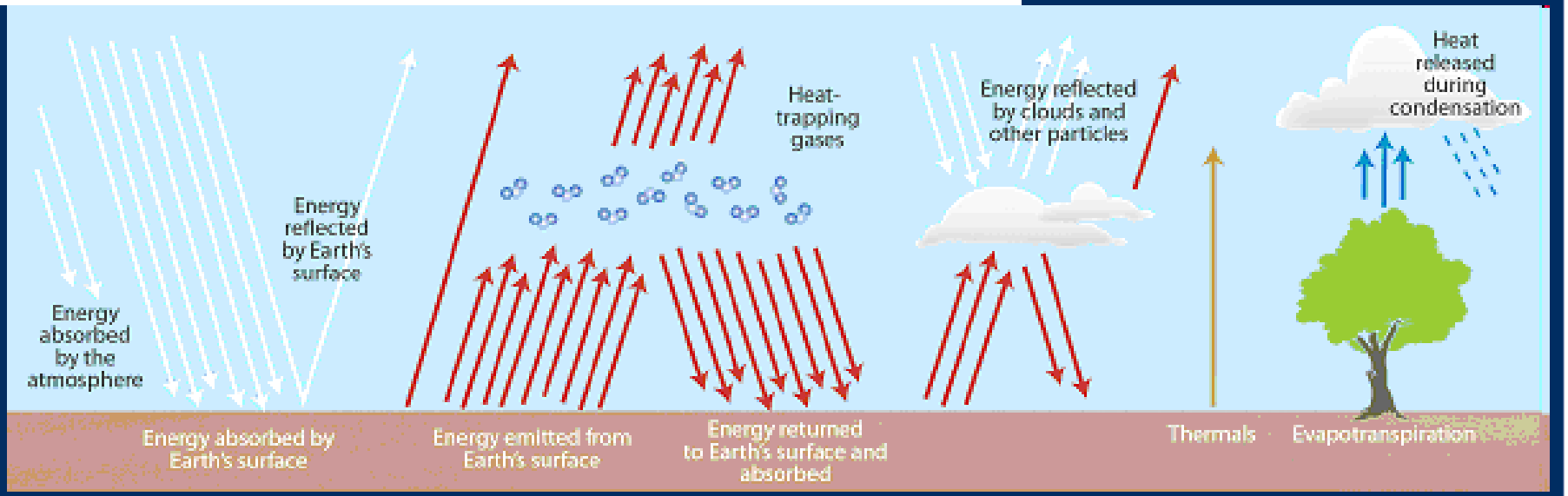
What is Climate Change?

Climate is what we expect, weather is what we get

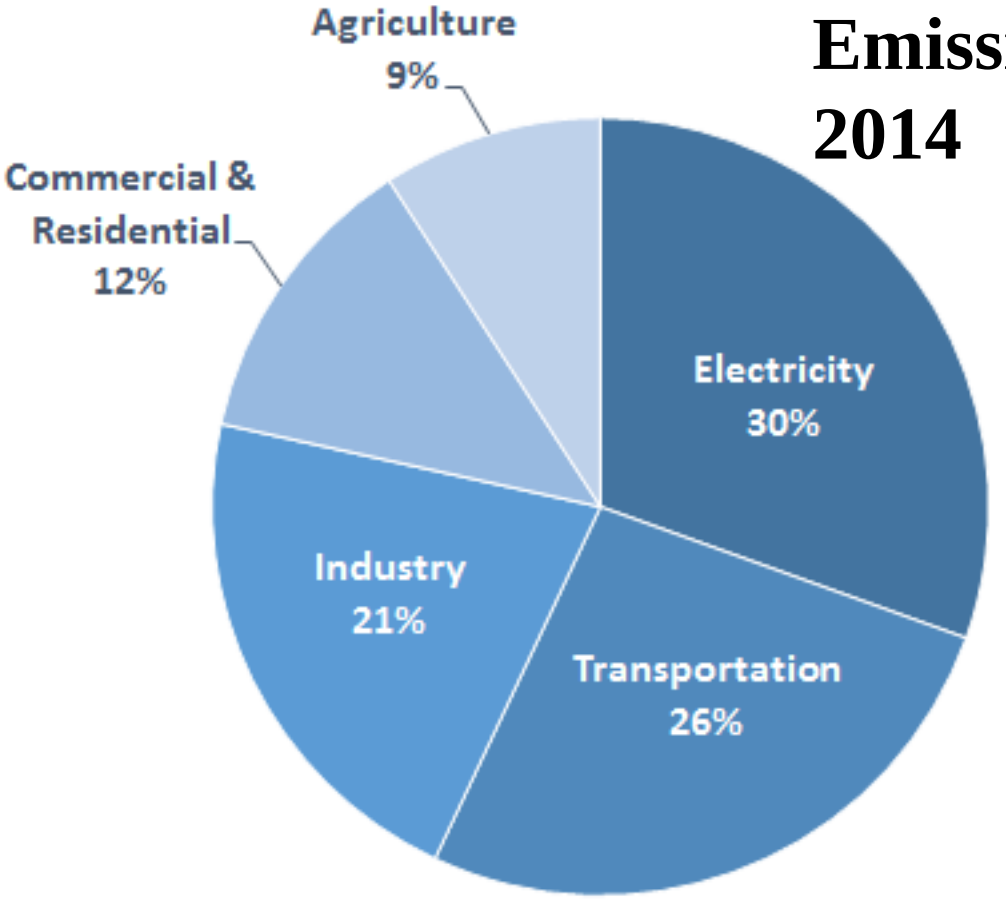


GREENHOUSE EFFECT





Total U.S. Greenhouse Gas Emissions by Economic Sector in 2014



Total Emissions in 2014 = 6,870 Million Metric Tons of CO_2 equivalent

Land Use, Land-Use Change, and Forestry in the United States is a net sink and offsets approximately 11% of these greenhouse gas emissions.

All emission estimates from the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014

Carbon Dioxide

Where does it come from?

Burning fossil fuels to produce electricity and heat buildings

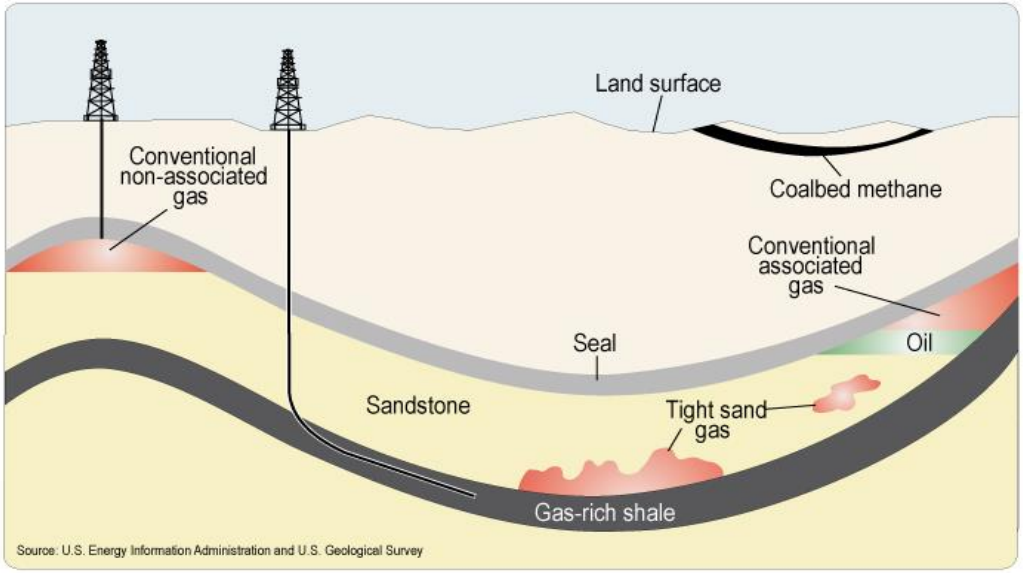
Burning gasoline and other fossil fuels to run vehicles

Cutting down and burning trees or other vegetation

Some industrial and manufacturing processes, like producing cement

How long does it stay in the atmosphere?

50 to thousands of years



Methane

Where does it come from?

Livestock. As they digest food and when manure decays

Landfills. Trash breaks down and releases methane

Producing and transporting natural gas.

Cutting down and burning trees or other vegetation

Mining coal. Can be released during mining

How long does it stay in the atmosphere?

12 years (over 20X more heat trapped than the same amount of carbon dioxide)

Nitrous Oxide

Where does it come from?

Farming practices that add nitrogen to the soil (fertilizer)

Burning fossil fuels to run vehicles

Some industrial and manufacturing processes

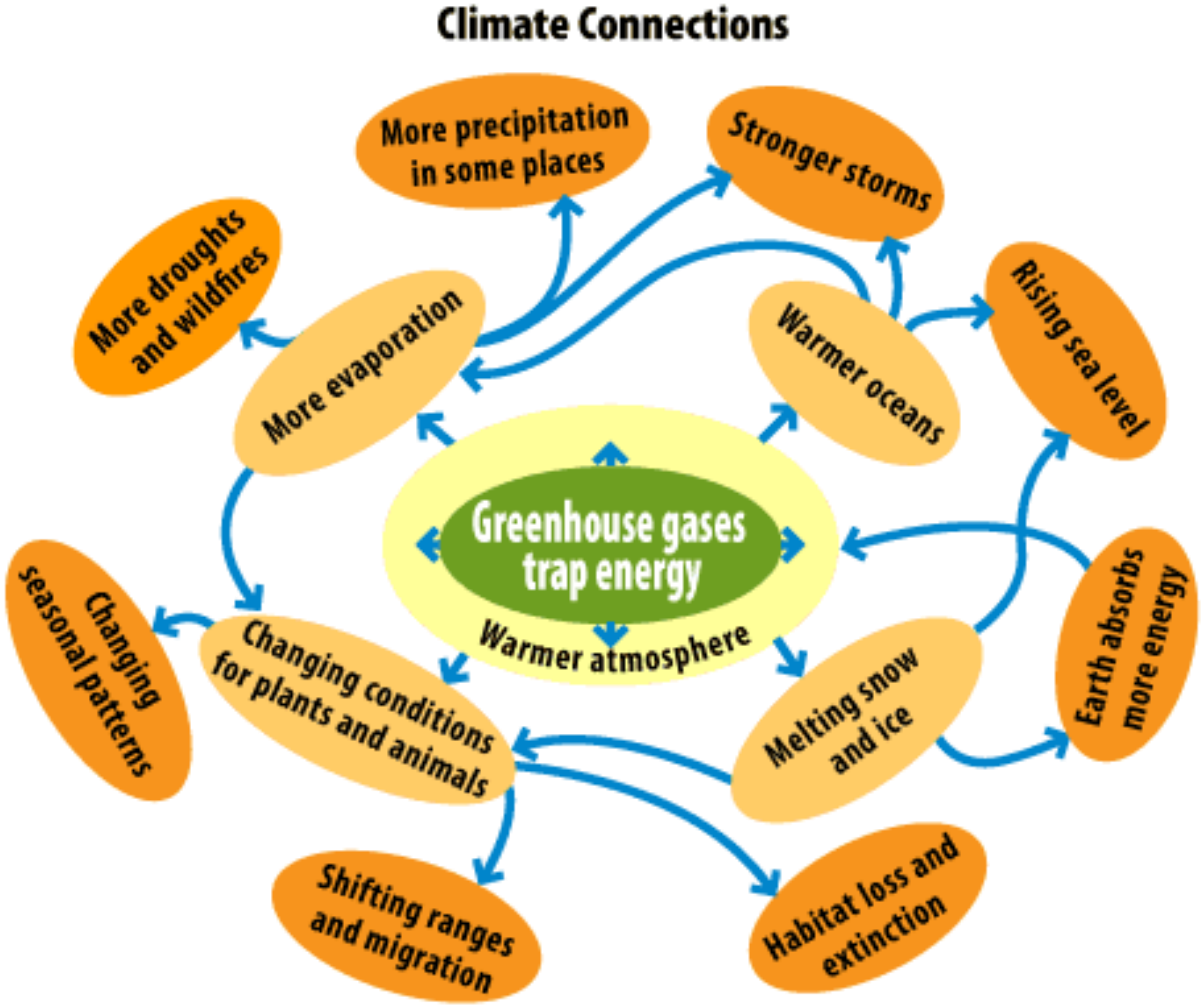
How long does it stay in the atmosphere?

114 years; 298X more heat trapped than the same amount of carbon dioxide

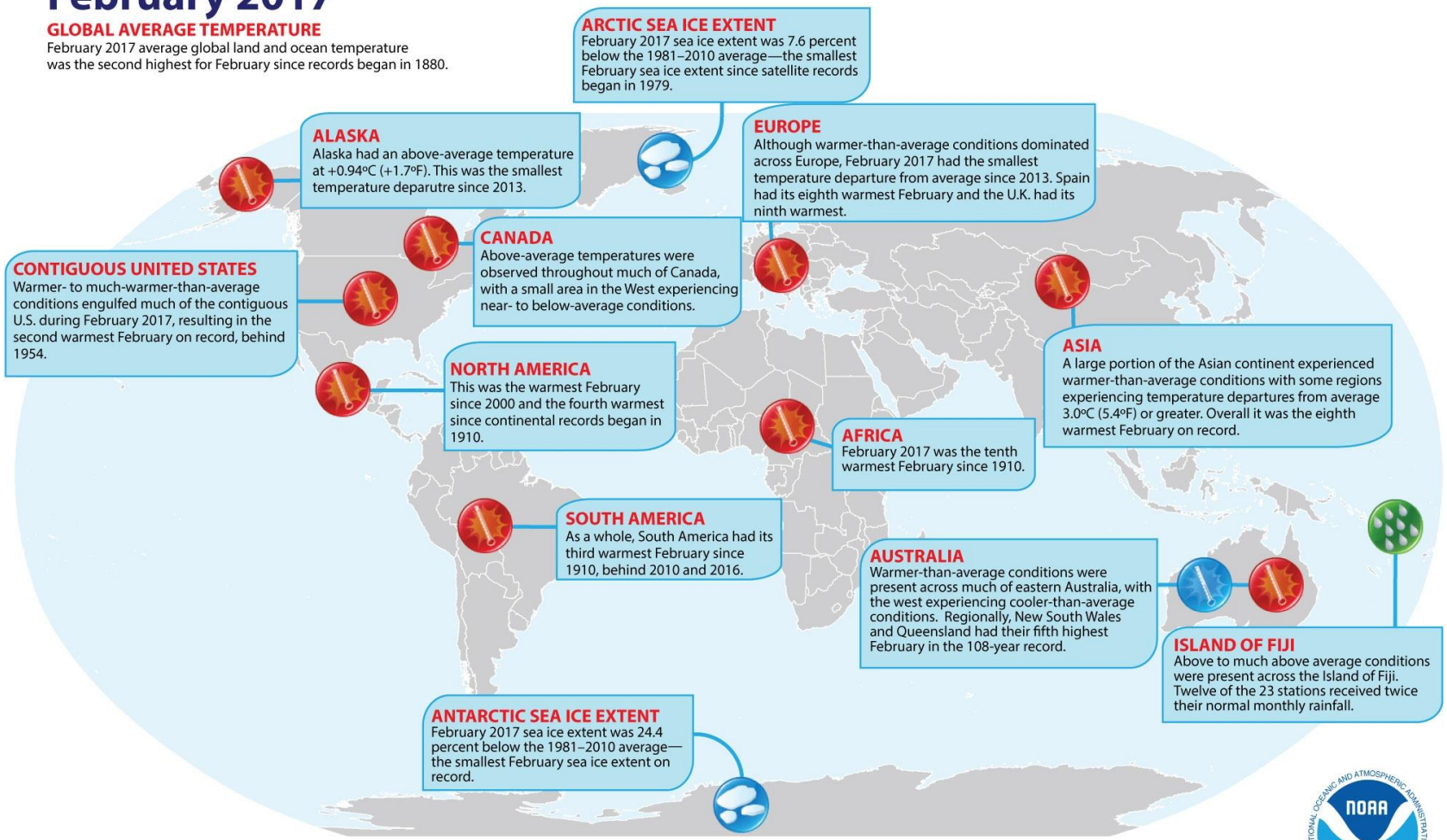
INCREASING MAGNITUDES OF WARMING INCREASE THE LIKELIHOOD OF

SEVERE AND PERVASIVE IMPACTS

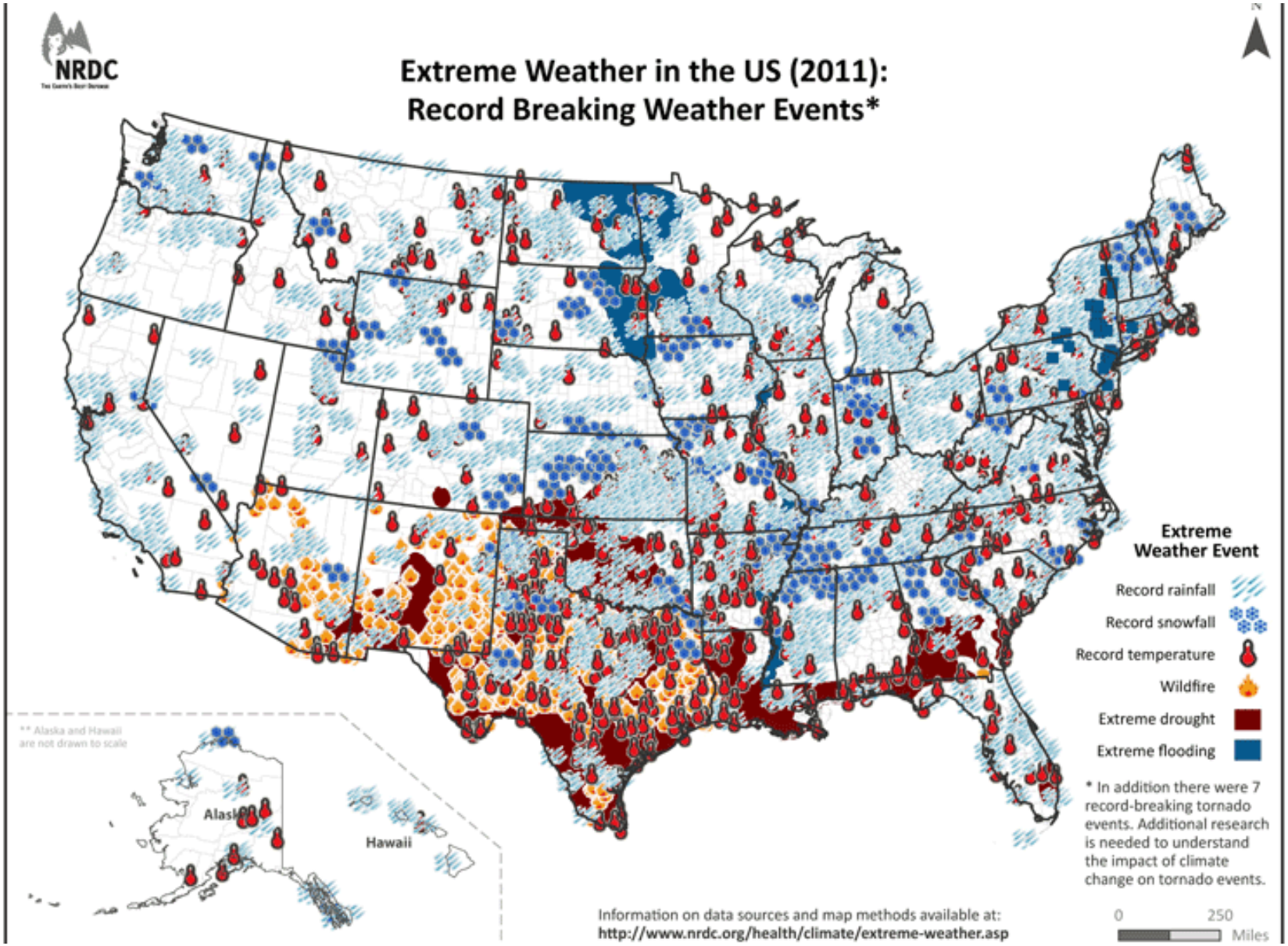
ipcc
INTERGOVERNMENTAL PANEL ON climate change


Climate Connections
More precipitation in some places
Stronger storms
More droughts and wildfires
More evaporation
Warmer oceans
Rising sea level
Greenhouse gases trap energy
Warmer atmosphere
Changing seasonal patterns
Changing conditions for plants and animals
Melting snow and ice
Earth absorbs more energy
Shifting ranges and migration
Habitat loss and extinction

Selected Significant Climate Anomalies and Events
February 2017

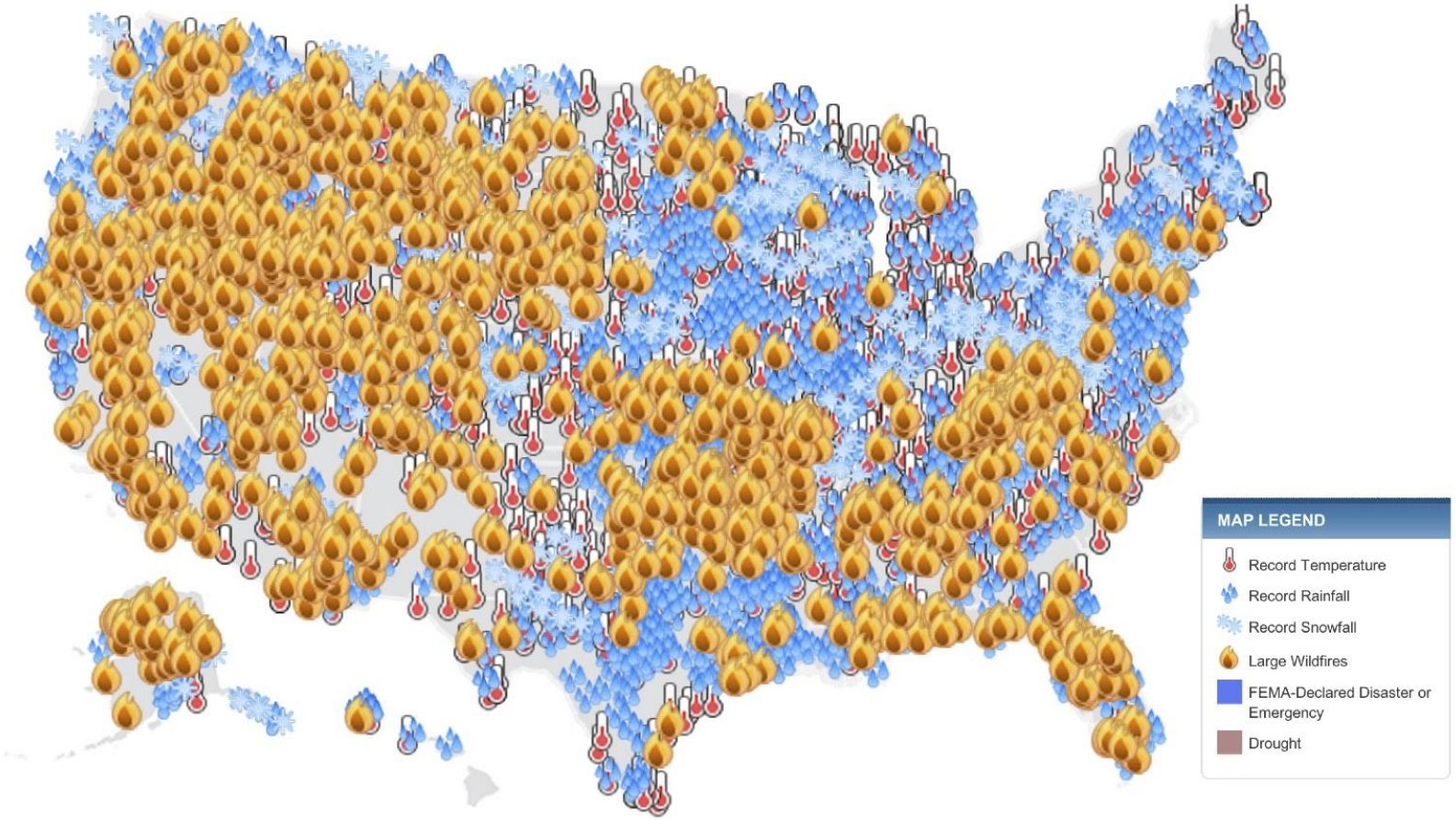


Please Note: Material provided in this map was compiled from NOAA's State of the Climate Reports. For more information please visit: http://www.ncdc.noaa.gov/sotc


NRDC
Extreme Weather in the US (2011):
Record Breaking Weather Events*
Extreme Weather Event
Record rainfall
Record snowfall
Record temperature
Wildfire
Extreme drought
Extreme flooding
* In addition there were 7 record-breaking tornado events. Additional research is needed to understand the impact of climate change on tornado events.
** Alaska and Hawaii are not drawn to scale
Alaska
Hawaii
Information on data sources and map methods available at:
http://www.nrdc.org/health/climate/extreme-weather.asp
0
250
Miles

Extreme Weather Map

2012: Thousands of Weather Records Broken in the U.S., Costs Climbing



Climate Change and Health

Polling Question

- What health issues are associated with climate change?
  - Asthma
  - Depression
  - Vector-borne disease
  - All of the above

Human Health and Climate Change

The Intergovernmental Panel on Climate Change predicts that extreme events will result in a variety of health events between now and 2100

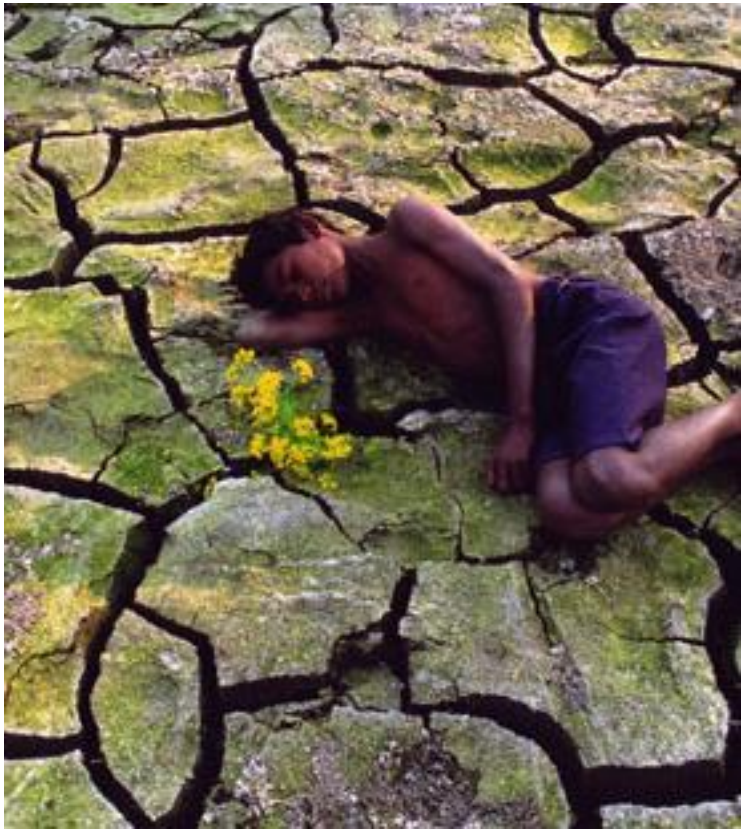
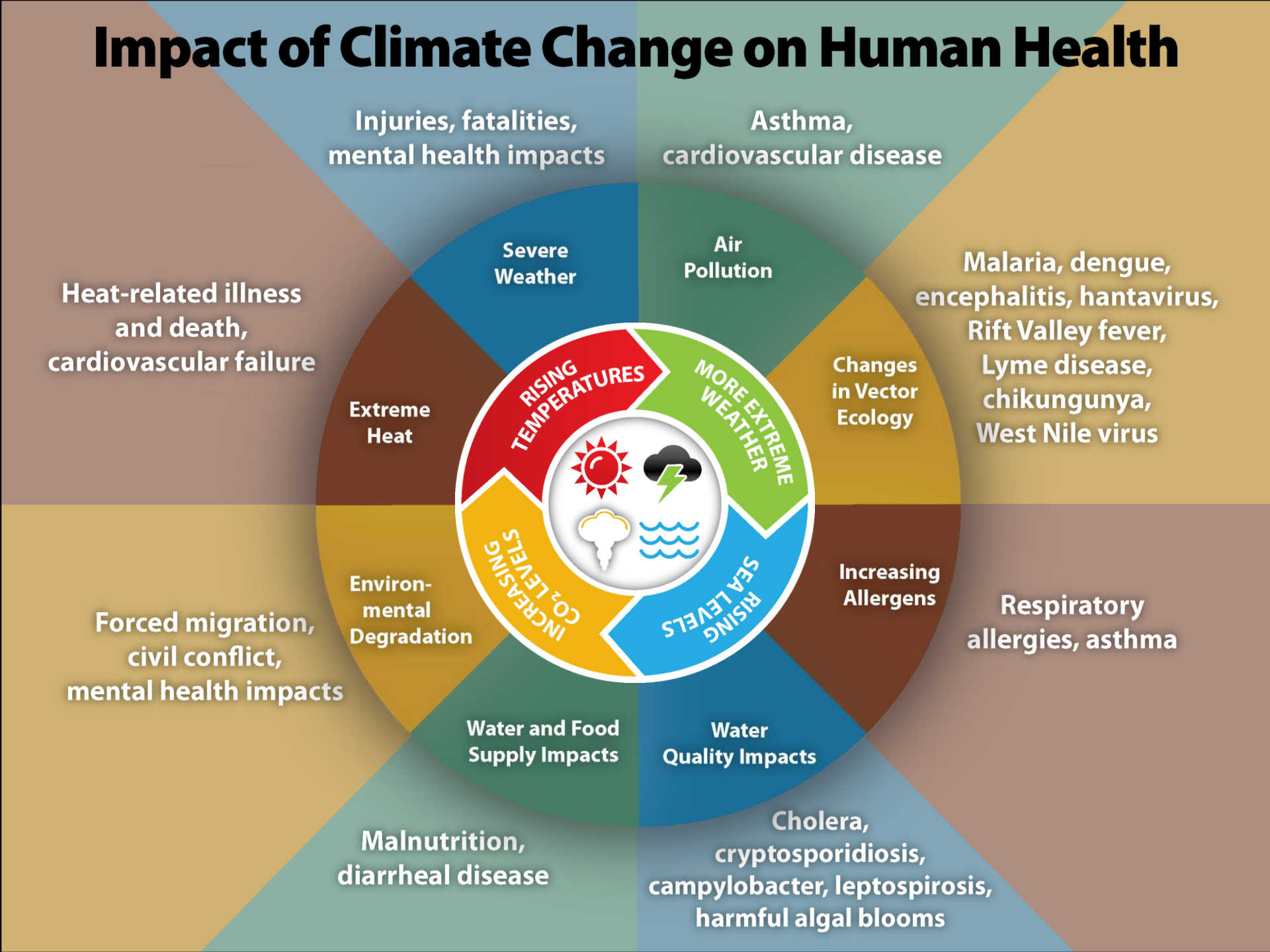
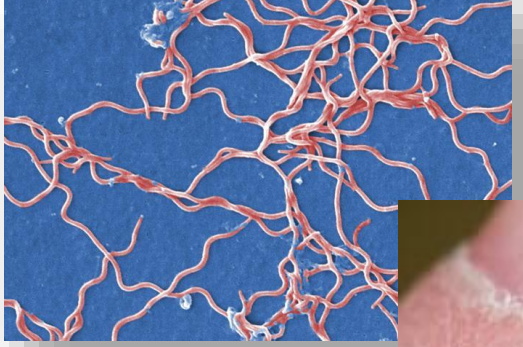


Image: UN.org

Impact of Climate Change on Human Health



Air Quality Impacts



Vector-Borne Diseases

FAIRBANKS

Daily News-Miner

The voice of Interior Alaska since 1903

Fairbanks, Alaska — THURSDAY, MAY 24, 2007

The buzz about town

Yellowjackets making an early appearance in the Interior

By TIM MOWRY
Staff Writer

If you listen closely, you can hear the hum in the woods.

They're buzzzzzack.

Hard as it is to believe, or maybe some of us we just don't want to, it's shaping up to be another bad year for yellowjackets in the Interior.

"I've never had this many calls this early for wasps and yellowjackets," said Diane Claassen, integrated pest management technician for the University of Alaska Fairbanks Cooperative Extension Service.

The calls started late last week and have continued at a higher volume this week.

"I've had two or three people tell me they can hear them buzzing in the woods again," Claassen said. "A couple people have asked if it's going to be as bad as last year."

Last year was a particularly bad year for yellowjackets in Fairbanks. Two residents died from allergic reactions to wasp stings, and yellowjackets terrorized the populace for most of July and half of August.

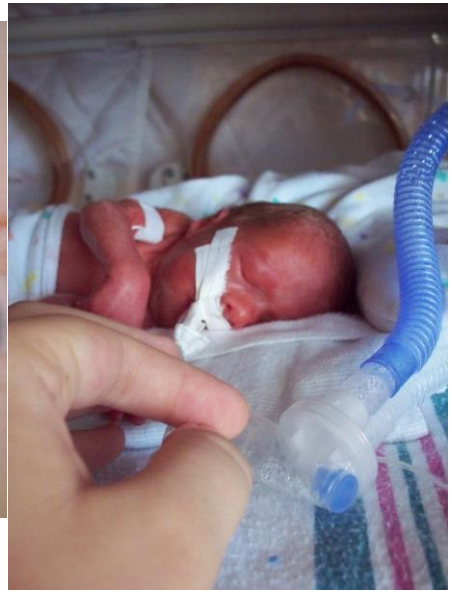
Several outdoor events were canceled or moved indoors because the risk of getting stung was so high. Demand for wasp spray was such that stores couldn't keep enough of the stuff on the shelf.

The bad news is that the yellowjackets seem to have arrived earlier this year and if the dry, warm weather of late persists, things will only get worse.

"This year might be as

See WASPS, Page B2

PESKY — Last year was a particularly bad year for yellowjackets in Fairbanks. They seemed to have arrived earlier this year and if the dry, warm weather persists, things may get worse.



Temperature-Related Death and Illness

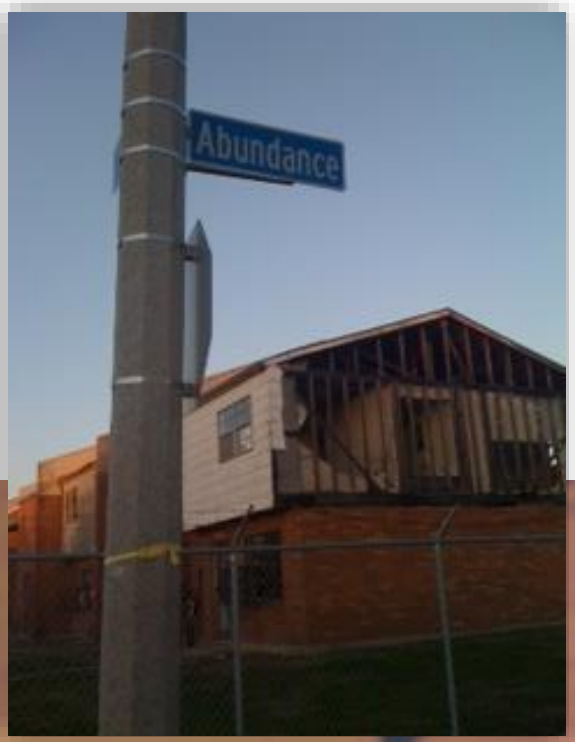
Water-Related Illness

Downtown Franklin, VA inundated by flood waters. (photo credit: FEMA)

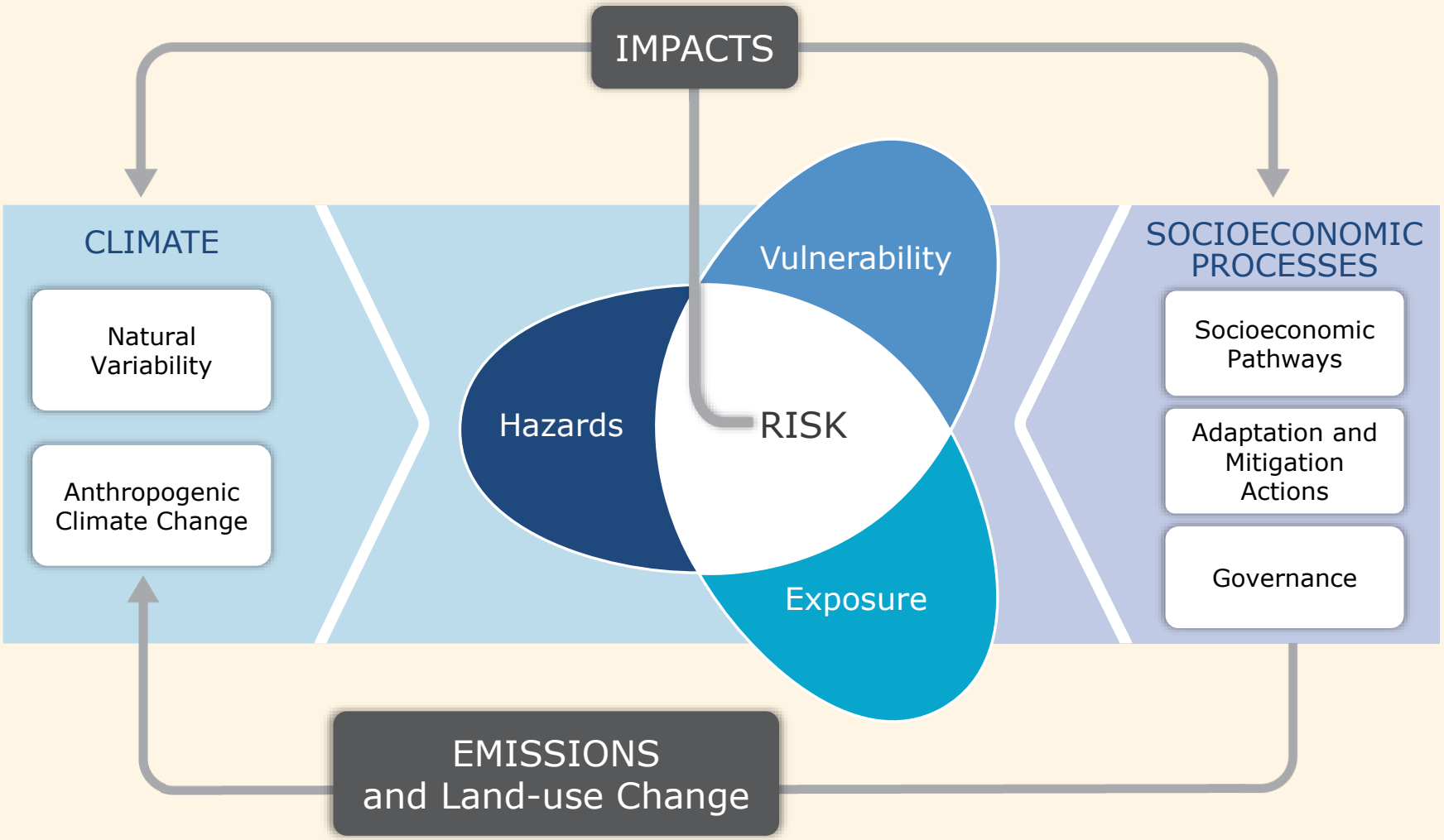
Extreme Events

Food Safety, Nutrition, and Distribution

Mental Health and Well-Being



Populations of Concern


IMPACTS
CLIMATE
Natural Variability
Anthropogenic Climate Change
Hazards
Vulnerability
RISK
Exposure
SOCIOECONOMIC PROCESSES
Socioeconomic Pathways
Adaptation and Mitigation Actions
Governance
EMISSIONS and Land-use Change

Lancet Commission on Health & Climate '15

Findings:
By moving toward low-carbon health systems, health care can become more climate resilient/prepared, mitigate its own climate footprint, and provide leadership in society

2025 Environmental Stewardship Goals for Kaiser Permanente

Climate Action
Become "carbon net positive" by buying enough clean energy and carbon offsets to remove more greenhouse gases from the atmosphere than we emit.

Sustainable Food
Buy all of our food locally or from farms and producers that use sustainable practices, including using antibiotics responsibly.

Waste Reduction
Recycle, reuse or compost 100% of our non-hazardous waste.

Water Conservation
Reduce the amount of water we use by 25% per square foot of buildings.

Safer Products
Increase our purchase of products and materials that meet environmental standards to 50%.

Managing Sustainability
Meet international standards for environmental management at all of our hospitals.

Collaboration
Pursue new collaborations to reduce environmental risks to foodsheds, watersheds and air basins supplying our communities.

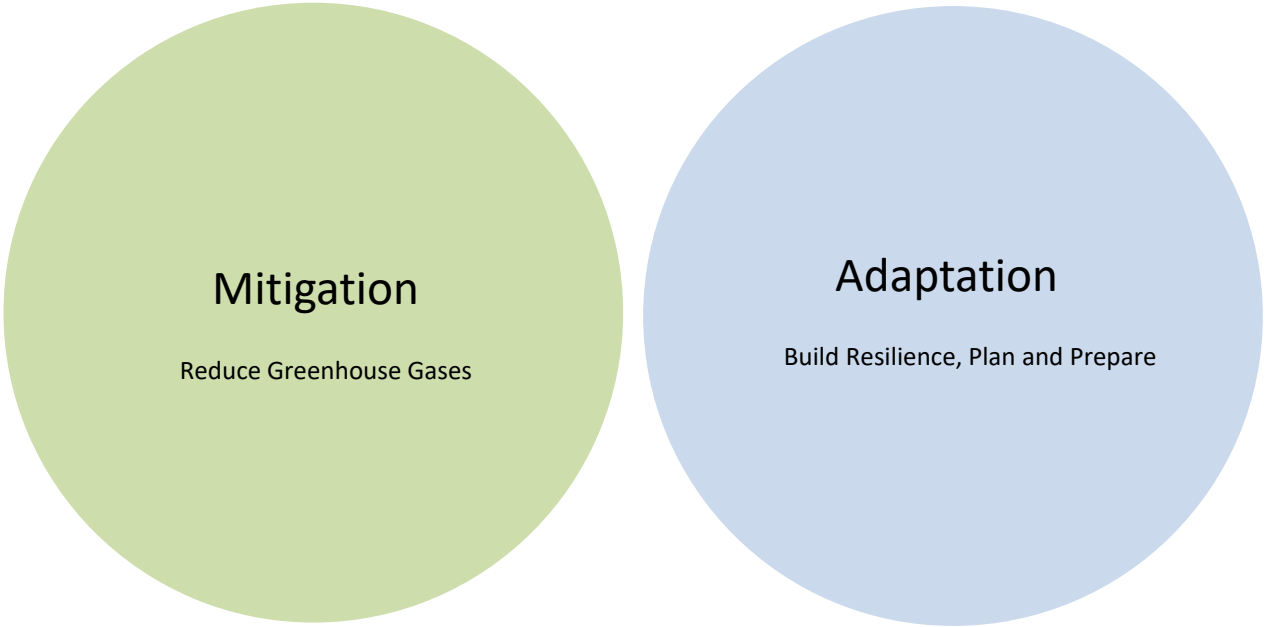
Polling Question

Which goal would you select as a priority for your institution/agency to combat climate change? (Select One)

- Clean/Renewable Energy
- Sustainable food-less meat
- Waste reduction
- Water conservation
- Safer products
- Managing sustainability
- Collaboration

STRATEGIES

Two Approaches



MITIGATION


walk • bike • bus • carpool • telecommute

Mitigation

In our Communities

- Walk, bus and bike
- Help build fossil free transportation options
- Help support local , healthy agriculture
- Eat less meat
- Plant trees

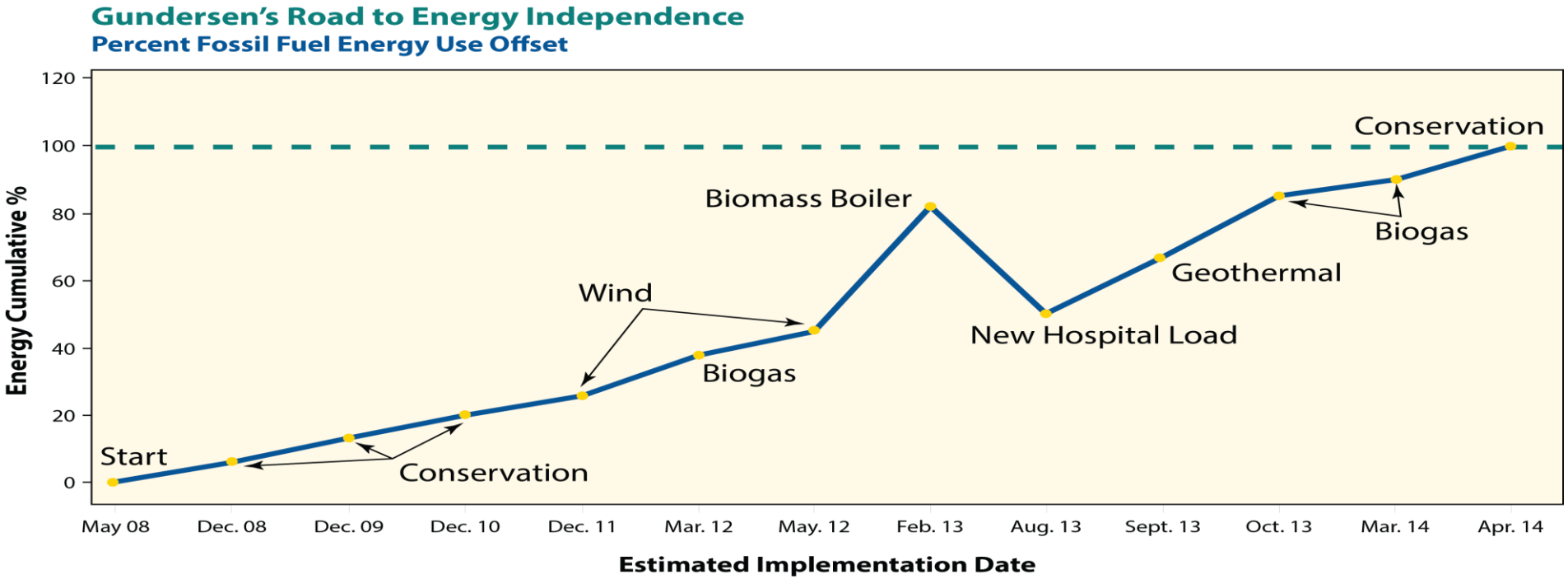
In Education

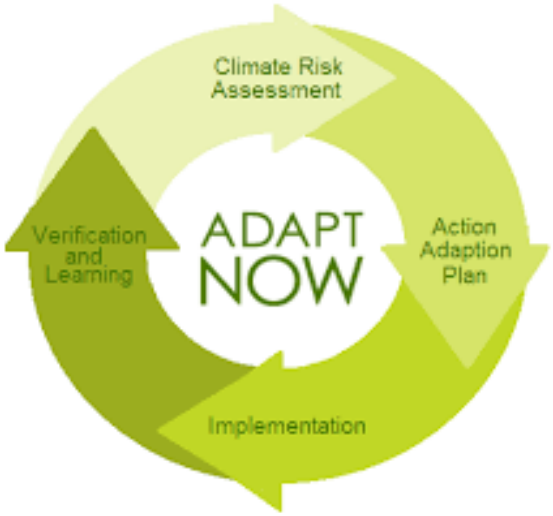
- Draw connections for patients, families, communities
- Educate other health professionals and students

Impacting Policy

- Communicate with elected officials at all levels
- Get involved with city/community planning
- Advocate for climate solutions (Clean Power Plan)

Gundersen Health System: first energy independent system in America




Climate Risk Assessment
Action Adaption Plan
Implementation
Verification and Learning
ADAPT NOW

ADAPTATION

Adaptation:
Build Resilience and Prepare

At the Places we Practice

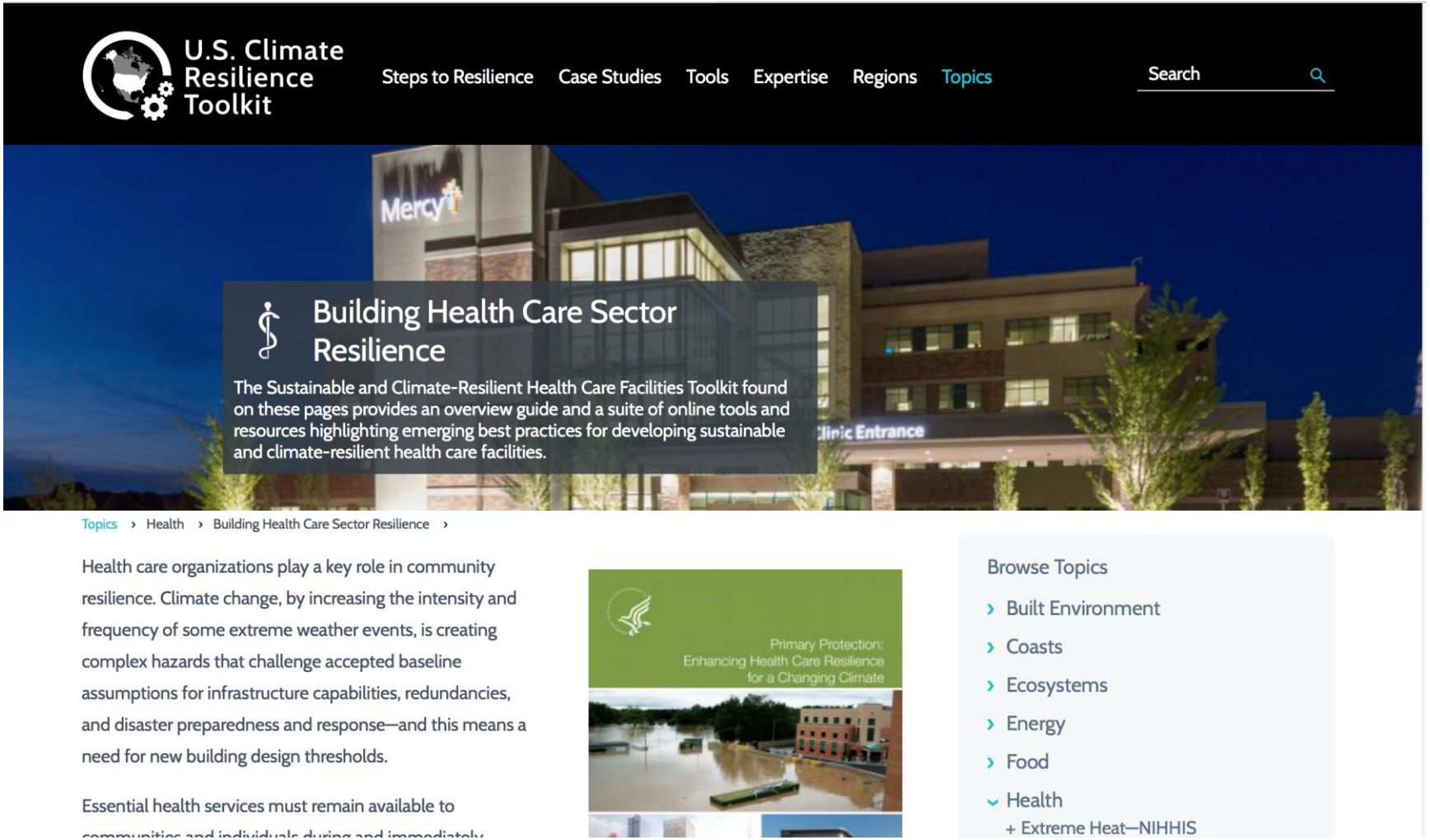
- Disaster preparedness
- Plan for health risks
- Incorporate resilience in building design

In our Communities

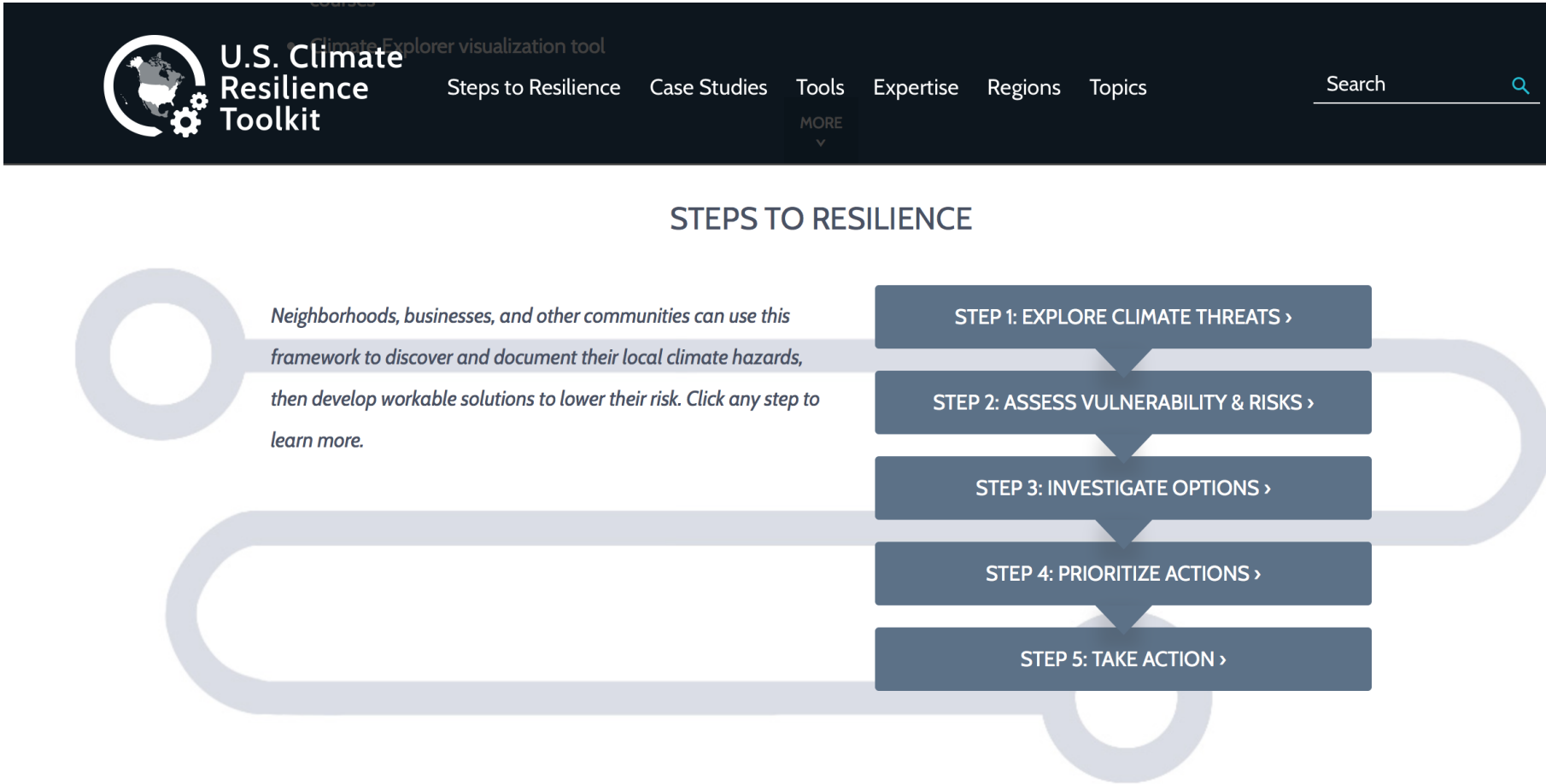
- Help address disaster preparedness
- Identify at risk populations to ensure safety
- Build supportive networks
- Support sustainable businesses, programs, and organizations

Impacting Policy

- Influence urban planning, city growth plans
- Communicate with elected officials regularly
- Get involved with health professional organizations



https://toolkit.climate.gov/topics/human-health/building-climate-resilience-health-sector


U.S. Climate Resilience Toolkit
Steps to Resilience
Case Studies
Tools
Expertise
Regions
Topics
MORE
Search
STEPS TO RESILIENCE
Neighborhoods, businesses, and other communities can use this framework to discover and document their local climate hazards, then develop workable solutions to lower their risk. Click any step to learn more.
STEP 1: EXPLORE CLIMATE THREATS ›
STEP 2: ASSESS VULNERABILITY & RISKS ›
STEP 3: INVESTIGATE OPTIONS ›
STEP 4: PRIORITIZE ACTIONS ›
STEP 5: TAKE ACTION ›

Working with local planning departments and other experts can help health care oganizations plan coordinated responses to various threats.

Anchors in Resilient Communities (ARC)

Multi-sector community-based partnership initiated by Emerald Cities Collaborative, Health Care Without Harm, and Democracy Collaborative

Launched 2015

KAISER PERMANENTE

Dignity Health

Berkeley UNIVERSITY OF CALIFORNIA

UCSF University of California San Francisco

THE SAN FRANCISCO FOUNDATION

EAST BAY COMMUNITY FOUNDATION

The California Endowment

EmeraldCities.org

State and Local Adaptation Plans

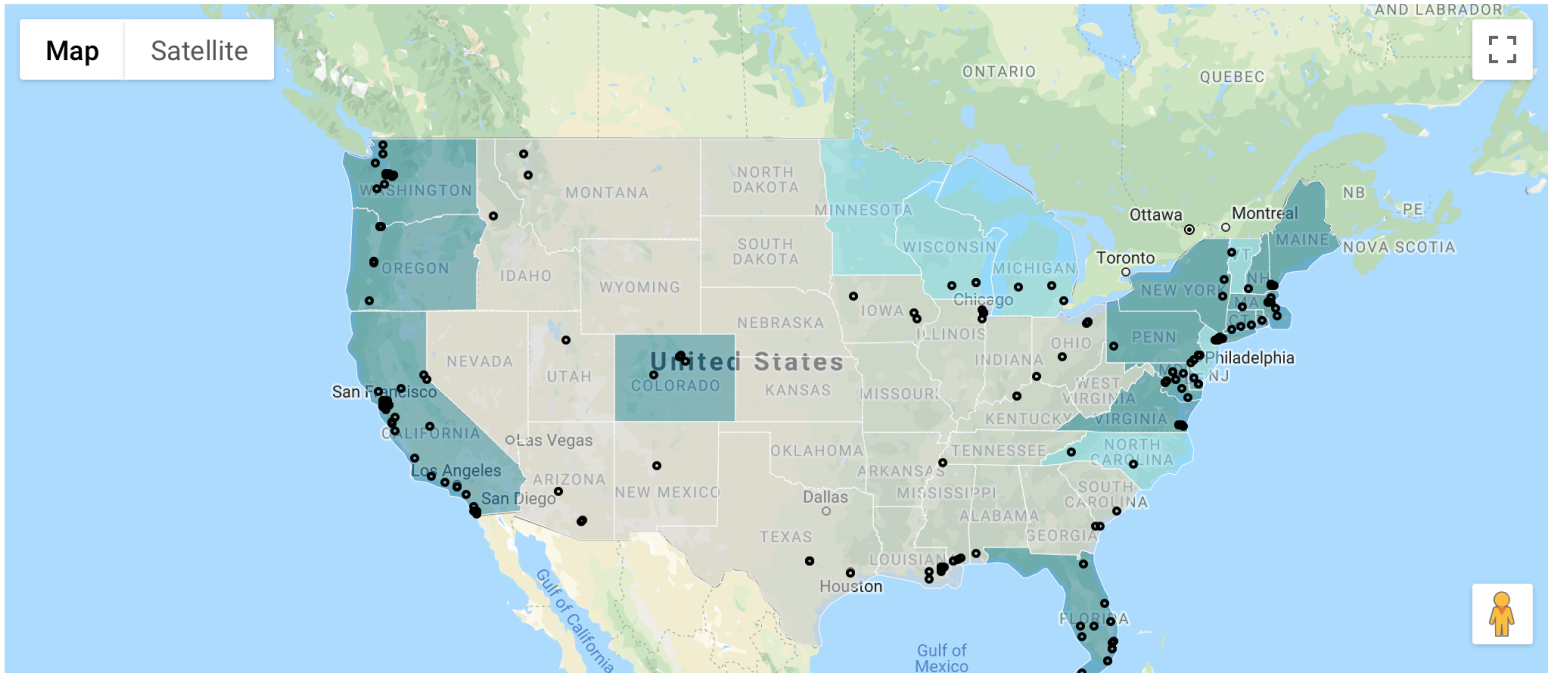
States and communities around the country have begun to prepare for the climate changes that are already underway. This planning process typically results in a document called an adaptation plan.

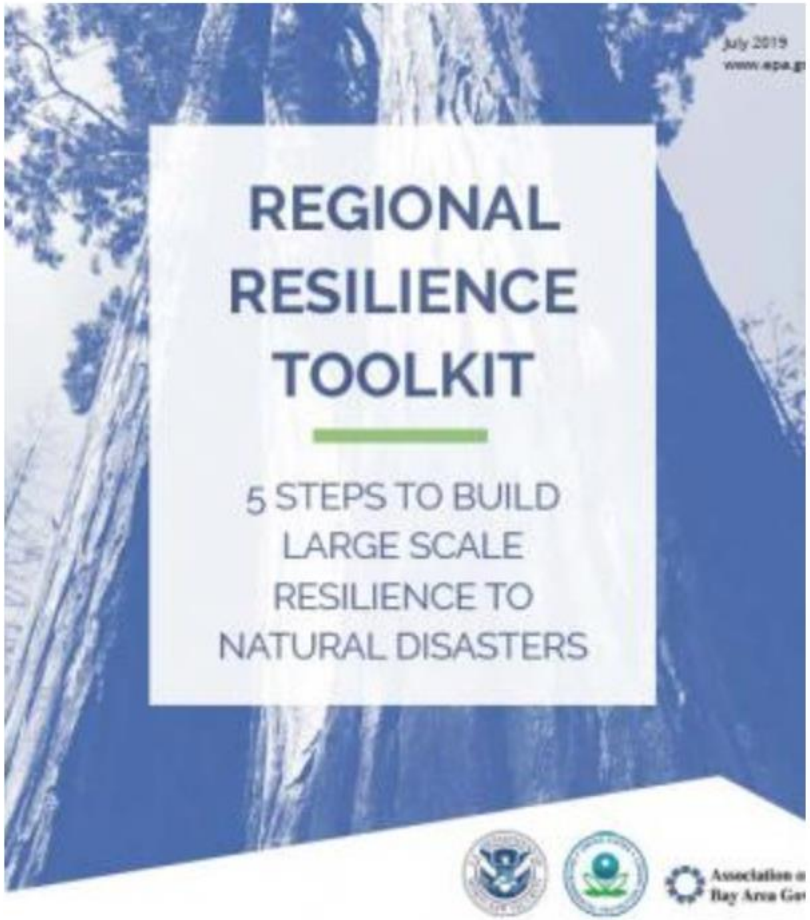
Below is a map that highlights the status of state adaptation efforts. Click on a state to view a summary of its progress to date and to access its full profile page. State profile pages include a detailed breakdown of each state's adaptation work and links to local adaptation plans and resources. Please move the map to view Alaska and Hawaii.

Select a State

Select State

Go





https://www.epa.gov/sites/production/files/2019-07/documents/regional_resilience_toolkit.pdf

Steps to Resiliency

- **Engage** - focuses on identifying and building trust among key stakeholders and partners, developing an engagement and outreach plan and milestones

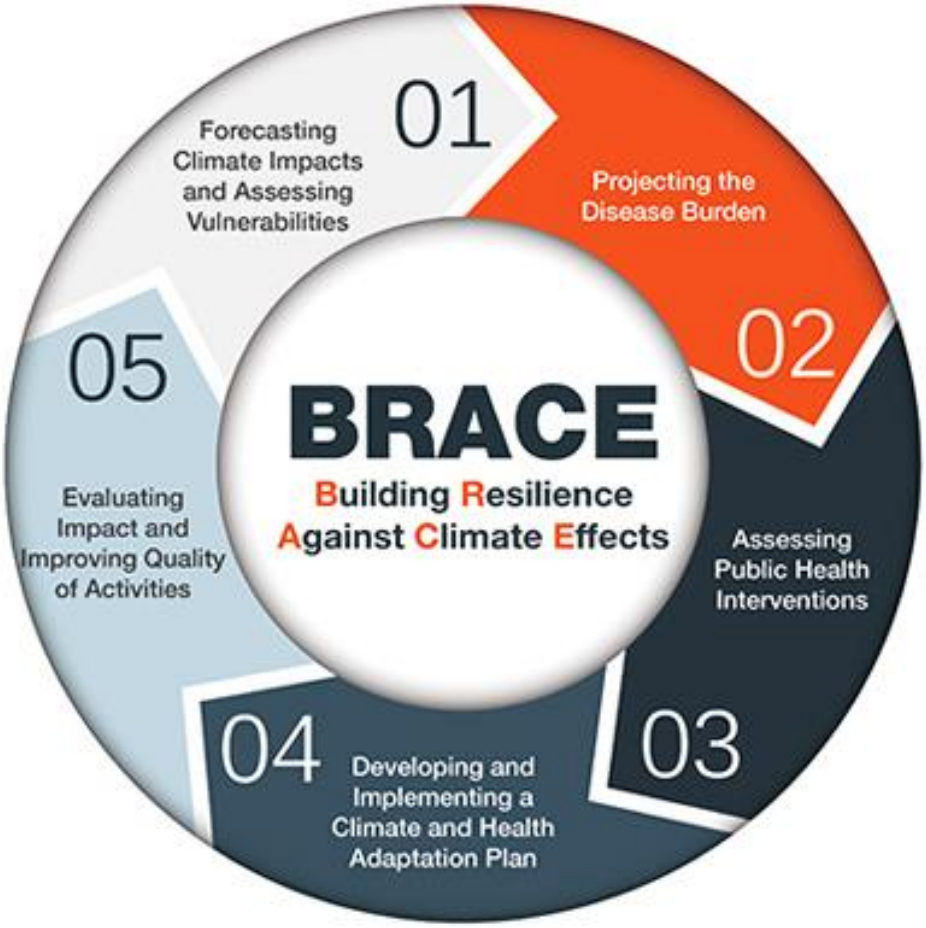
- **Assess** - provides guidance and tools for conducting a risk and vulnerability assessment.

- **Act** - use assessment findings to develop strategies for addressing hazards, to prioritize the most impactful strategies with stakeholder input, and to develop short- and long-term implementation plans.

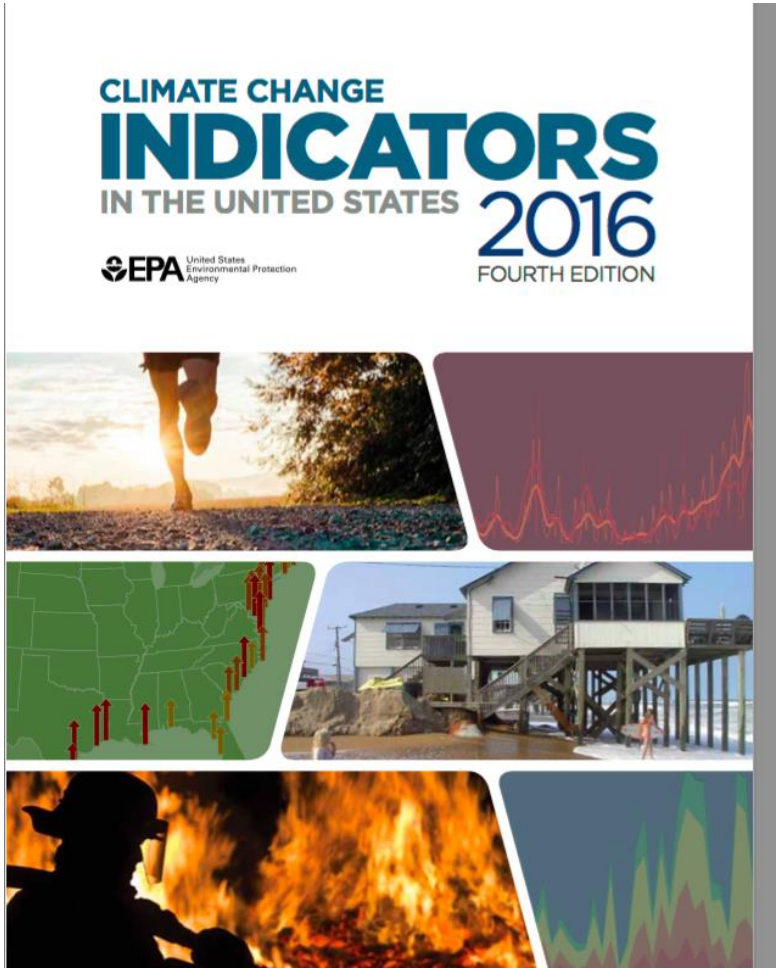
- **Fund** - focuses on developing funding and financing strategies, and making the business case for resilience projects.

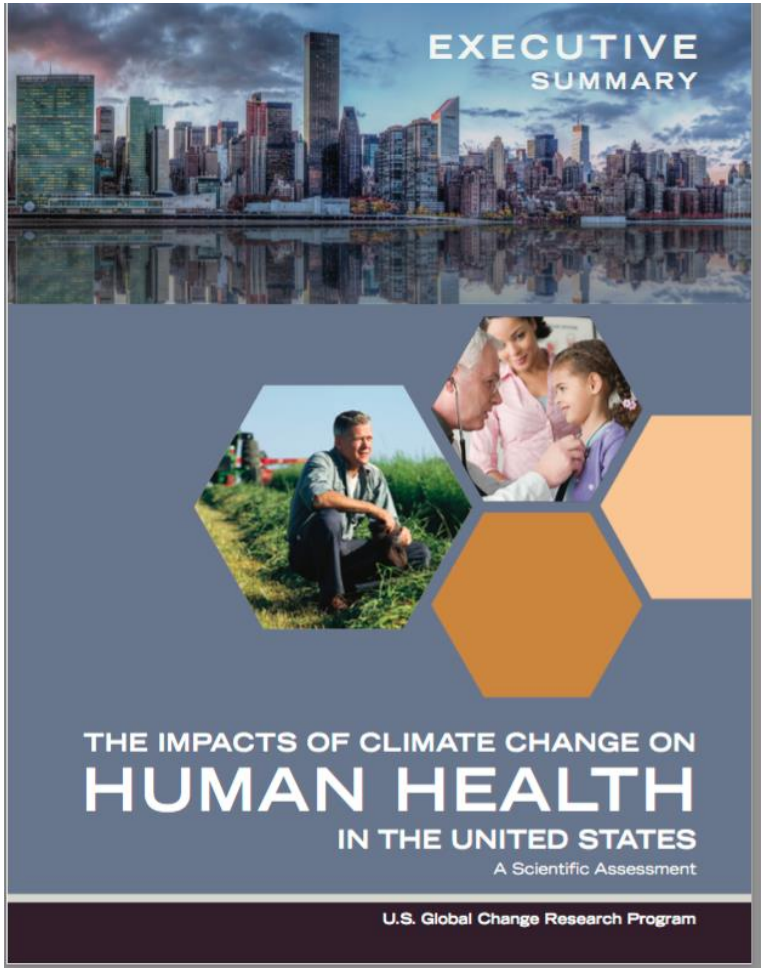
- **Measure** - provides guidance on when, how, and why to use metrics to self-evaluate progress towards resilience goals.

Climate Ready: CDC



ADDITIONAL RESOURCES


CLIMATE CHANGE
INDICATORS
IN THE UNITED STATES
2016
FOURTH EDITION
EPA United States Environmental Protection Agency


EXECUTIVE
SUMMARY
THE IMPACTS OF CLIMATE CHANGE ON
HUMAN HEALTH
IN THE UNITED STATES
A Scientific Assessment
U.S. Global Change Research Program

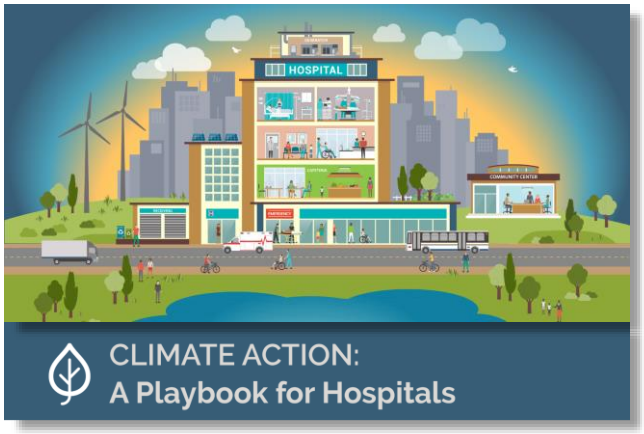
Noharm.org

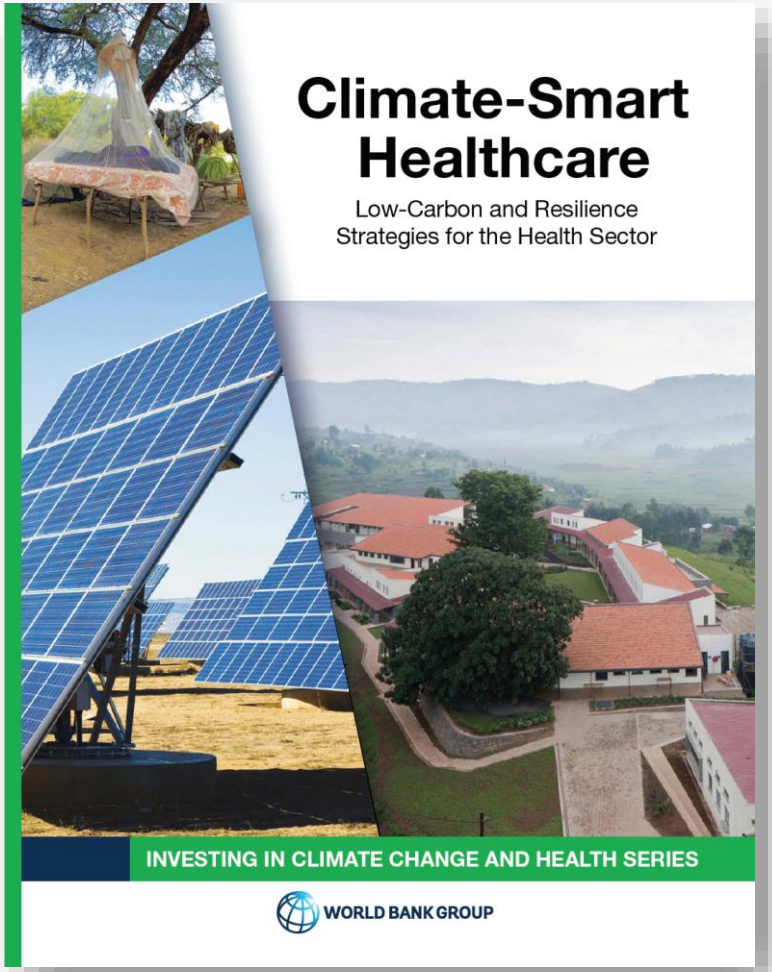
Health Care Without Harm

Leading the global movement for environmentally responsible healthcare

Welcome to Health Care Without Harm! Please join us as we work to transform the health sector worldwide, promoting environmental health and justice.

HEALTH CARE CLIMATE COUNCIL




Climate-Smart Healthcare
Low-Carbon and Resilience Strategies for the Health Sector
INVESTING IN CLIMATE CHANGE AND HEALTH SERIES
WORLD BANK GROUP

PEHSU
Pediatric Environmental Health Specialty Units

LOGGED IN AS: LA266@GEORGETOWN.EDU (LOG OUT)

Member Area limate and health

A network of experts in reproductive and children's environmental health

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ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

PEHSU.net

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY


WA
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TN
NC
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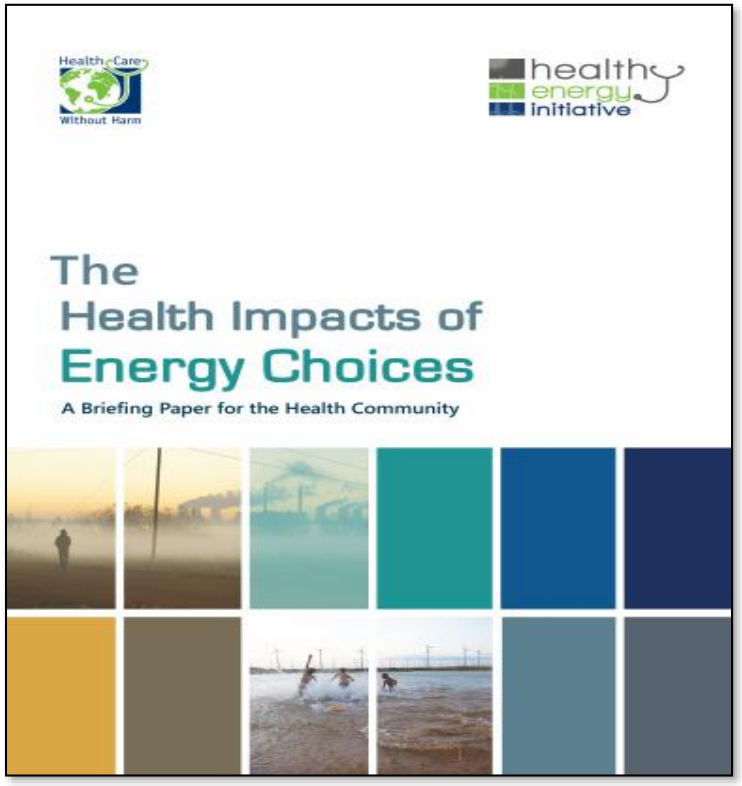
10
...other Region 9 sites
Guam
American Samoa
Trust Territories
Commonwealth of the Northern Mariana Islands
...other Region 2 sites
Puerto Rico
Virgin Islands

Incorporating Health into Energy Policy



Tackling Climate Change Could be the Greatest Global Health Opportunity in the 21st Century - The Lancet 2015

Ultimate Goal: Do No Harm

Thank You!

Laura Anderko PhD RN
la266@georgetown.edu

GEORGETOWN UNIVERSITY

Questions

NATIONAL NURSE-LED CARE CONSORTIUM
a PHMC affiliate

To receive credit…

We will send an email with a link from Clinical Directors Network within 1-2 days after the webinar.

You must complete to receive credit and the certificate will arrive within 1 week of completing the survey.

National Nurse-Led Care Consortium

Last webinar for the Learning Collaborative Series:

Part 4: Exploring Neighborhood Factors that Impact Health

- **Wednesday, December 4, 2019 @ 2:00 pm ET**

NATIONAL NURSE-LED CARE CONSORTIUM
a PHMC affiliate

Thank you!

NNCC Contact Information

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dmankikar@phmc.org

Kevin Leacock, Public Health Project Coordinator
kleacock@phmc.org

Starting Now:
Office Hours with Dr. Laura Anderko