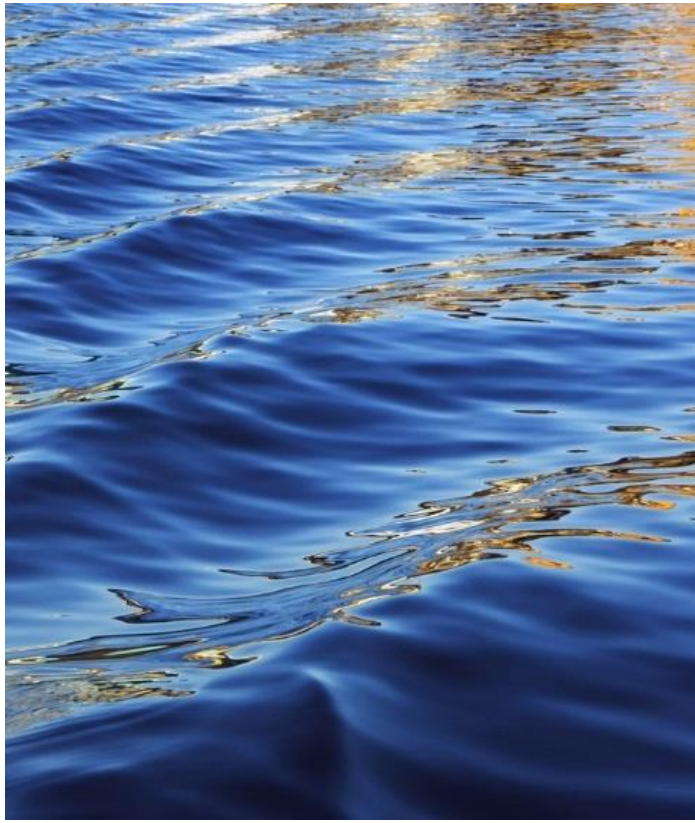
Climate Change and Health 101

Tribal Climate and Health Adaptation Webinar #2



Trainers

Dr. Shasta Gaughen

Pala Band of Mission Indians

Angie Hacker

Prosper Sustainably

Guest Speaker

Vanesscia Cresci

CA Tribal Epidemiology Center

Since Last Webinar

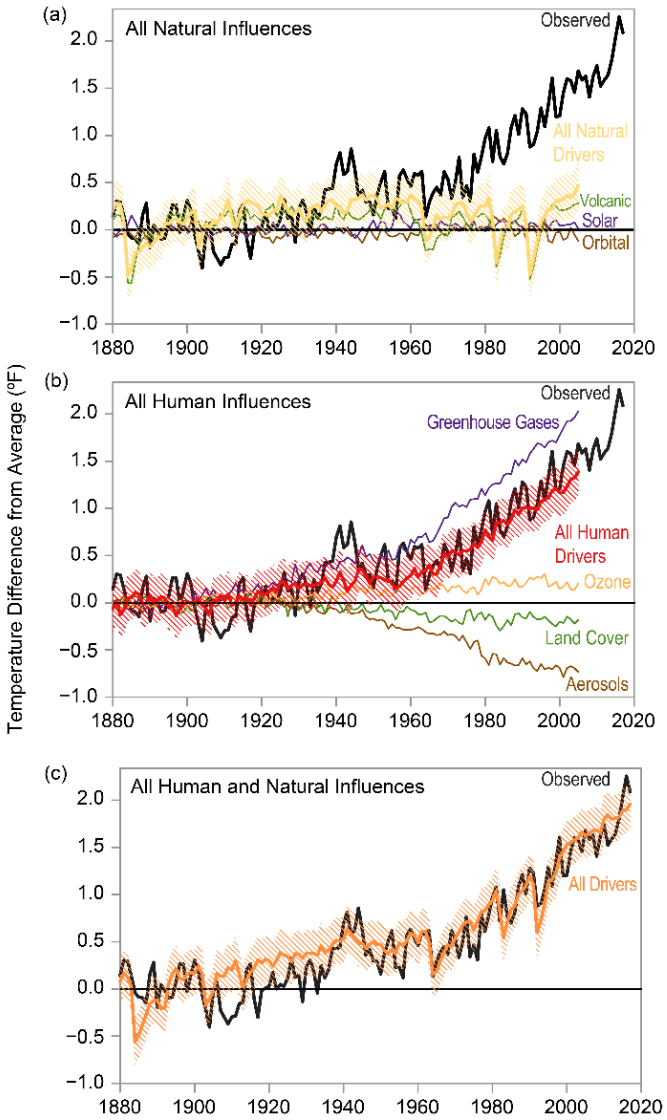
Assessment

Google Groups

- Accept invitation
- Junk box?
- Blocked by organization?
- Set up gmail address tied to work email

Suggested Reading

- [Fourth National Climate Assessment, Chapter 2: Our Changing Climate]



Chat Discussion:

What did you read about that surprised you?

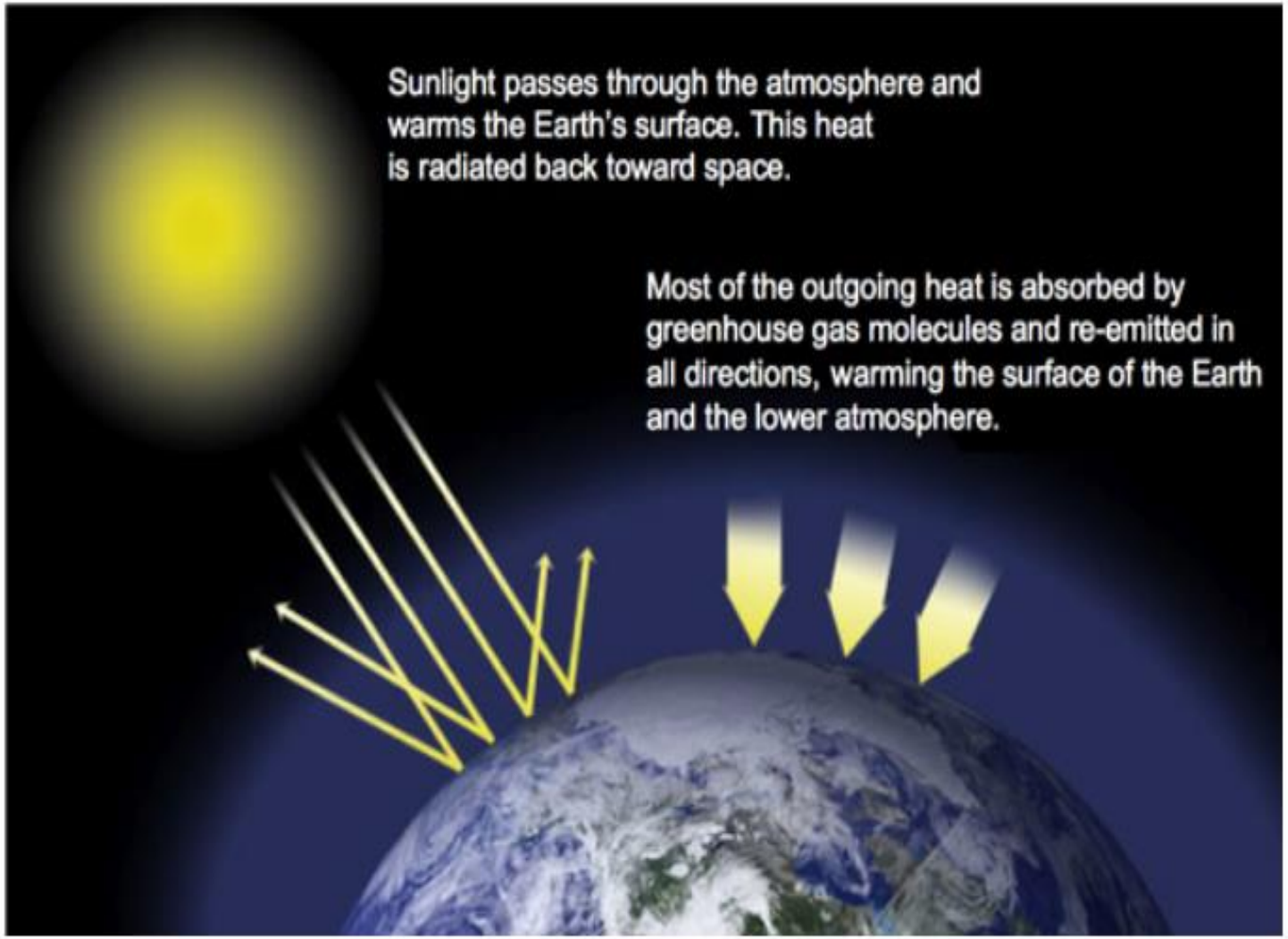
What is Climate Change?

Climate change refers to long -term changes in usual or expected weather patterns driven by elevated greenhouse gases

- Life on Earth depends on, is shaped by, and affects climate
- Earth's atmosphere is extremely thin
  - Only 60 miles thick (Earth's diameter is 8,000 miles), most within 10 miles of surface
- It is composed primarily of nitrogen and oxygen.
  - Only .04% is CO_2 and far less is methane and other GHGs.

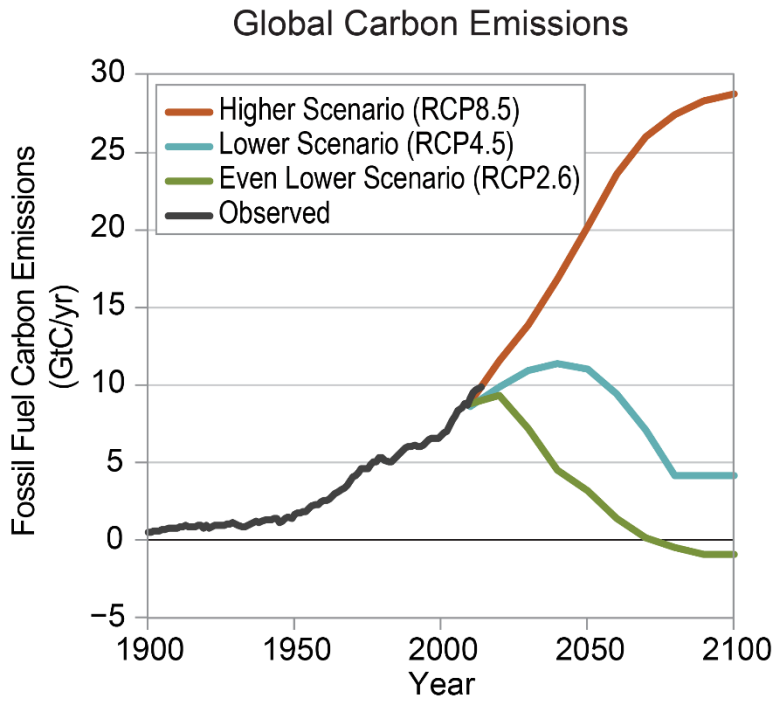
What is Climate Change?

In the right balance, these important greenhouse gases naturally trap heat (like a blanket) at a level that sustains life on Earth (**Greenhouse Effect**).



What is Climate Change?

- In the 10,000 years before the industrial Revolution in 1751, carbon dioxide levels in the air rose by less than 10 percent.
- Atmospheric CO2 concentrations have increased more than 40% since pre-industrial times from 280 ppm to over 400pm, higher than it has been in 800,000 years.
- There are natural causes for some climate fluctuations (e.g. solar radiation, volcanic activity), but none explain the rapid changes we are experiencing
- Human activities release 30 billion tons of CO2 into the atmosphere every year (e.g. fossil fuel combustion), which accumulates, especially as we continue to deforest



"Treat the earth well: it was not given to you by your parents, it was loaned to you by your children. We do not inherit the Earth from our Ancestors, we borrow it from our Children."

– Native American Proverb

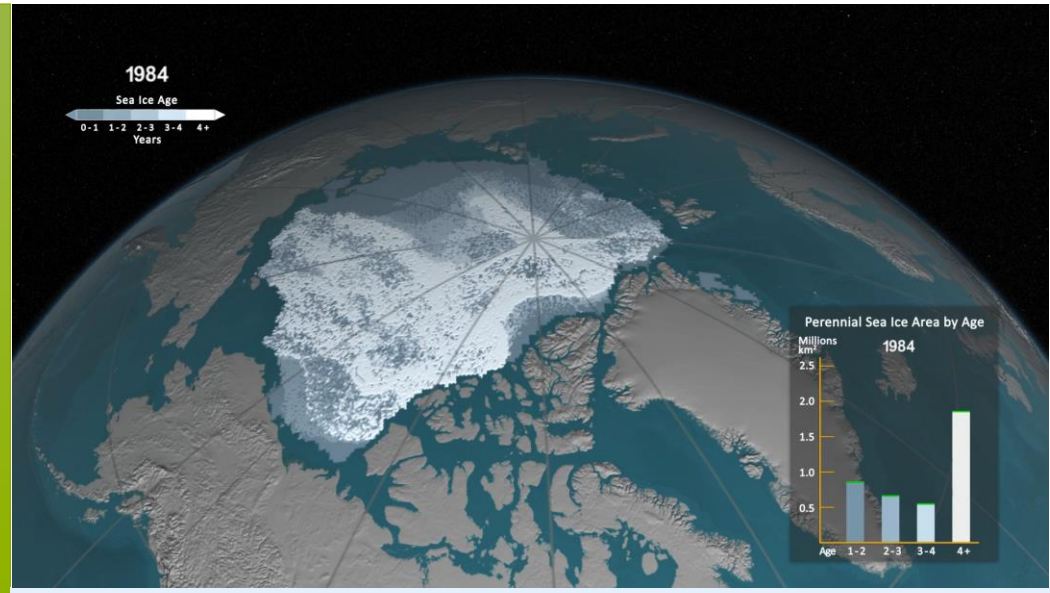
What is Climate Change?

Evidence found in traditional knowledges, indigenous science and western climate science

NASA: evidence of a changing climate includes

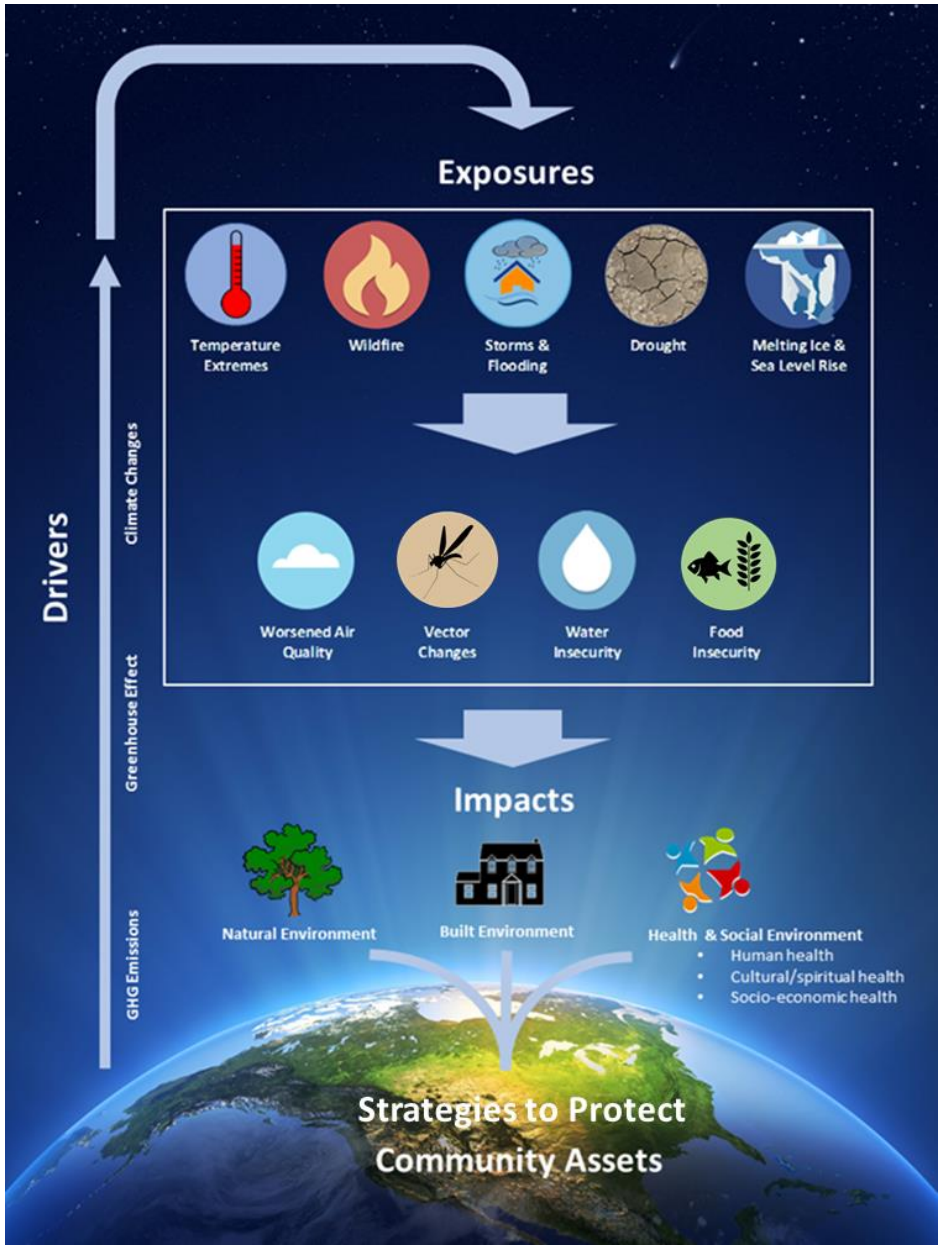
- global average temperature rise (July was historical record)
- 1 degree (C) since pre-industrial times, 2-3 higher in the Arctic
- warming oceans
- rising sea levels
- shrinking ice sheet
- declining arctic sea ice
- glacial retreat
- extreme events
- ocean acidification
- decreased snow cover

See
USGCRP Indicators Catalogue



"Global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016). This period is now the warmest in the history of modern civilization. The last few years have also seen record-breaking, climate-related weather extremes, and the last three years have been the warmest years on record for the globe. These trends are expected to continue over climate timescales."

- *Climate Science Special Report (CSSR) - Volume 1 of the Fourth National Climate Assessment*



Cascading Effects of Climate Change

Framework guides this training

What Climate Change Means for Tribes & Indigenous Peoples

Tribes are both uniquely and disproportionately vulnerable and uniquely resilient

"Climate change threatens Indigenous peoples' livelihoods and economies, including agriculture, hunting and gathering, fishing, forestry, energy, recreation, and tourism enterprises. Indigenous peoples' economies rely on, but face institutional barriers to, their self-determined management of water, land, other natural resources, and infrastructure that will be impacted increasingly by changes in climate."

Key Finding, Fourth National Climate Assessment

"In our every deliberation, we must consider the impact of our decisions on the next seven generations."

Iroquois Maxim (1700-1800)

What Climate Change Means for Tribes & Indigenous Peoples

Federal laws, treaty rights, sovereignty and self-determination

- Displacement, relocation, resettlement
- Institutional barriers to adaptation
- Engagement, consultation, and consent

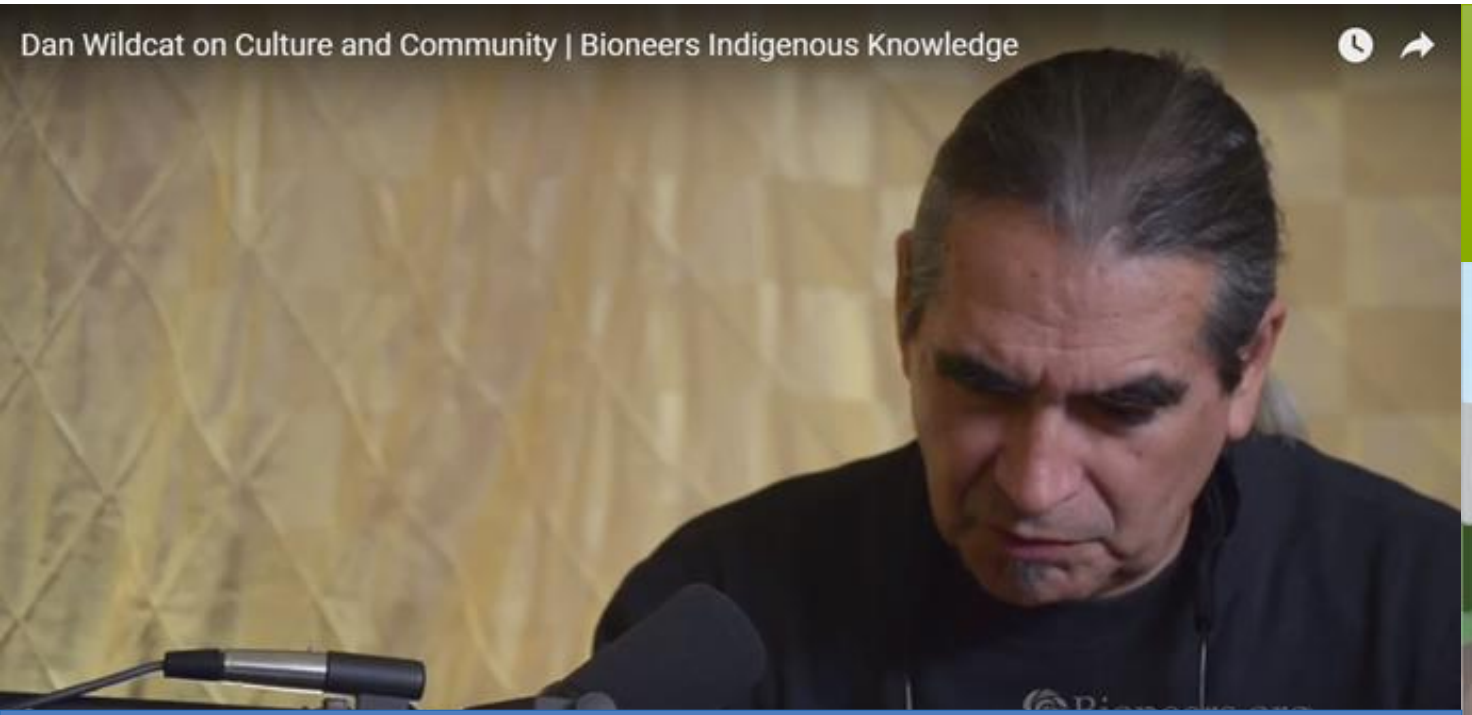
What Climate Change Means for Tribes & Indigenous Peoples

Unique climate-driven health challenges

- Each tribal community is unique
- Climate change exacerbates disproportionate health outcomes
- Water and food insecurity
- Loss of ecological health can mean loss of livelihoods
- Relocating may mean loss of culture, community, and rights
- Arctic warming
- Underfunded public health services

What is Health and Wellbeing?

Western and tribal communities often define health differently

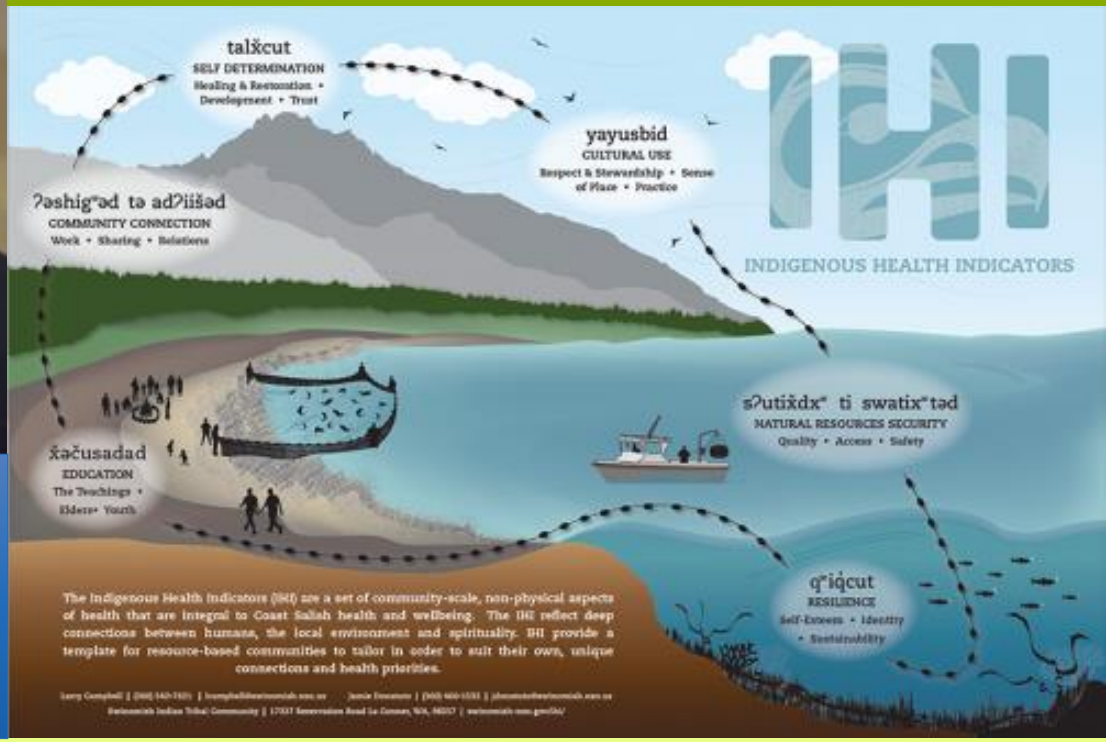


"Mission: By providing whole-person health services in medical care, preventative wellness programs, rural community infrastructure development and statewide solutions, we are able to protect and perpetuate our Alaska Native culture and traditions"

Alaska Native Tribal Health Consortium

"Nobody can be in good health if he does not have all the time fresh air, sunshine and good water."

Flying Hawk (Chief) 1854 – 1931, Oglala Lakota



What is Health?

Tribal Climate Health Project defines health more broadly than the absence of medical disease:

- Human health: physical and psychological
- Spiritual and cultural health
- Socio-economic health

Health is dependent upon elements of the natural and built environment

"Indigenous health is based on **interconnected** social and ecological systems that are being disrupted by a changing climate. As these changes continue, the health of individuals and communities will be uniquely challenged by climate impacts to lands, waters, foods, and other plant and animal species. These impacts threaten sites, practices, and relationships with cultural, spiritual, or ceremonial importance that are foundational to Indigenous peoples' cultural heritages, identities, and physical and mental health."

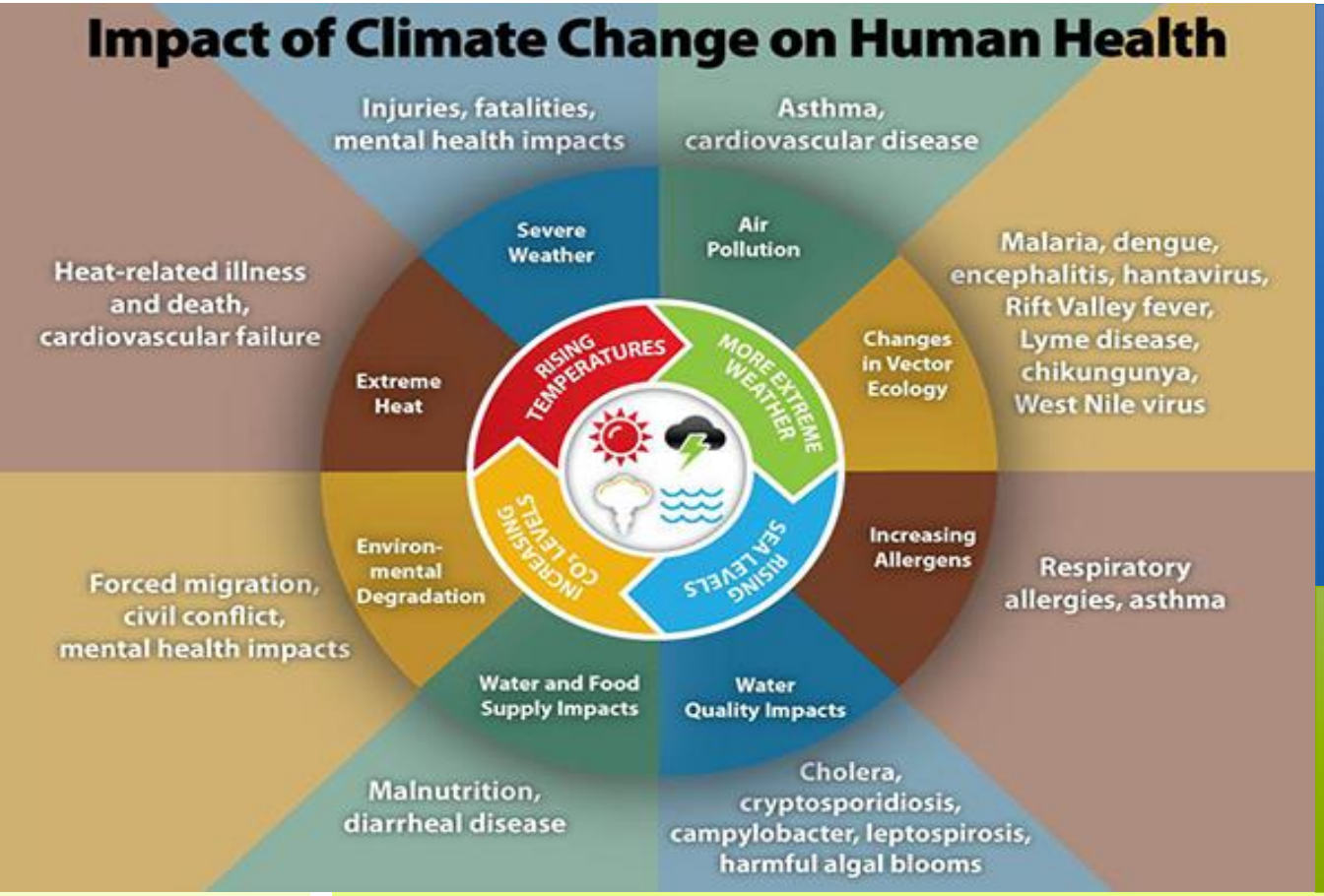
Key Finding, Fourth National Climate Assessment

Group Discussion:

Please share stories, observations and examples about climate related health impacts for your tribe

Climate Change and Human Health

Climate change is increasing the number of people at greater risk of human health threats such as **illness, injury, death, trauma and other mental and psychosocial consequences**

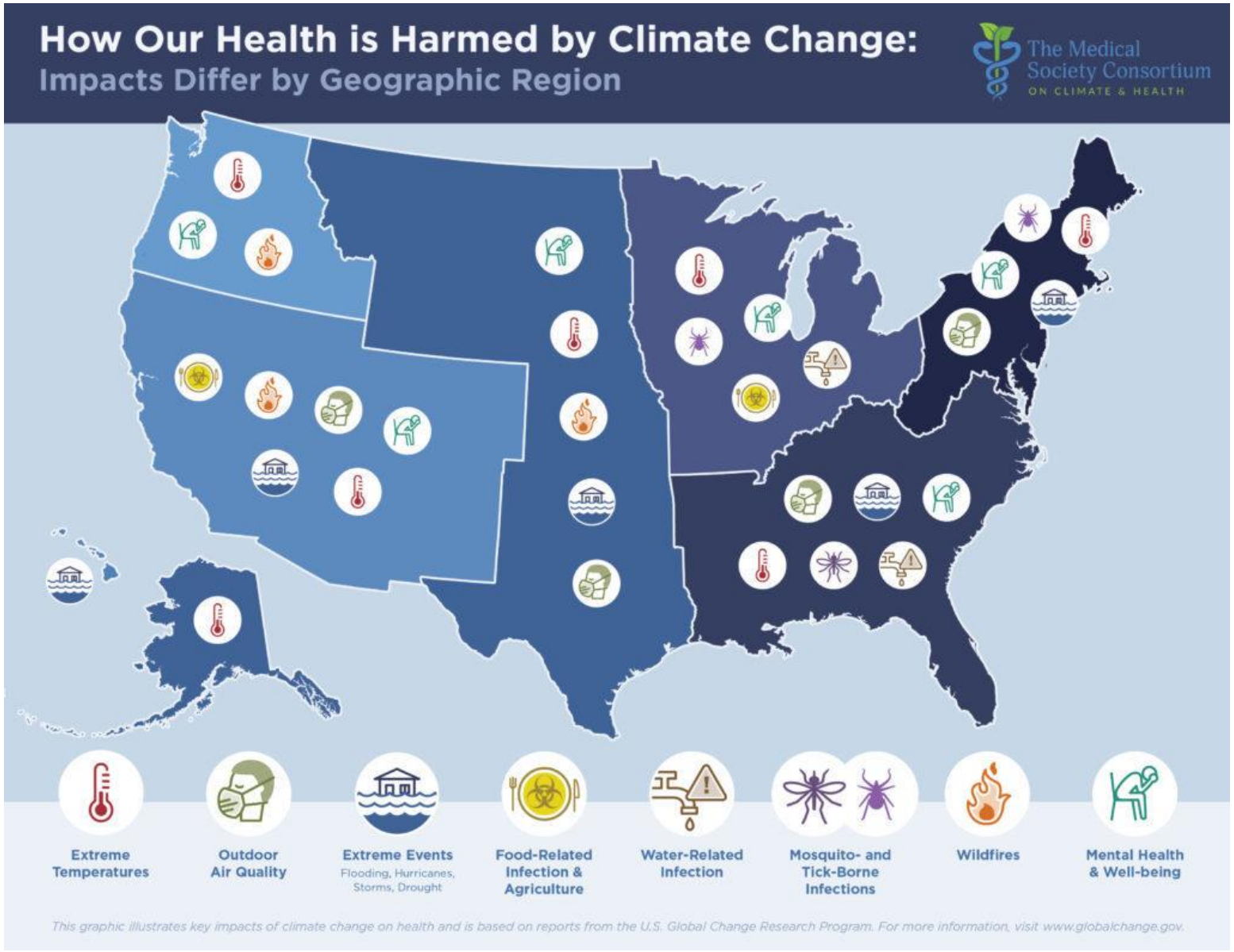


USGCRP Climate and Health Assessment Key Findings

- Increased exposure to extreme events and coastal flooding will effect health
- Disruptions to essential infrastructure can limit access to healthcare and emergency response services

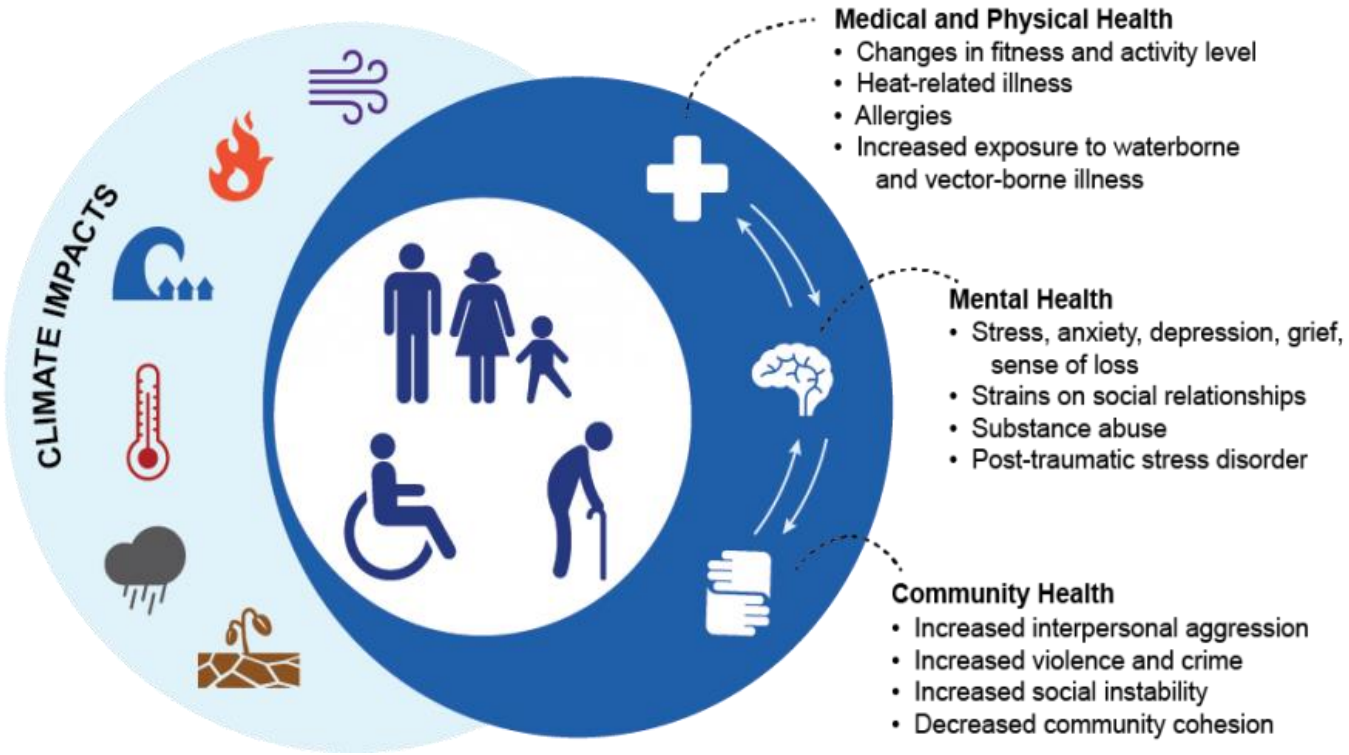
"Our environment was rich in the wealth of natural resources, providing all our needs, allowing us to live healthy happy lives!"

Puyallup Tribe



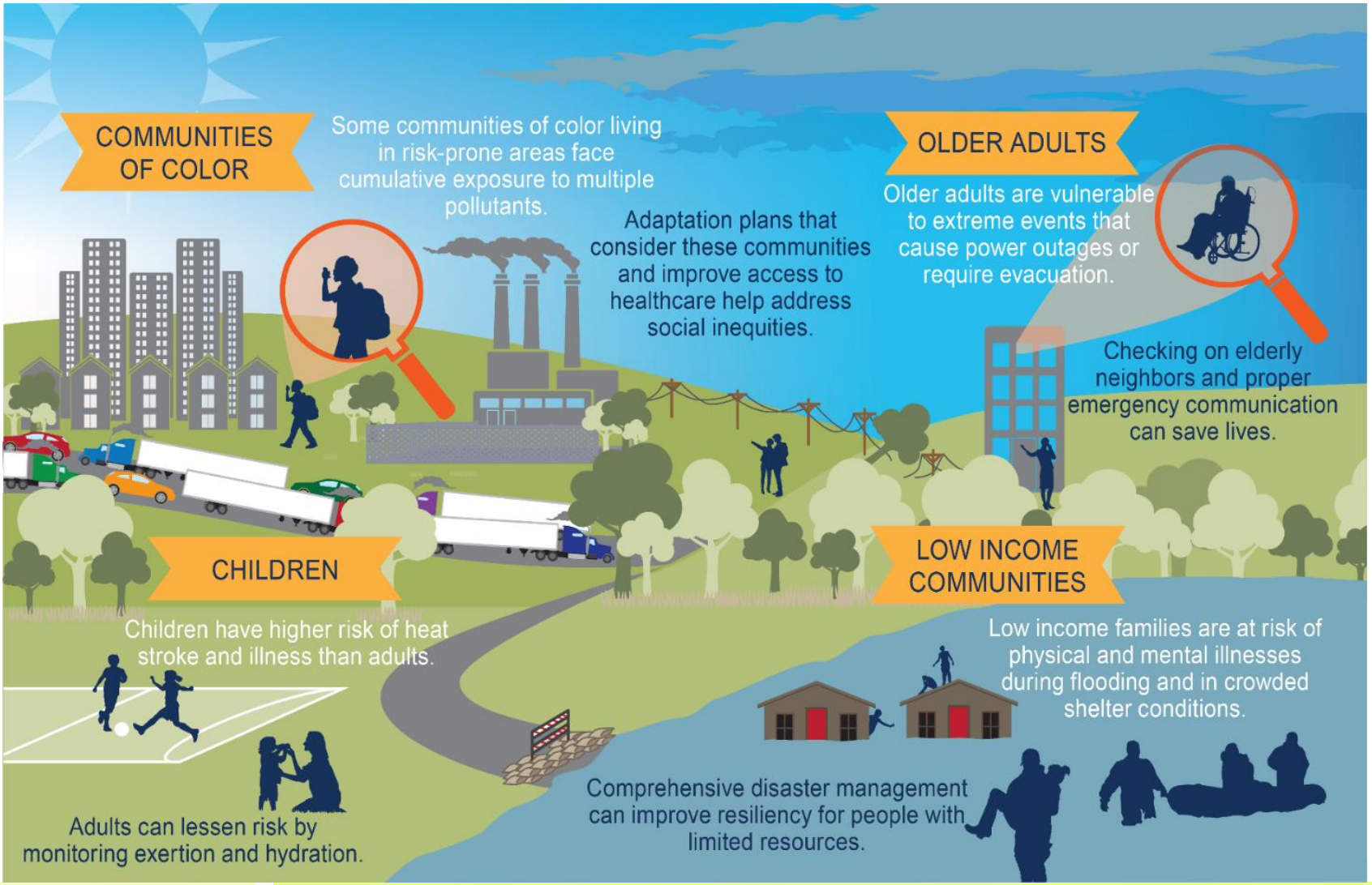
Climate Change and Human Health

Climate Change and Human Health



	Climate Driver	Exposure	Health Outcome	Impact
Extreme Heat	More frequent, severe, prolonged heat events	Elevated temperatures	Heat-related death and illness	Rising temperatures will lead to an increase in heat-related deaths and illnesses.
Outdoor Air Quality	Increasing temperatures and changing precipitation patterns	Worsened air quality (ozone, particulate matter, and higher pollen counts)	Premature death, acute and chronic cardiovascular and respiratory illnesses	Rising temperatures and wildfires and decreasing precipitation will lead to increases in ozone and particulate matter, elevating the risks of cardiovascular and respiratory illnesses and death.
Flooding	Rising sea level and more frequent or intense extreme precipitation, hurricanes, and storm surge events	Contaminated water, debris, and disruptions to essential infrastructure	Drowning, injuries, mental health consequences, gastrointestinal and other illness	Increased coastal and inland flooding exposes populations to a range of negative health impacts before, during, and after events.
Vector-Borne Infection (Lyme Disease)	Changes in temperature extremes and seasonal weather patterns	Earlier and geographically expanded tick activity	Lyme disease	Ticks will show earlier seasonal activity and a generally northward range expansion, increasing risk of human exposure to Lyme disease-causing bacteria.
Water-Related Infection (*Vibrio vulnificus*)	Rising sea surface temperature, changes in precipitation and runoff affecting coastal salinity	Recreational water or shellfish contaminated with *Vibrio vulnificus*	*Vibrio vulnificus* induced diarrhea & intestinal illness, wound and bloodstream infections, death	Increases in water temperatures will alter timing and location of *Vibrio vulnificus* growth, increasing exposure and risk of waterborne illness.
Food-Related Infection (*Salmonella*)	Increases in temperature, humidity, and season length	Increased growth of pathogens, seasonal shifts in incidence of *Salmonella* exposure	*Salmonella* infection, gastrointestinal outbreaks	Rising temperatures increase *Salmonella* prevalence in food; longer seasons and warming winters increase risk of exposure and infection.
Mental Health and Well-Being	Climate change impacts, especially extreme weather	Level of exposure to traumatic events, like disasters	Distress, grief, behavioral health disorders, social impacts, resilience	Changes in exposure to climate- or weather-related disasters cause or exacerbate stress and mental health consequences, with greater risk for certain populations.

Vulnerable Populations



The Good News

Adaptation is the process of taking actions to reduce or manage risks associated with climate change.

TRIBAL CLIMATE HEALTH PROJECT

Chat Discussion:

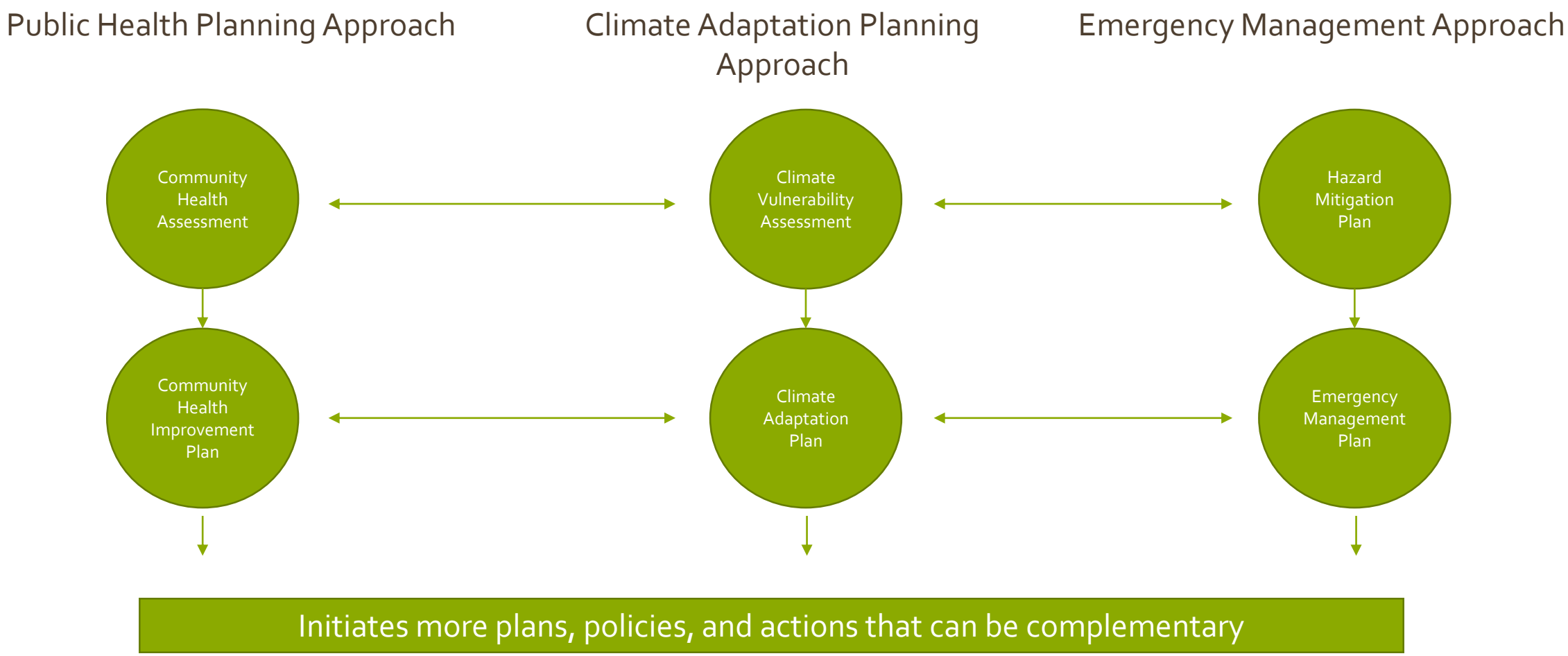
What has kept your tribe from acting on climate and health threats?

Your Role in Climate Change & Health Adaptation

Trainee Spotlight:

1. What kind of professional are you?
2. What is your role in addressing the climate change?
3. How prepared are you to assess environmental and health information to aid in adaptation decision-making?
4. How does your profession make community planning decisions?

Many Types of Professionals Can Be Involved



Initiates more plans, policies, and actions that can be complementary

Role of Health Professionals in Climate Adaptation

A key partner in community climate action

SIX CORE FUNCTIONS AND 15 KEY STRATEGIES FOR PUBLIC HEALTH TO ADDRESS CLIMATE CHANGE AND HEALTH

1 Leadership and Organizational Capacity

1.1 Build climate and health literacy among Public Health and other King County agency leaders and employees

1.2 Build capacity to integrate climate change into Public Health and King County programs and align with equity and social justice principles

1.3 Develop Public Health leadership at the local, regional and national levels

2 Assessment, Surveillance and Research

2.1 Identify, evaluate, and prioritize key climate and health indicators and data

2.2 Develop and expand surveillance systems to monitor for and use data on climate-related health effects to provide timely information for Public Health action

2.3 Encourage and participate in practical and applicable research related to climate and health

3 Listen and Educate

3.1 Collaborate with partners through ongoing opportunities for information sharing that guides climate and health message development

3.2 Collaborate with partners to develop key messaging that addresses identified gaps in climate and health knowledge

3.3 Disseminate and exchange climate and health information with communities

4 Community Partnership Development and Capacity Building

4.1 Engage in climate and health planning that maximizes community ownership and promotes problem solving and collective action

4.2 Emphasize community resilience in Public Health partnerships that integrates climate change adaptation and mitigation and all-hazards preparedness

5 Preparedness and Response

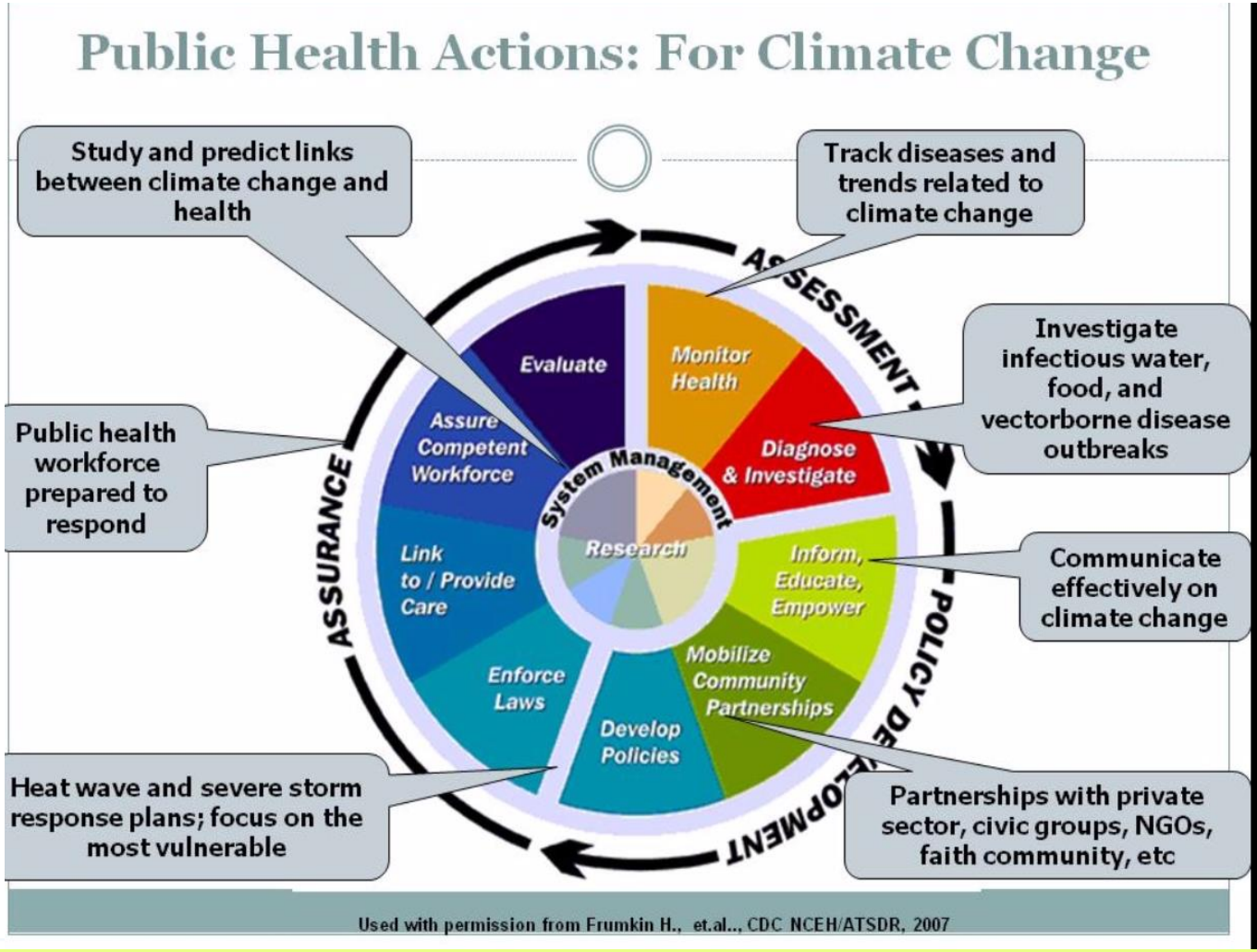
5.1 Build capacity to effectively prepare for and respond to climate-related health emergencies

5.2 Incorporate climate projections into hazard mitigation and public health preparedness planning

6 Policy and Planning

6.1 Include climate and health considerations in policies and plans at the local, regional and national level

6.2 Promote climate-related policies and planning that promote equity and improve health



Tribal Health Systems and Professionals

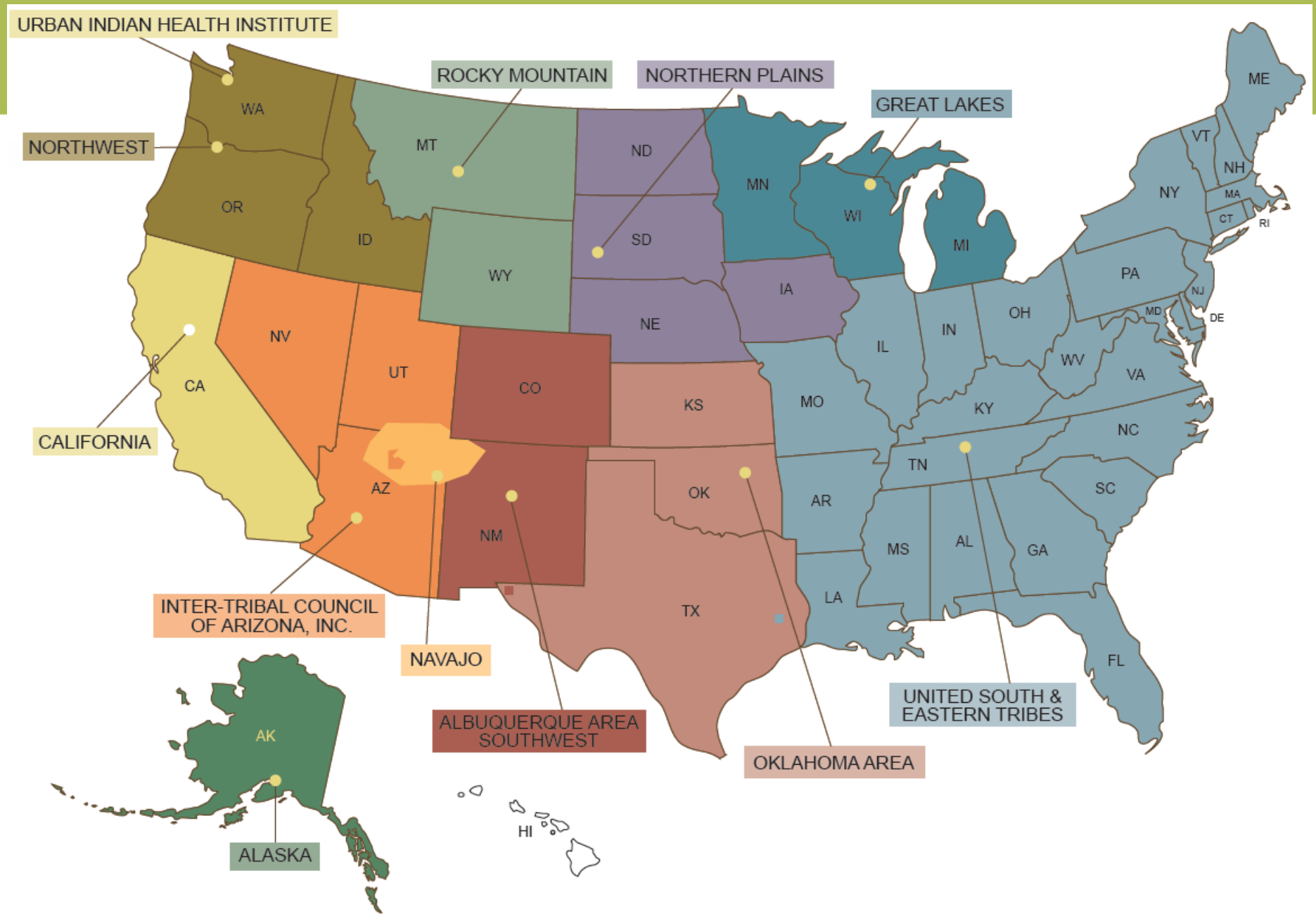
Federal gov has a legal role as "guardian" to provide federally funded health care via Indian Health Service

California Tribal Epidemiology Center Overview

Vanesscia Cresci, MSW, MPA
Acting Epidemiology Manager, California Tribal Epidemiology Center
Director, Research & Public Health Department
California Rural Indian Health Board, Inc.

Tribal Epidemiology Centers (TEC)

- Established via Indian Health Care improvement Act (IHCIA)
- Four TECs were started in 1996, now 12 TECs
- TECs function independently, but also as part of a national group


URBAN INDIAN HEALTH INSTITUTE
ROCKY MOUNTAIN
NORTHERN PLAINS
GREAT LAKES
NORTHWEST
CALIFORNIA
INTER-TRIBAL COUNCIL OF ARIZONA, INC.
NAVAJO
ALBUQUERQUE AREA SOUTHWEST
OKLAHOMA AREA
UNITED SOUTH & EASTERN TRIBES
ALASKA
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TECs as Public Health Authorities

- Established through permanent reauthorization of the Indian Health Care Improvement Act (IHCIA) as part of the Patient Protection and Affordable Care Act (2010)

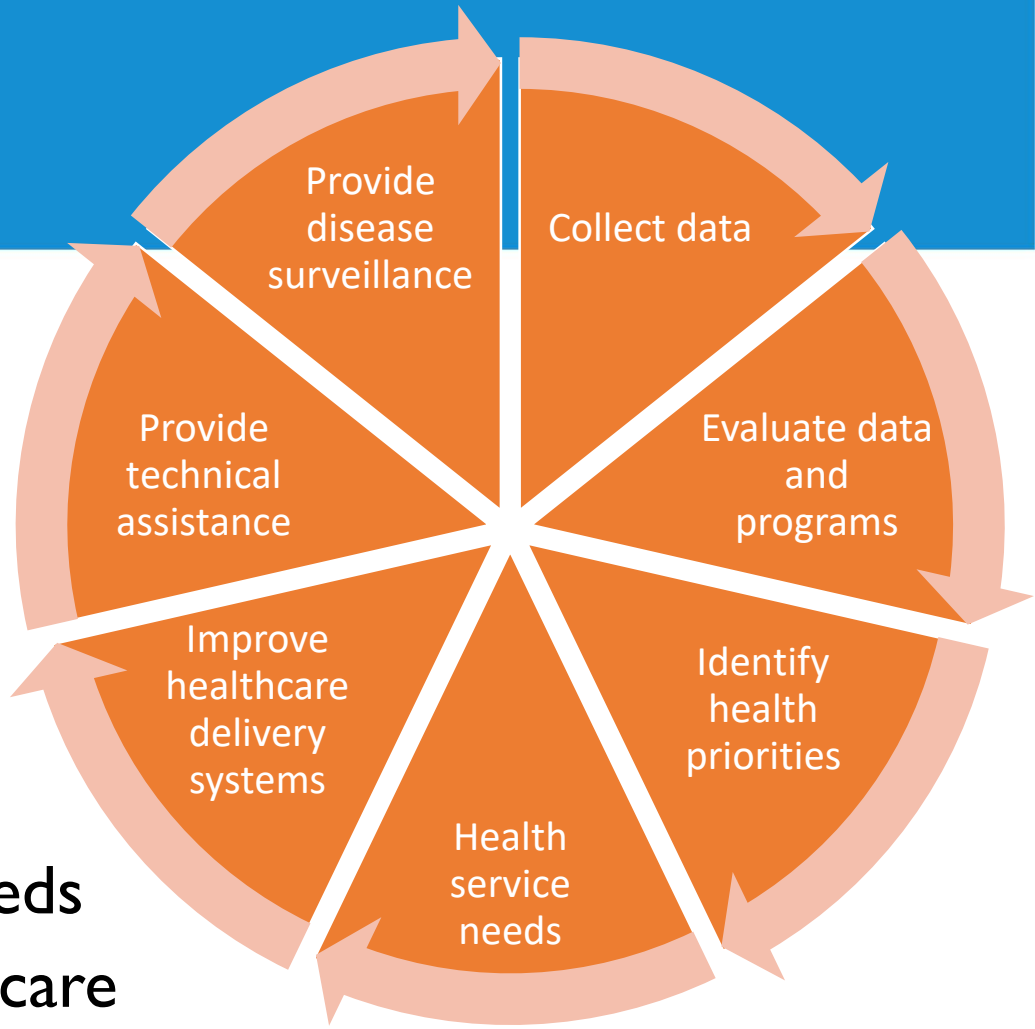
  The Secretary "shall grant to each epidemiology center… access to use of the data, data sets, monitoring systems, delivery systems, and other protected health information in the possession of the Secretary."

  25 U.S.C.A. § 1621m(c)

- Health and Human Services (HHS) directive gives TECs access to HHS data systems and protected health information
- Centers for Disease Control and Prevention must provide TECs technical assistance
- Each Indian Health Service (IHS) Area must have TEC access

7 Core Functions

- Collect data
- Evaluate data and programs
- Identify health priorities with Tribes
- Make recommendations for health service needs
- Make recommendations for improving health care delivery systems
- Provide epidemiologic technical assistance to Tribes and Tribal organizations
- Provide disease surveillance to Tribes



What does climate change look like?

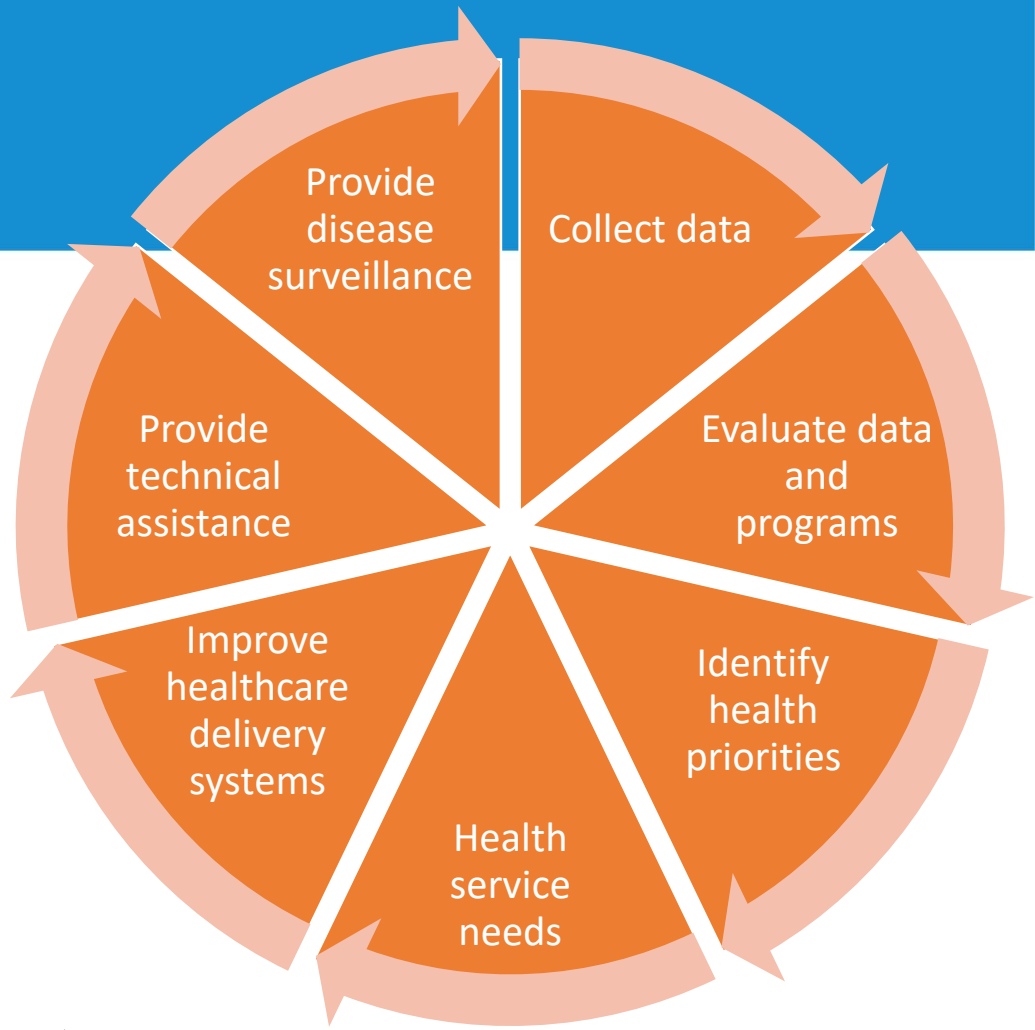
- Droughts are longer and more extreme
- Warmer ocean water is causing more severe tropical storms
- Sea levels are rising
- Wildfires are more frequent
- More vector-borne diseases
- Increase in floods
- These all affect salmon population, acorn production, invasive species in trees and plants used for basketmaking

"Fire affects the plants, which affect the water, which affects the fish, which affect terrestrial plants and animals, all of which the Karuk rely on for cultural perpetuity."

- Karuk Tribe Climate Change project website

How can CTEC help?

- Collect data
  - Surveillance
- Evaluate data and programs
- Identify health priorities with Tribes
  - Vulnerability assessments
- Make recommendations for health service needs
  - Based on vulnerability assessments
- Make recommendations for improving health care delivery systems
- Provide epidemiologic technical assistance to Tribes and Tribal organizations
- Provide disease surveillance to Tribes
  - Vector-borne/zoonotic diseases



Potential Environmental Health Data Sources

- Provide health indicators associated with climate change (national, state, county levels)
- Vector-borne/zoonotic diseases
  - Mosquito surveillance (West Nile Virus (WNV)/Zika
  - Hanta Virus
  - Tick surveillance (Lyme disease, Rocky Mountain spotted fever, tularemia)
- Asthma rates
  - ED visits/hospitalizations
  - Related deaths
- Heat Related Illnesses
  - Heat stress hospitalizations
  - ED visits
  - Heat exhaustion
  - Heat stroke

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

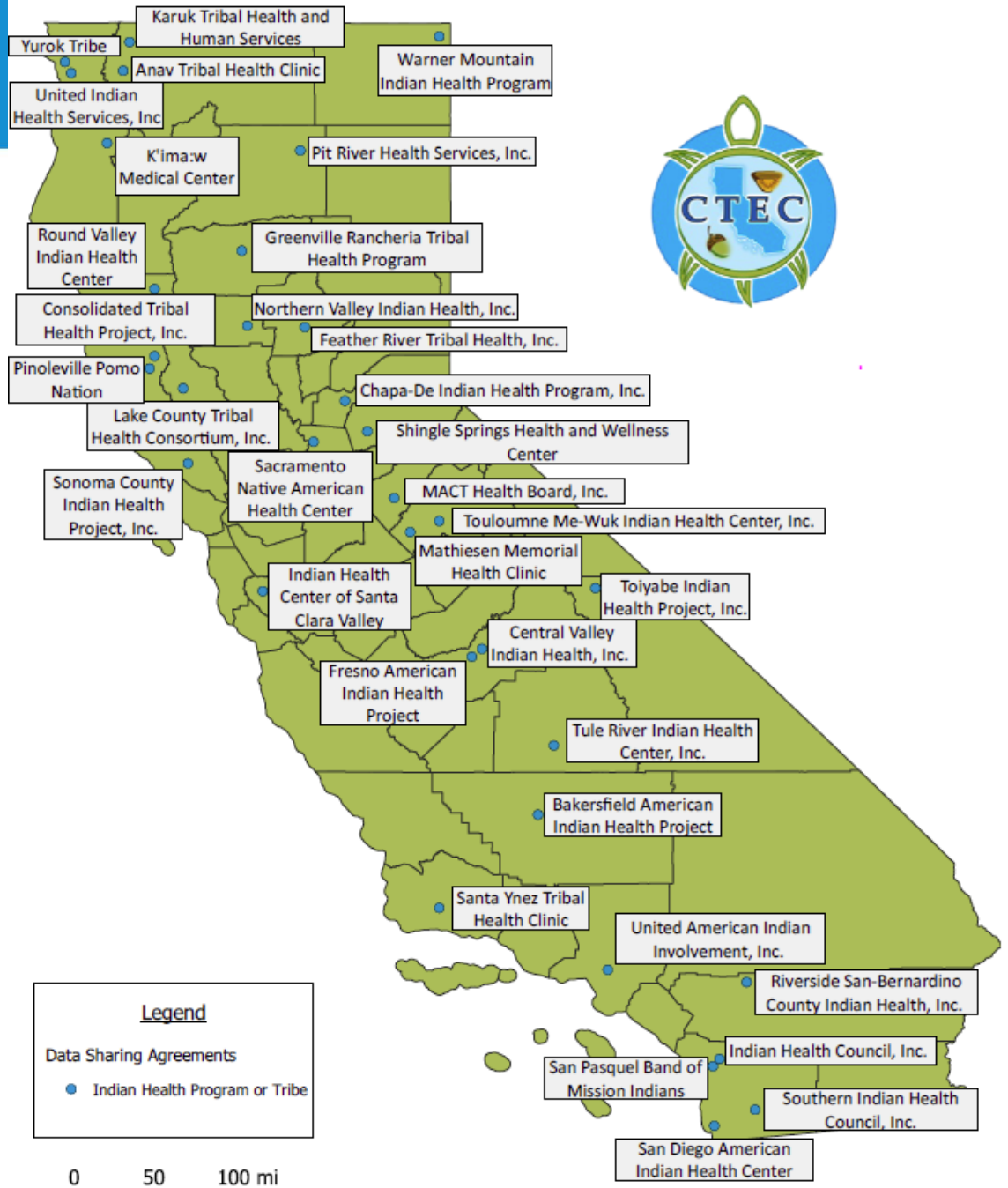
ENVIRONMENTAL PUBLIC HEALTH TRACKING

WONDER

How To Request Technical Assistance

- https://crihb.org/technical-assistance-request-form/
- Have a Data Sharing Agreement in place with CRIHB

California Tribal Epidemiology Center



Questions?

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Wrapping Up

Thank you for being part of our training community!

Suggested reading (complete before next webinar)

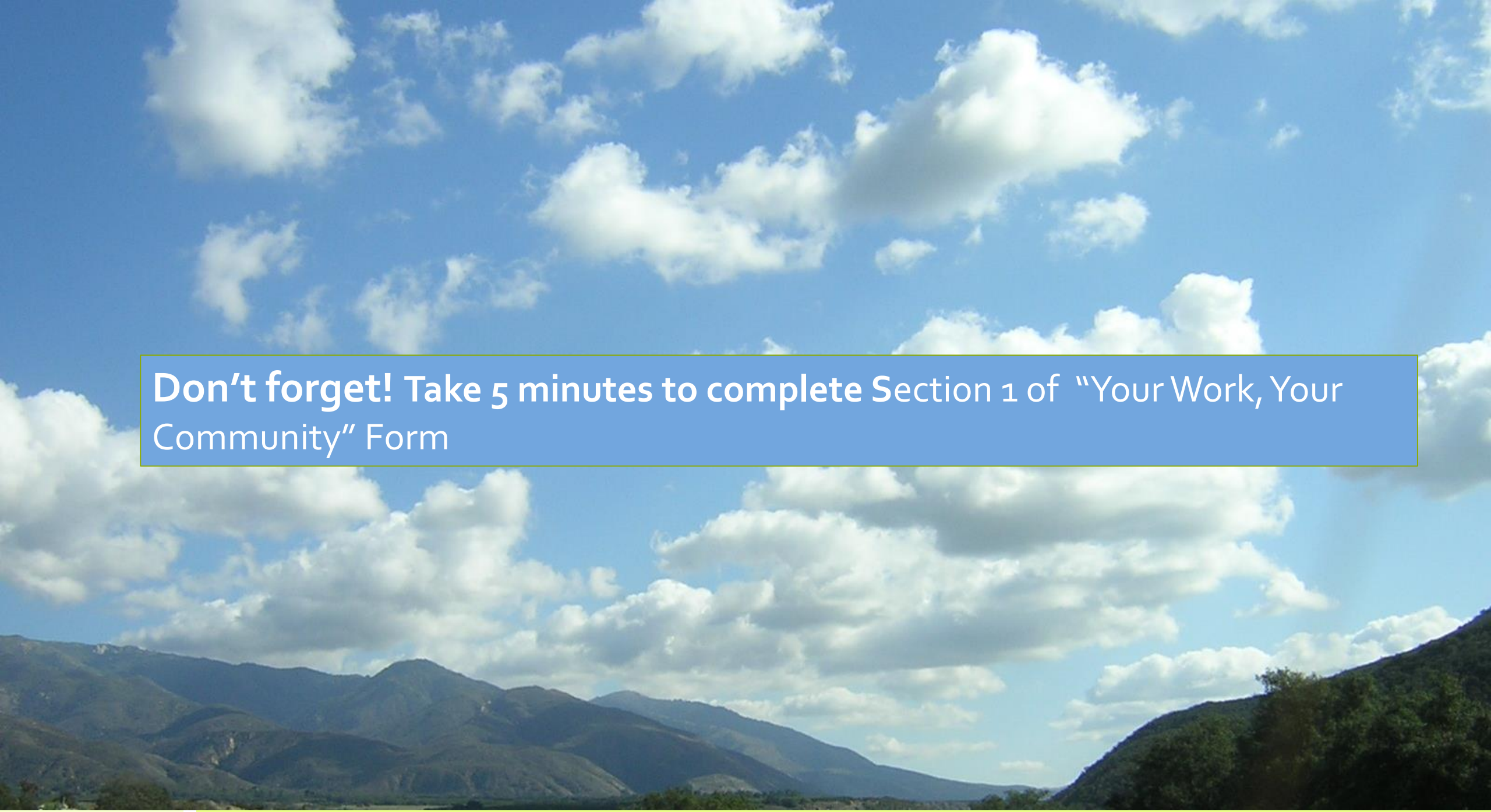
- Pick one chapter (2-8) of Impacts of Climate Change on Human Health in the United States

Next webinar:

September 3, 2019 (9AM PST / Noon EST)

Intro to Changing Exposures and Impacts, Temperature Extremes (Module 2)

Questions?



Don't forget! Take 5 minutes to complete Section 1 of "Your Work, Your Community" Form

Climate Change and Health 101 – Key Resources

Guidance

- USGCRP – Impacts of Climate Change on Human Health in the United States
- USGCRP - Fourth National Climate Assessment
  - Climate Science Special Report
  - Human Health Chapter
  - Tribes And Indigenous Peoples Chapter
- USGCRP - Third National Climate Assessment
  - Indigenous Peoples, Lands, and Resources
  - Human Health
- USDA - Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences
- NASA – Global Climate Change
- NOAA – NCA Teaching Resources: Regional Support pages
- EPA – Climate Change Impacts by Region
- CDC – Climate and Health Effects
- IPCC – Fifth Assessment - Chapter 11: Human Health: Impacts, Adaptation, and Co-benefits
- CDC - Assessing Health Vulnerability to Climate Change A Guide for Health Departments
- Indian Health Service – Environmental Health
- Rising Voices – Considering Traditional Knowledge In Climate Change Initiatives
- FEMA: Tribal Mitigation Planning Guide
- TCHP: Tribal Climate Health Project

Tools and Templates

- TCHP – Resources Clearinghouse
- Tribal Community Health Assessment for Public Health Accreditation – A Practical Guide and Toolkit (Arizona)

Examples

Health-led Assessments

- San Diego: 2016 Community Heath Assessment
- King County Public Health Department: Blueprint for Addressing Climate Change and Health Reports
- California Department of Public Health: Climate Change and Health Reports
- Oregon Health Authority: Climate and Health Resilience Plan
- ANTHC - Climate Change in Kiana, Alaska: Strategies for Community Health
- Michigan Dept. of Health and Human Services: Michigan Climate and Health Adaptation Program: Strategic Plan Update: 2016 - 2021