

# A Critical Moment in History

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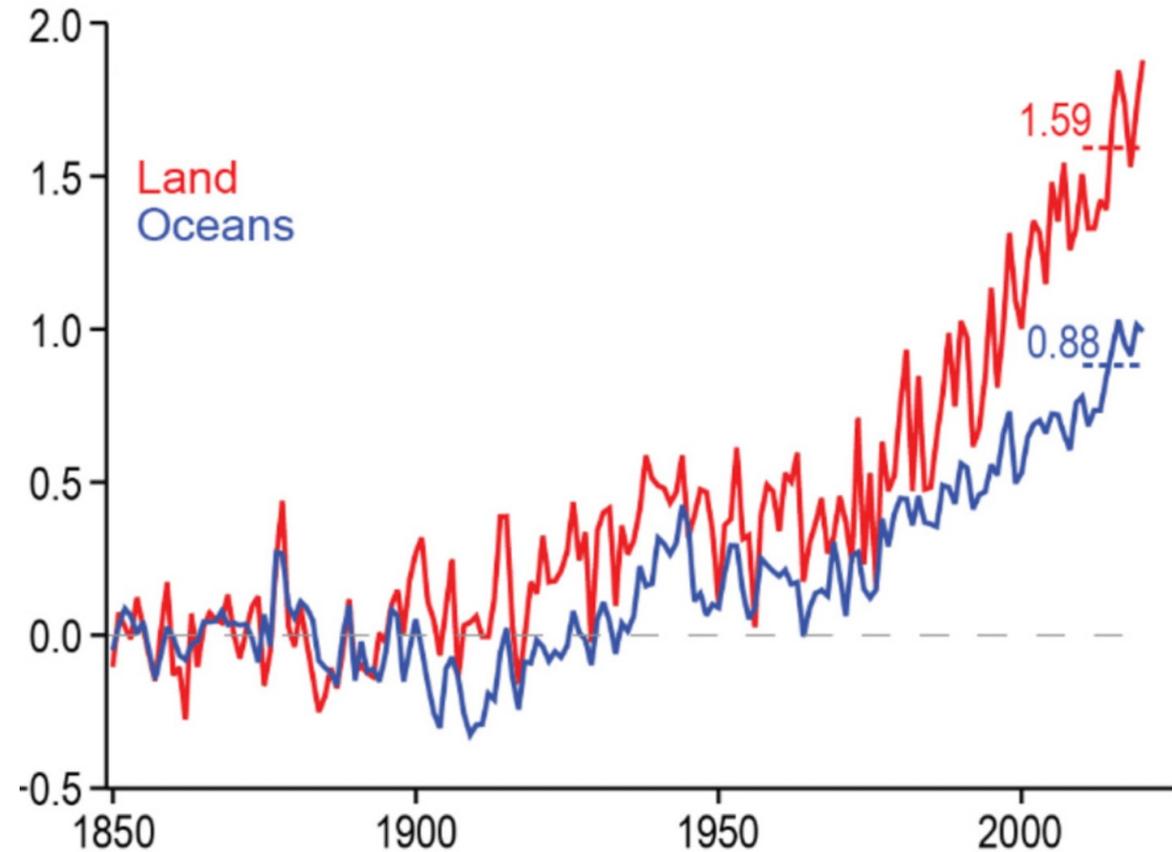
*The urgent need for climate and health adaptation in New Mexico*

“Anything else you’re interested in is not going to happen if you can’t breathe the air and drink the water. Don’t sit this one out. Do something. You are by accident of fate alive at an absolute critical moment in the history of our planet.”

- Carl Sagan, 1994

# The world is warming

- Emissions have raised global temperatures  $\sim 1.2$  degrees. We are on course to reach 1.5 degrees, a critical threshold within a decade.<sup>1</sup>
- The rapid rate of change is stressing and collapsing many of the vital natural systems we rely on.
- Like COVID, risks from climate change are not shared equally.



# Already in New Mexico:

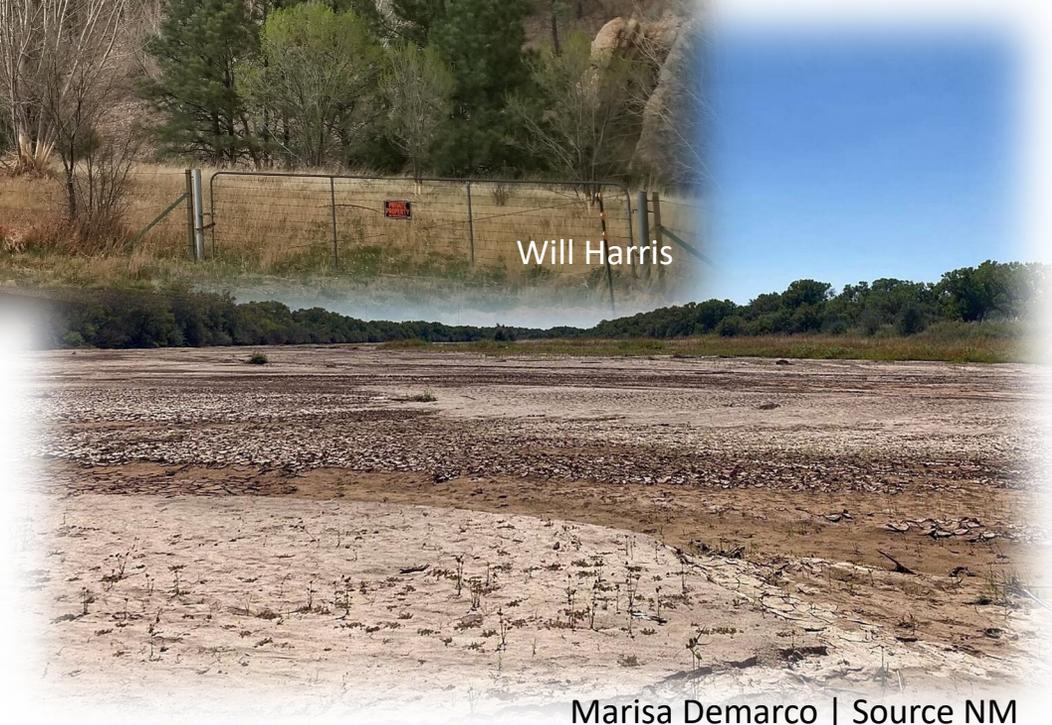
*Historic drought*

*Historic wildfires*

*Historic temperatures*

*Historic storms*

*Historic vegetation loss*



# **MOST VULNERABLE**

**[w/ percentage of NM population]:**

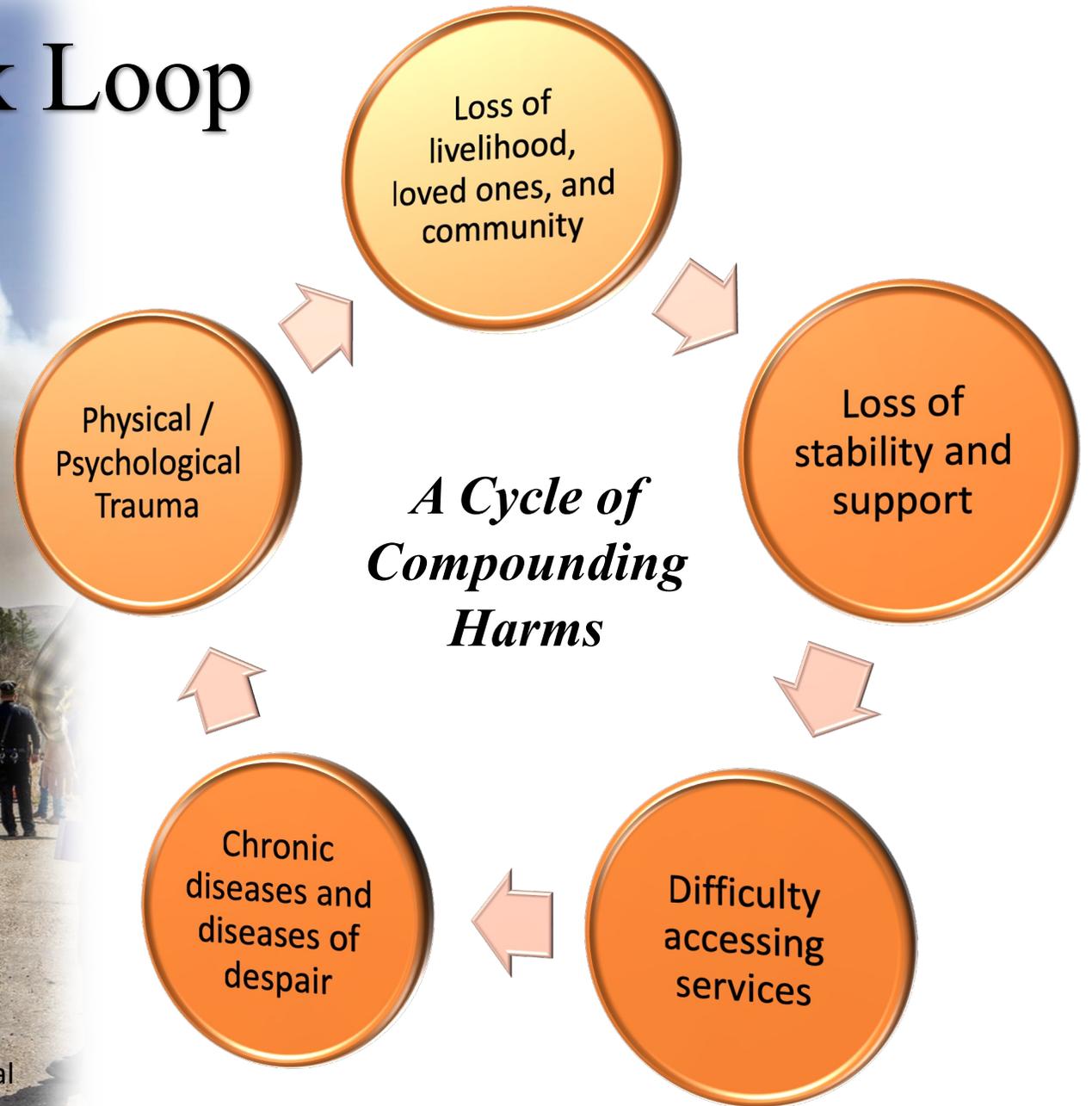
- Elderly – 18.5%<sup>1</sup>
- Children – 22.4% (5.4% under 5yo)<sup>2</sup>
- People living in poverty – 18.2%<sup>6</sup>
- Disabled – 26%<sup>3</sup>
- Migrants – 10%<sup>4</sup>
- Outdoor workers – 47%<sup>5</sup>
- Homeless - 0.6%<sup>7</sup>
- Mental Illness – 32%<sup>8</sup>
- Substance Use Disorders
- First Responders & healthcare workers



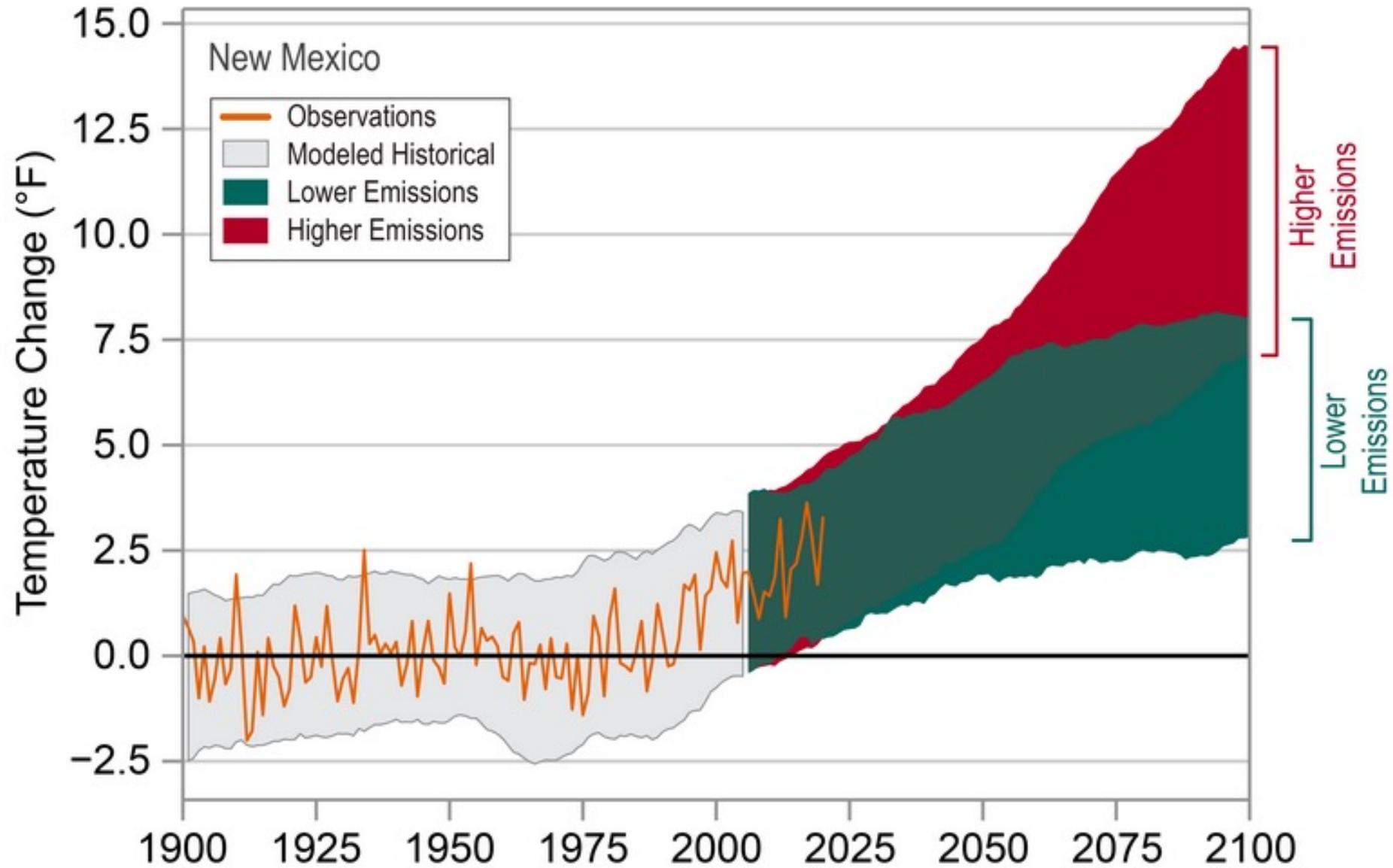
# Vulnerability Feedback Loop



Eddie Moore/Albuquerque Journal



# Observed and Projected Temperature Change



CISESS and NOAA NCEI

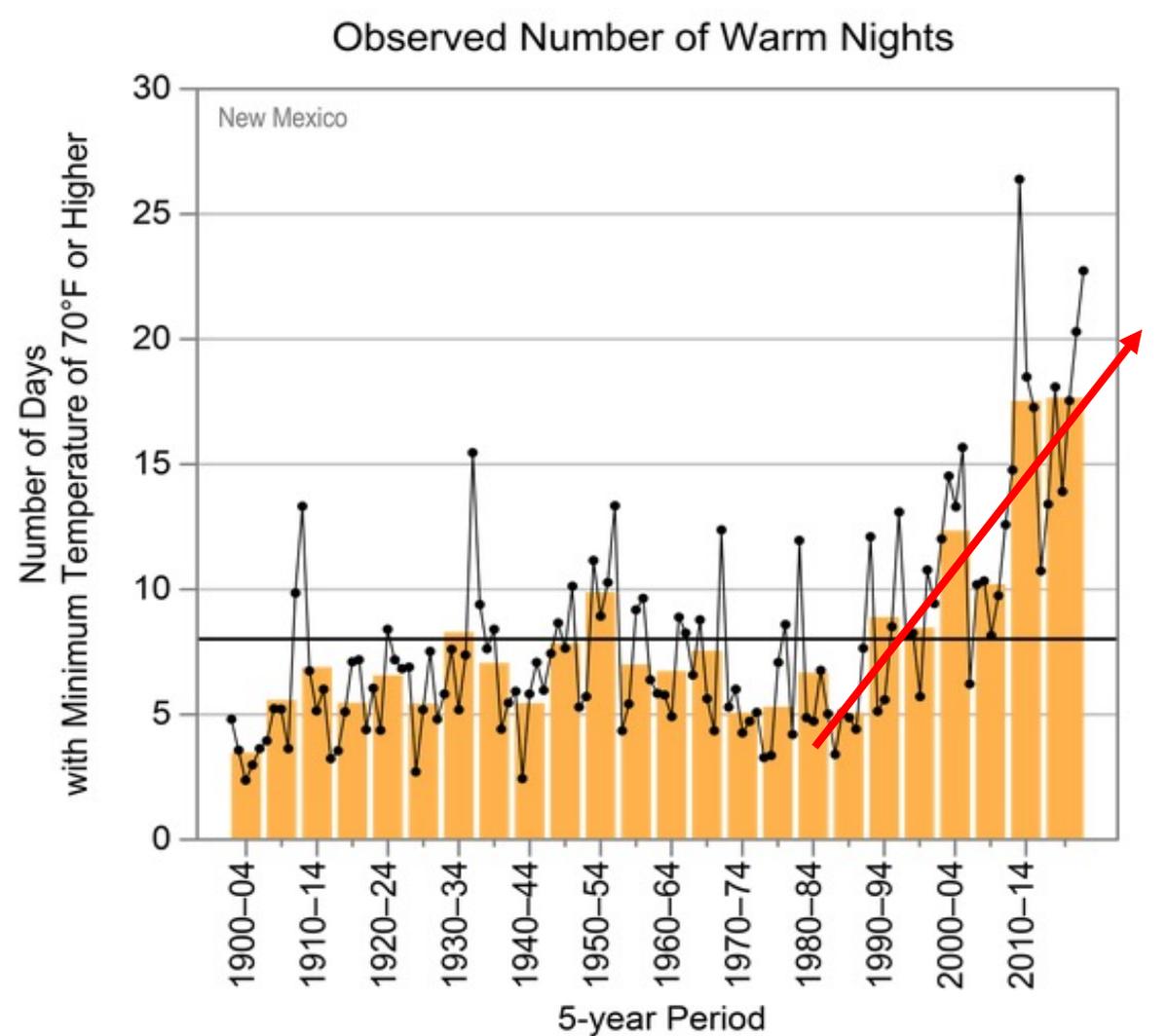
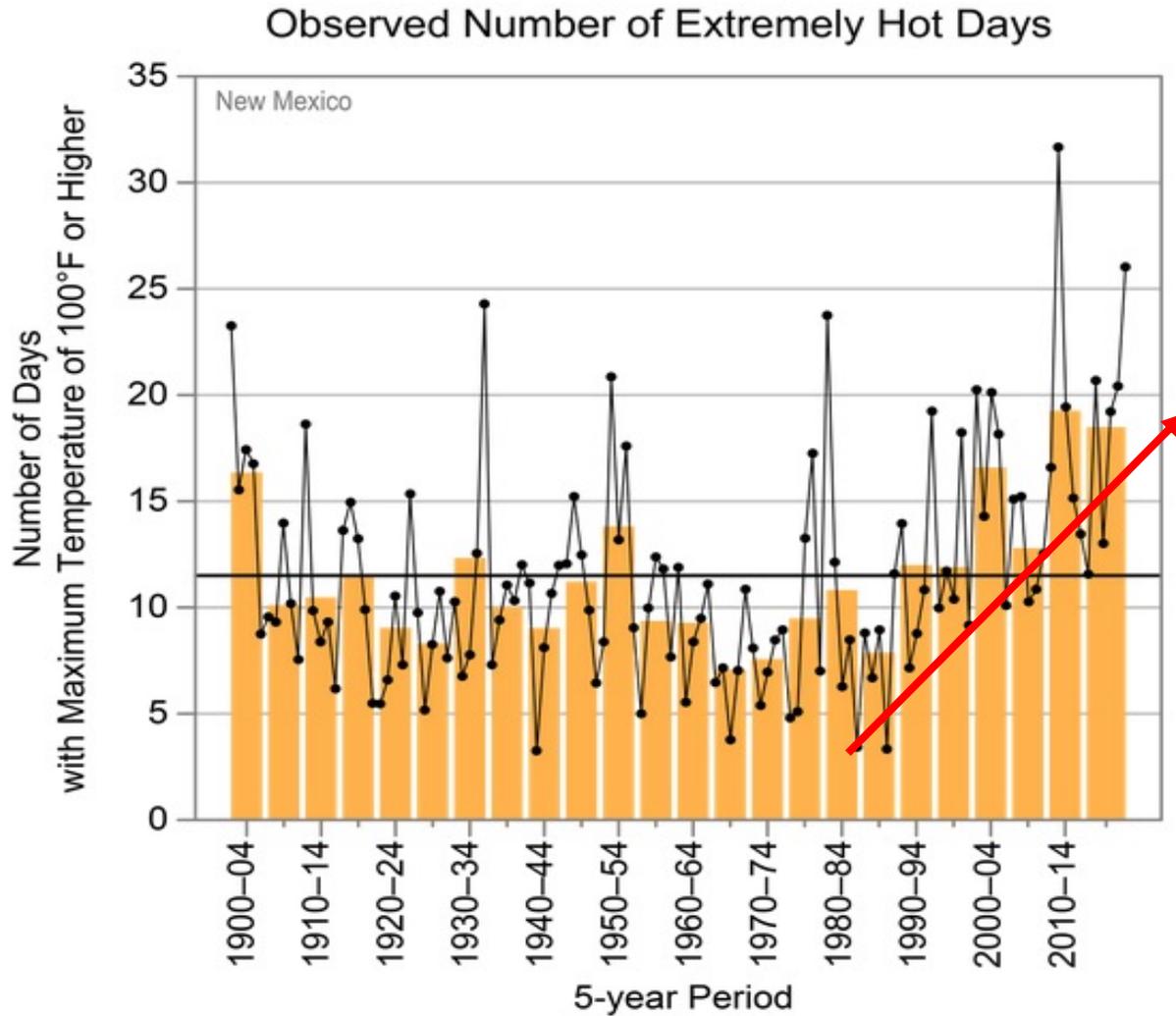
# What we know

- Temperatures will continue to rise 50+ years
- The changes we've already seen will continue to get worse.
- Climate-related hazards will grow in frequency, intensity, and duration.
- The likelihood of disasters on an unprecedented scale will grow.
- Likely to see direct and indirect impacts with significant social and economic implications

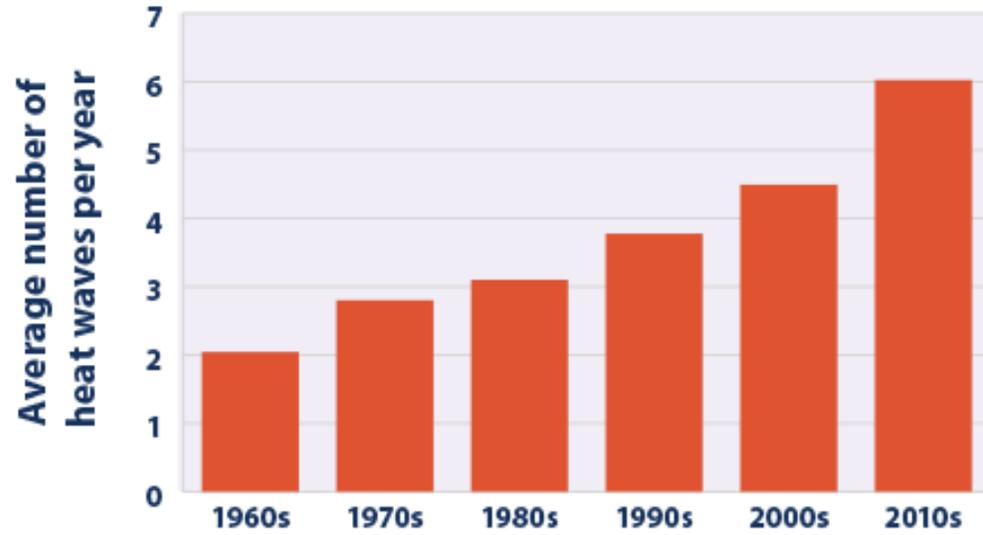


USDA Forest Service, via Associated Press

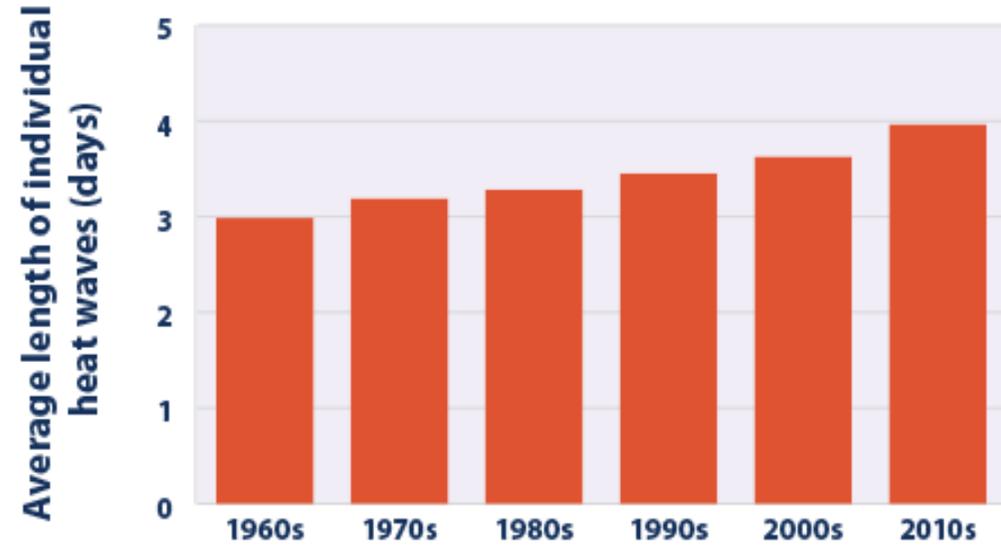
# Days and nights are getting hotter:



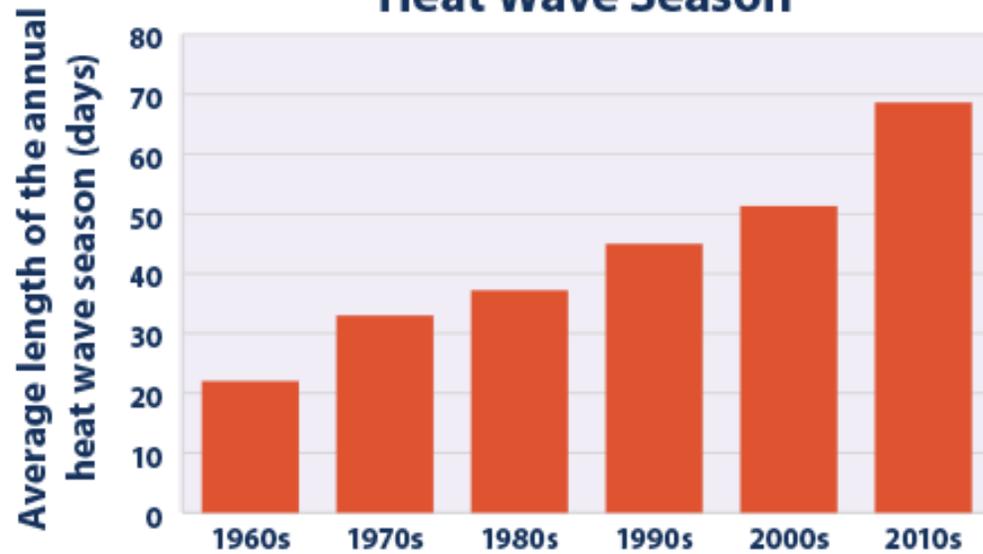
### Heat Wave Frequency



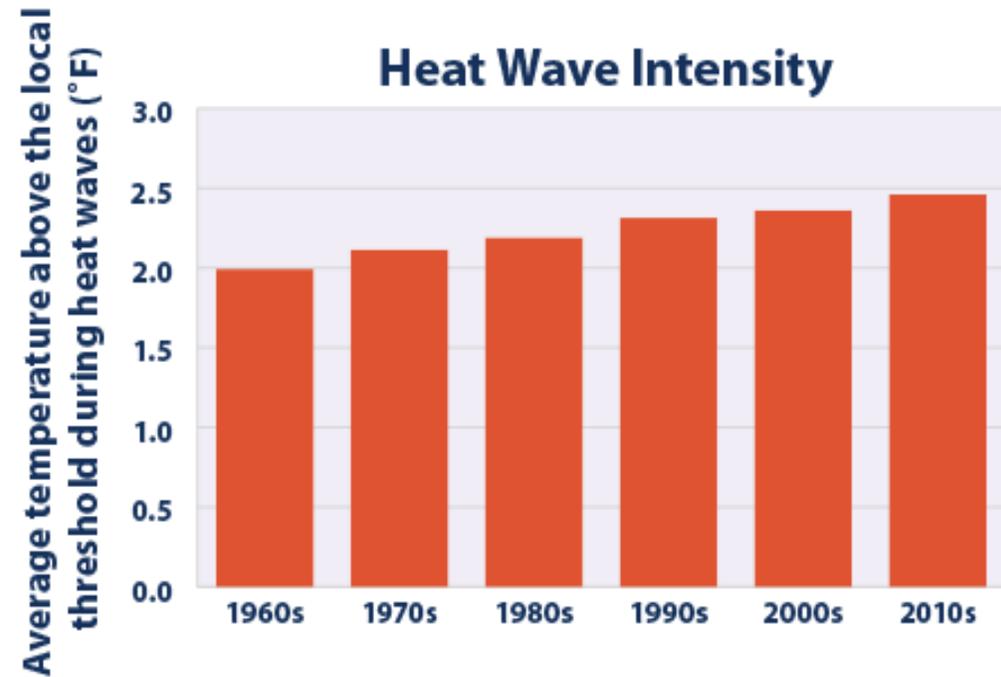
### Heat Wave Duration



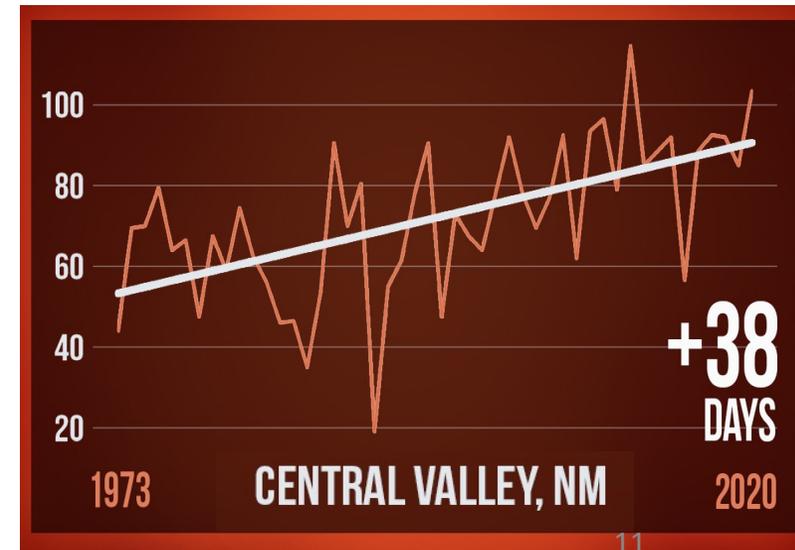
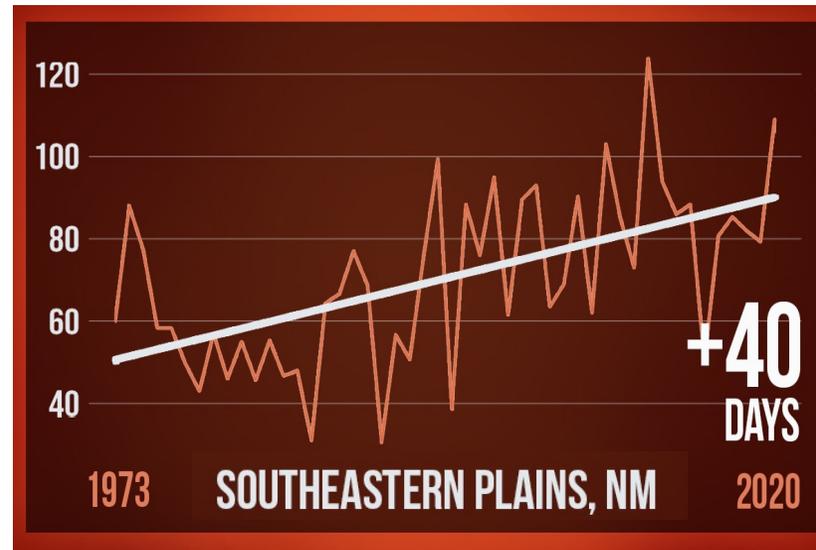
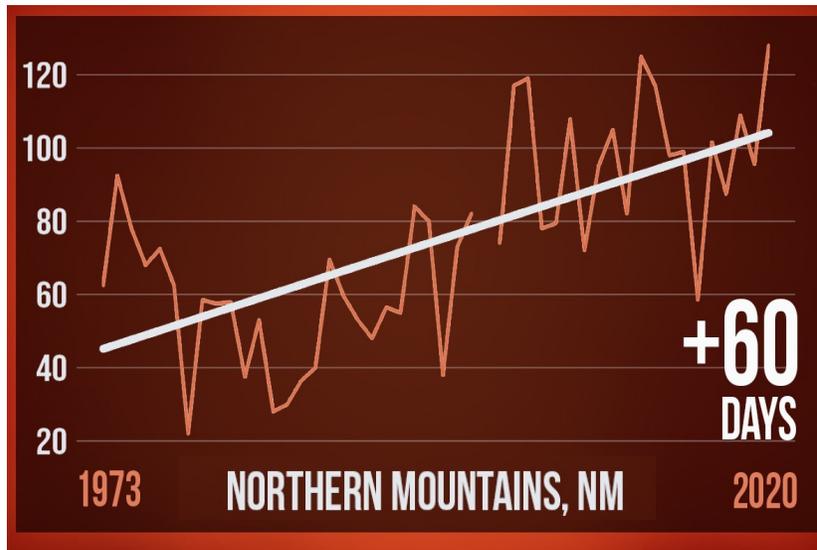
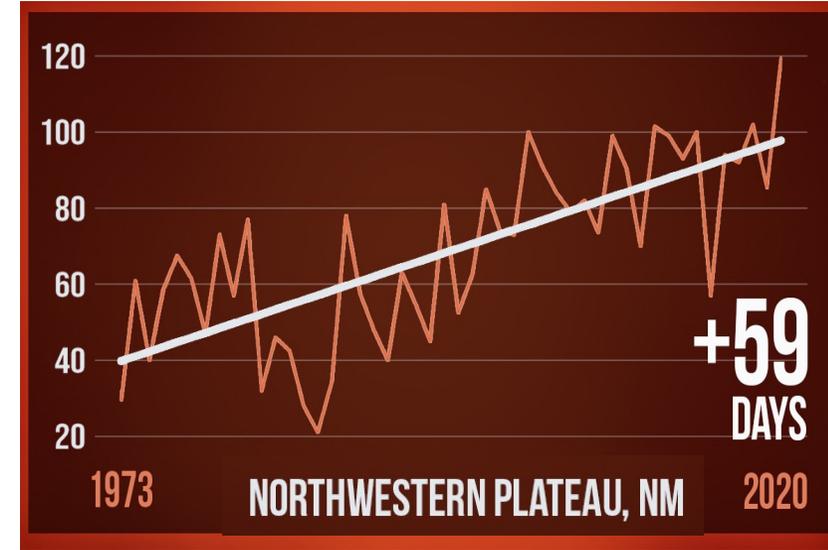
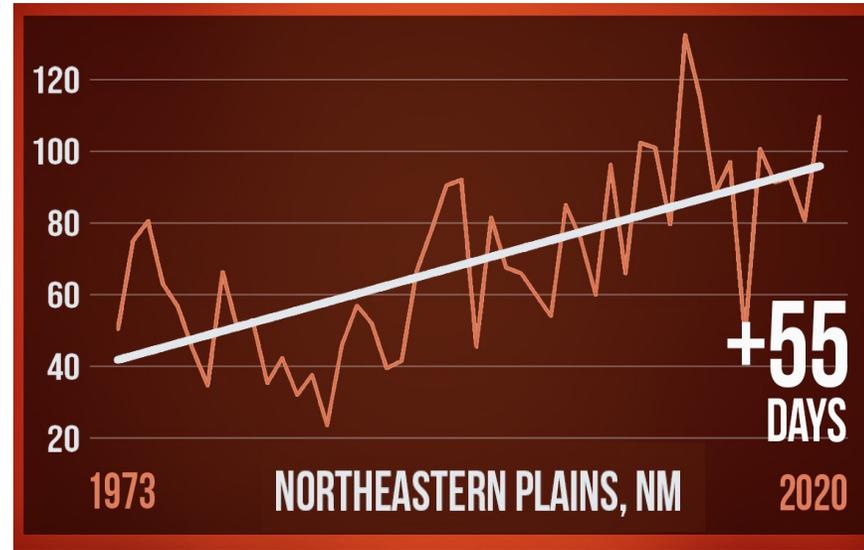
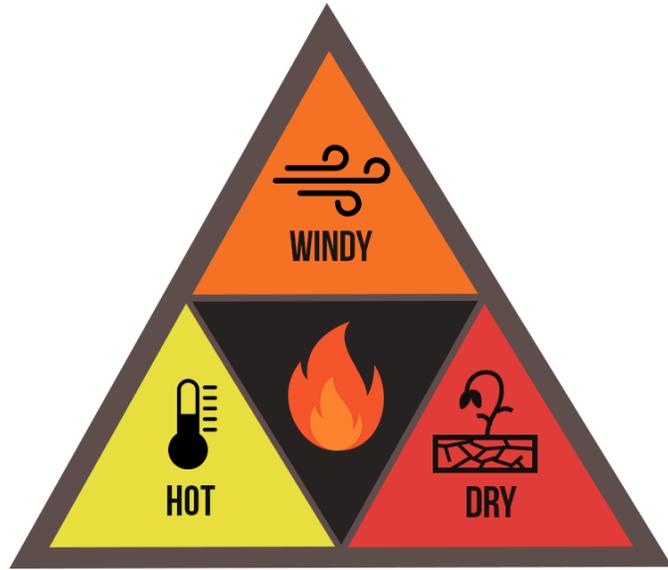
### Heat Wave Season



### Heat Wave Intensity

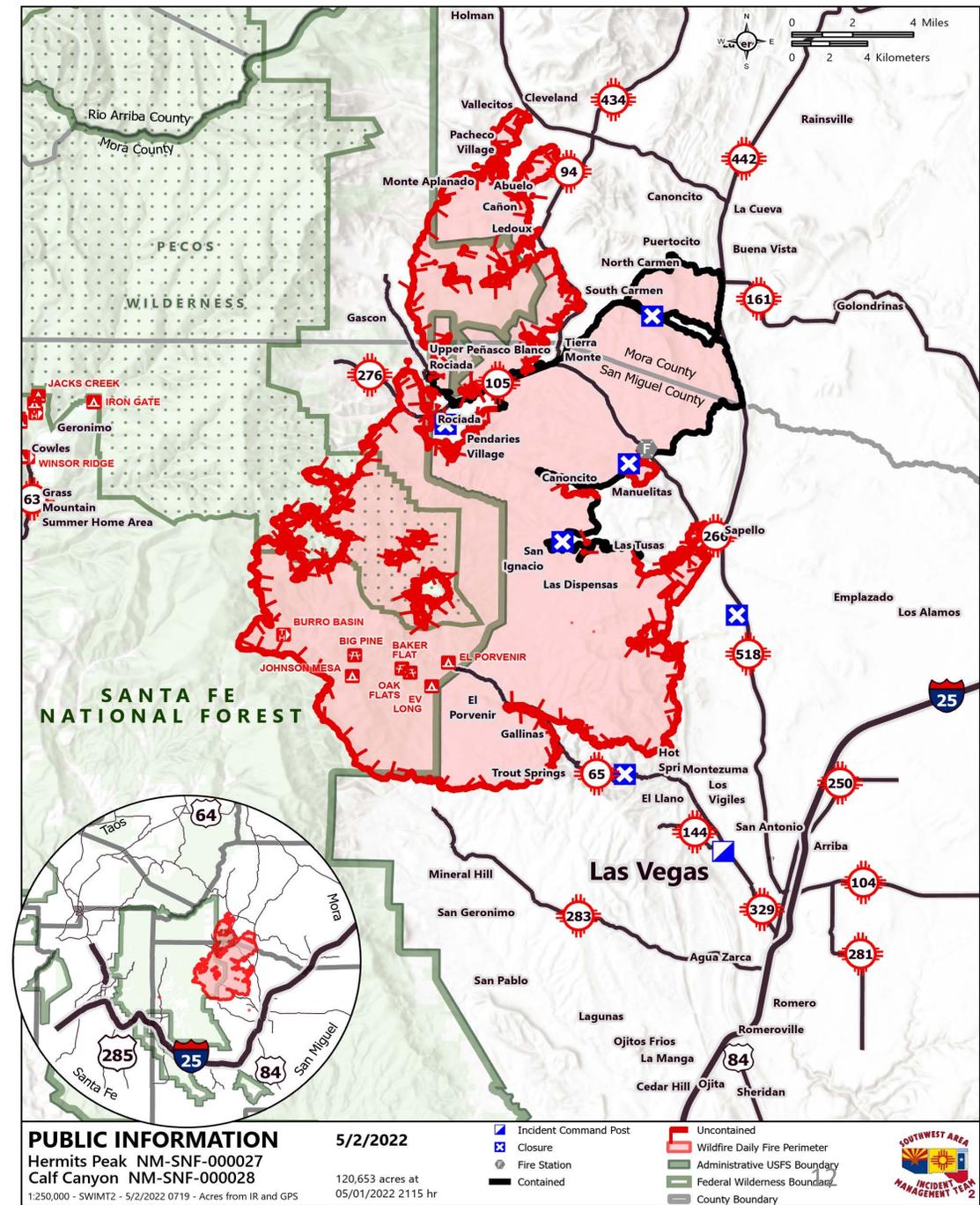


# Dramatic increase in fire weather days:



# NM 2022 Wildfire Season

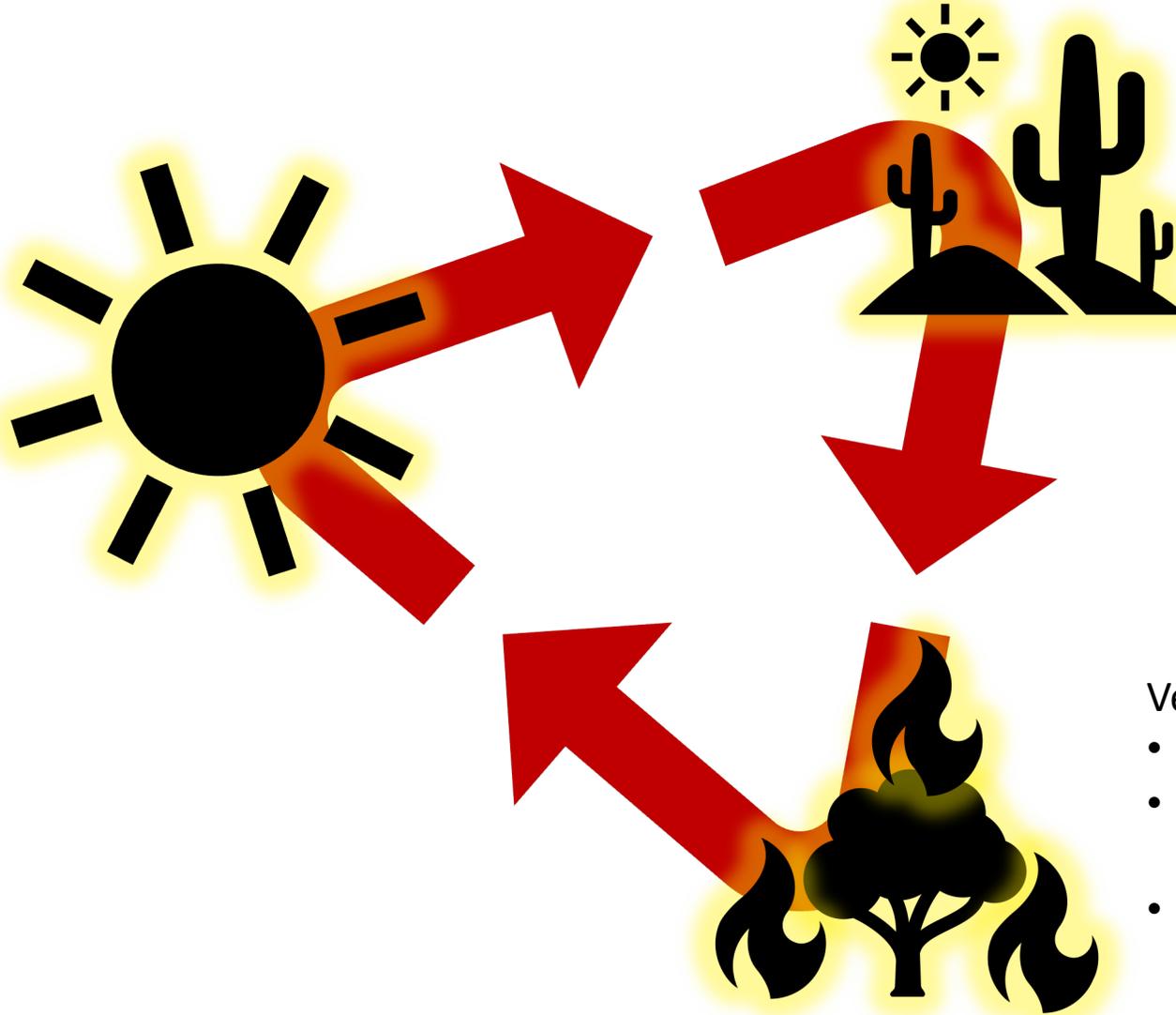
- 899,453 acres burned [over 1% of the entire areas of the state].
- 26,841 addresses were under evacuation in a single day [approximately 69,786 people].
- Approximately 1,450 homes were destroyed, impacting 3,800 people.



# Hot-Dry Feedback Loop

## Hotter Temperatures

- Less snowpack
- More evaporation
- Stress and loss of vegetation



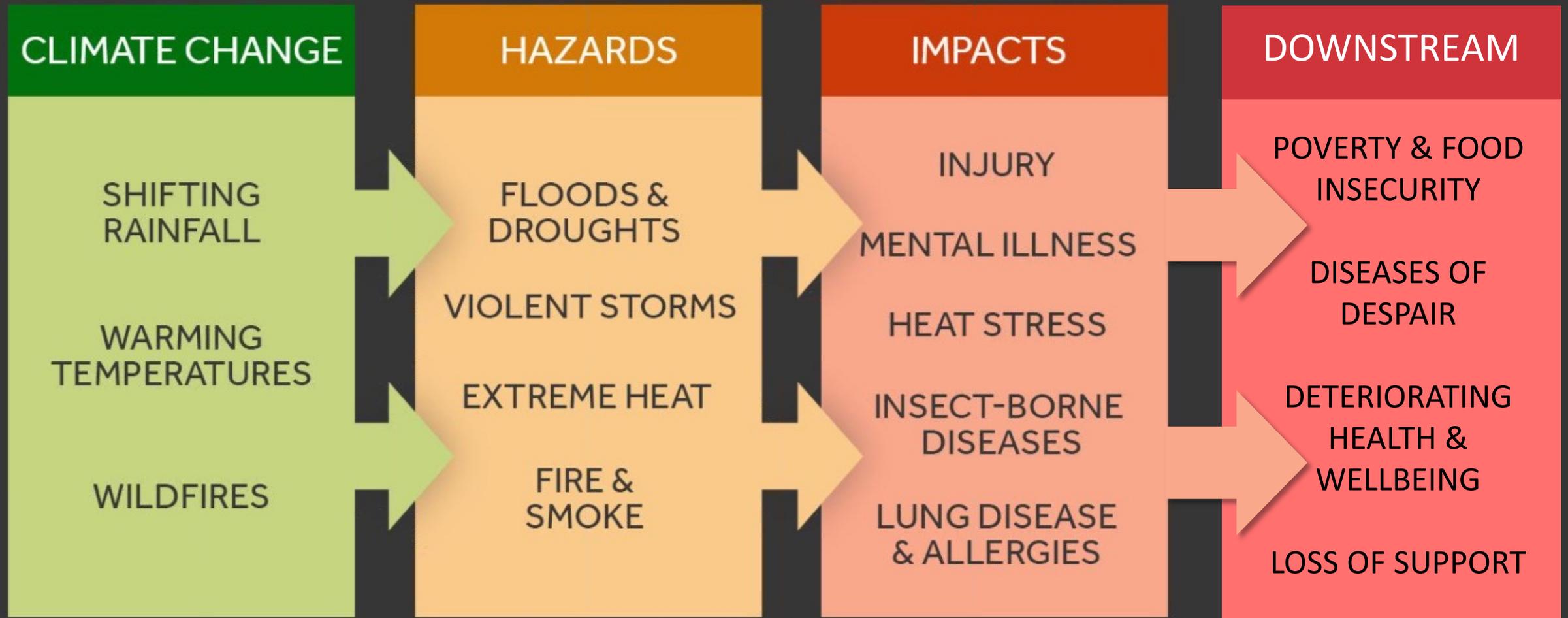
## DRY

- Hydrophobic soil
- Increases evaporation
- Stress and loss of vegetation

## Vegetation Loss:

- Reduces soil moisture
- Increases ambient temperatures
- Increases wildfires
  - hydrophobic soil

# CLIMATE CHANGE IMPACTS HEALTH

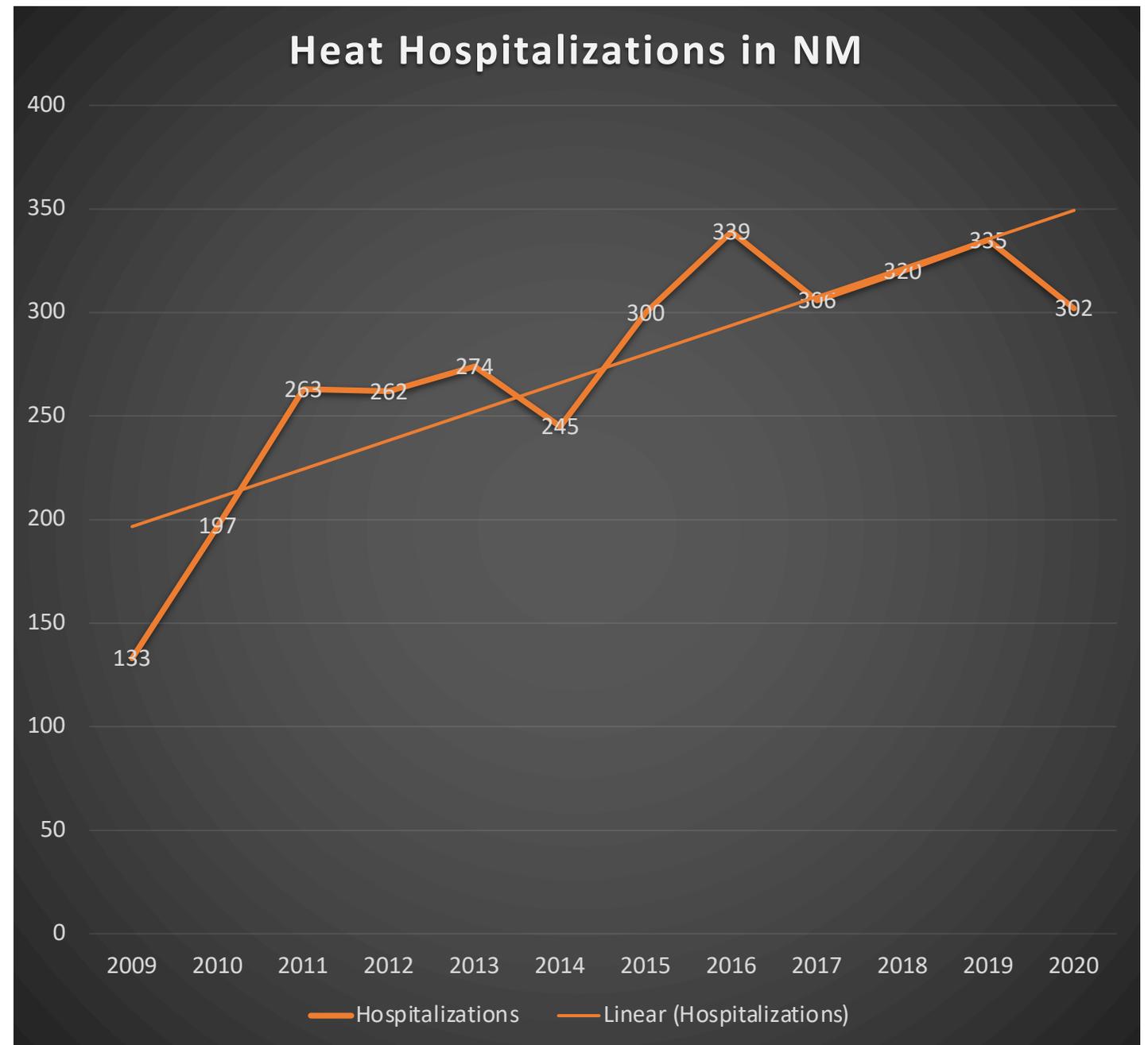


# Heat impacts on NM communities

Increase in heat-related hospitalizations and deaths.

Between 2009 and 2020, **hospitalizations in NM for heat stress doubled.** This largely undercounts the true impacts, as heat stress can manifest in respiratory and cardiovascular emergencies.

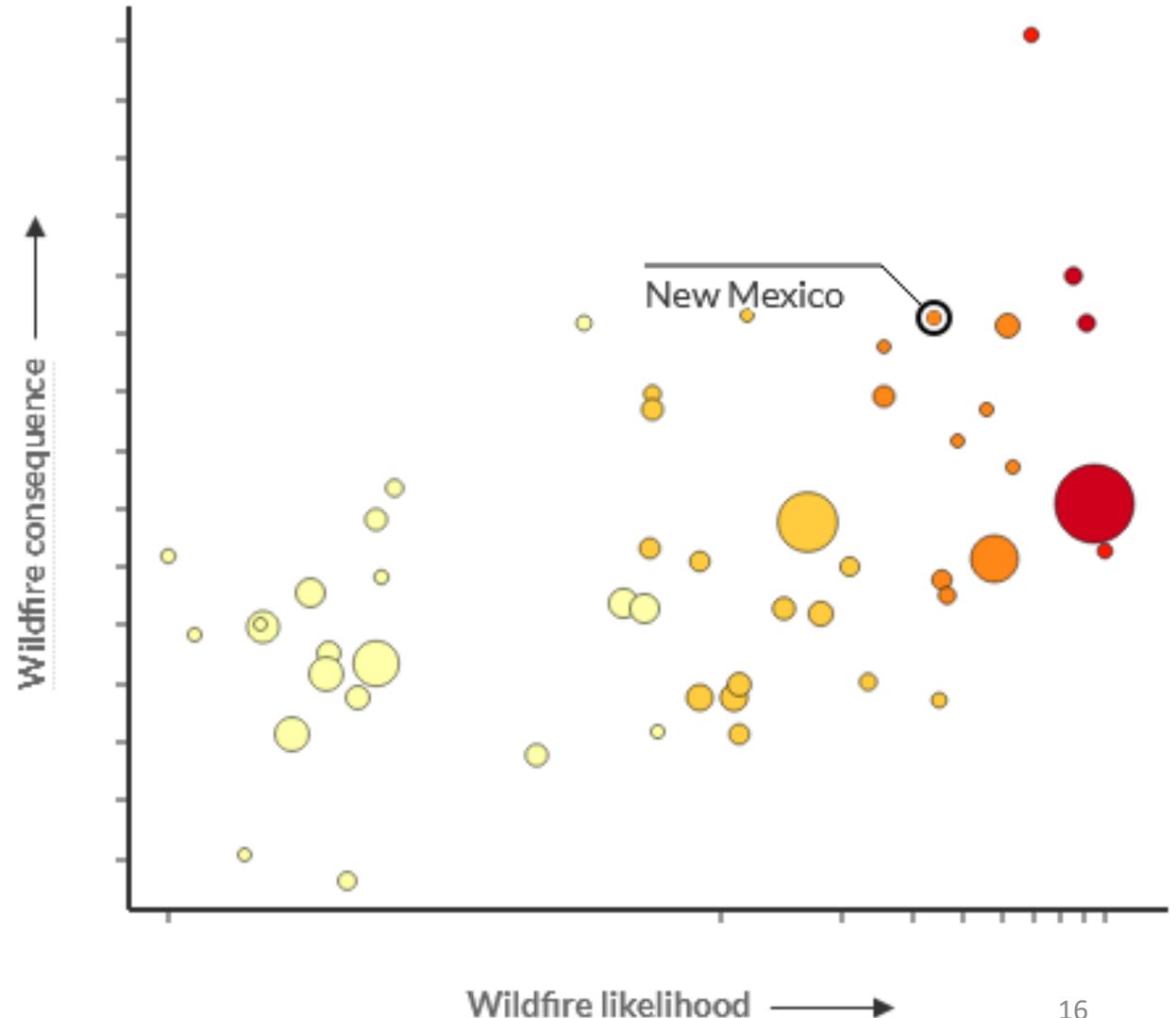
*Heat waves already kill more people in the US each year than any other weather-related hazard*



# Wildfire impacts on NM communities

Increase in wildfire-associated hospitalizations and deaths

- Morbidity and mortality from burns
- Smoke inhalation
- Indirect trauma associated with evacuations
- Post-wildfire flooding
- Damage to critical infrastructure
- Water contamination



# Smoke impacts on NM communities

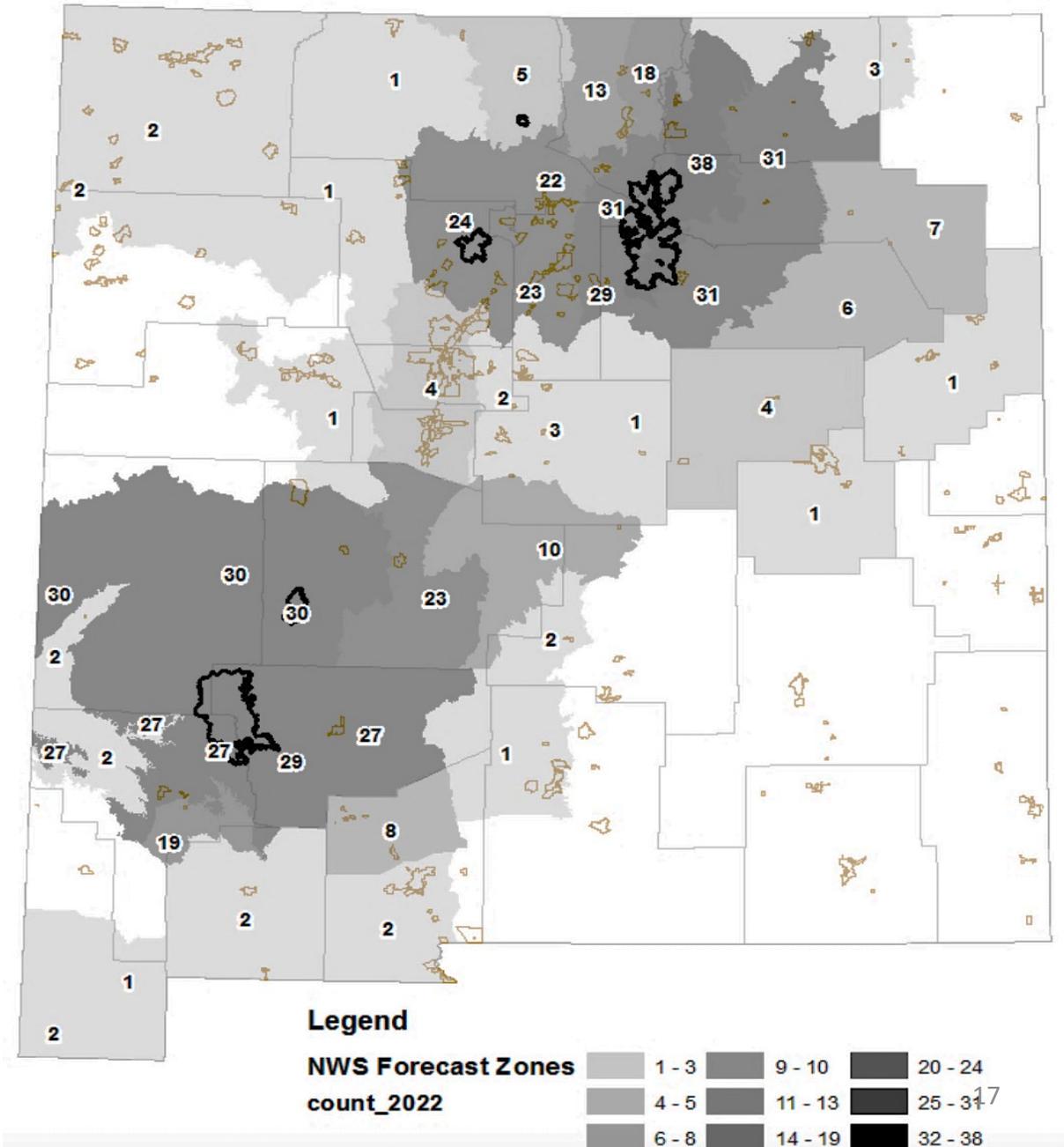
Increase in smoke-related hospitalizations and deaths.

This summer alone, we saw **2,555 respiratory ED visits in NM**, an 18% increase compared to previous summers. 80% of the patients being from the most vulnerable communities (SVI).<sup>1</sup>

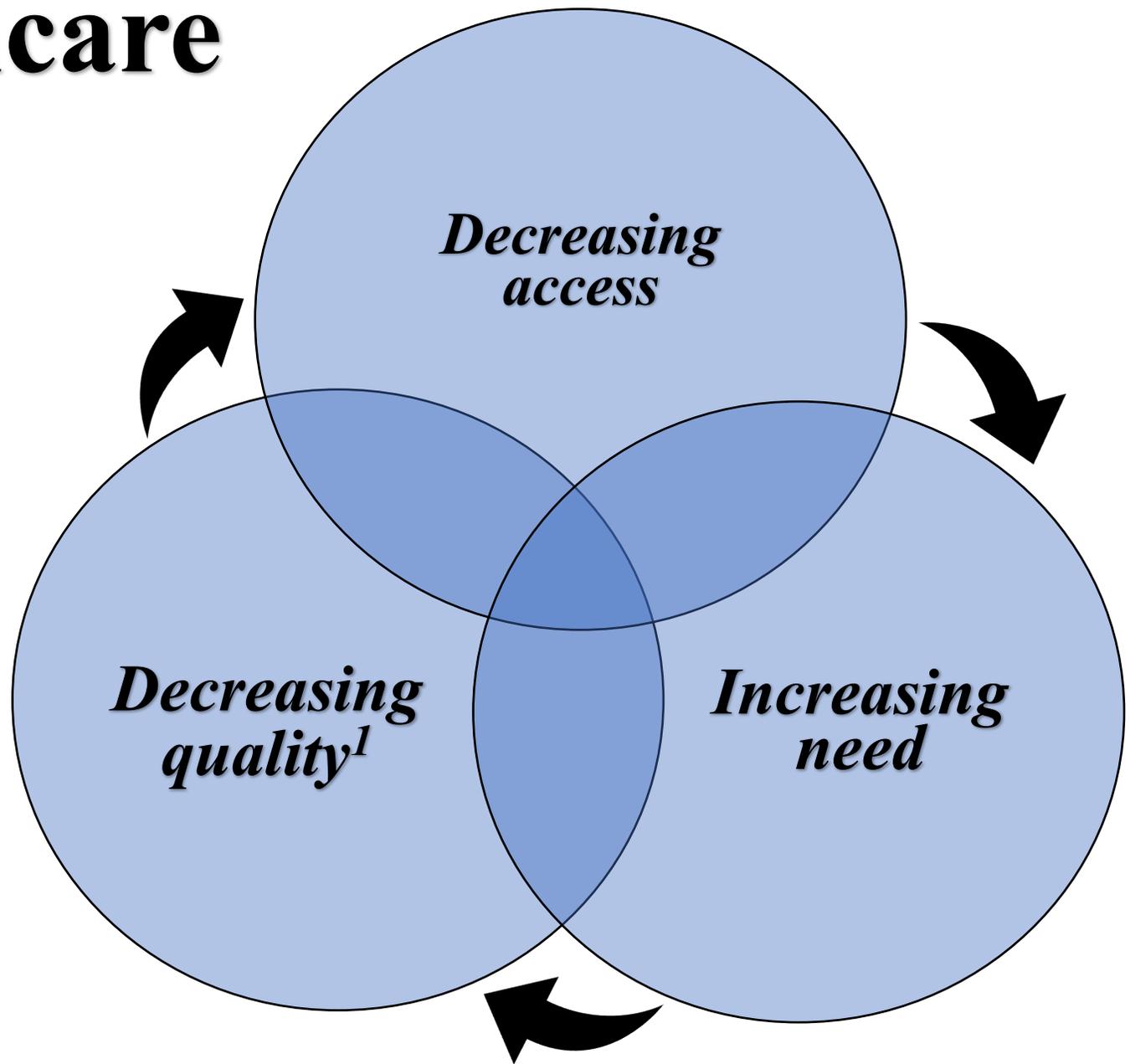
*Long-term exposure to smoke has been linked to:*

- **Development of childhood asthma**
- **Increase in risk of heart palpitations and heart attacks**
- **Decreasing lung function**

Number of Days with Air Quality Alerts for Wildfire Smoke  
April 13 to June 17, 2022 (66 days)



# Impacts to Healthcare



# Critical Infrastructure

**Extreme heat stresses PNM grid**

BY KEVIN ROBINSON-AVILA / JOURNAL STAFF WRITER

## Supply chain disruptions



Updated: 7:48 AM MST Feb 23, 2021

**How Texas storm & power outage is hurting New Mexico's food supply chain**

## Injury and suffering

**Flash Floods Kill 4 People in the Wake of New Mexico's Historic Wildfire**

# Large-scale displacement

**Northern NM residents piece together rough housing solutions when FEMA aid doesn't come**

While many still can't find stable homes, some houses sit empty, vacated because of flooding threat

## Infectious disease risks

**A new mosquito is stalking New Mexico. Is the state ready?**

Climate change creates a hospitable environment in NM as the United Nations warns of the potential for disease spread

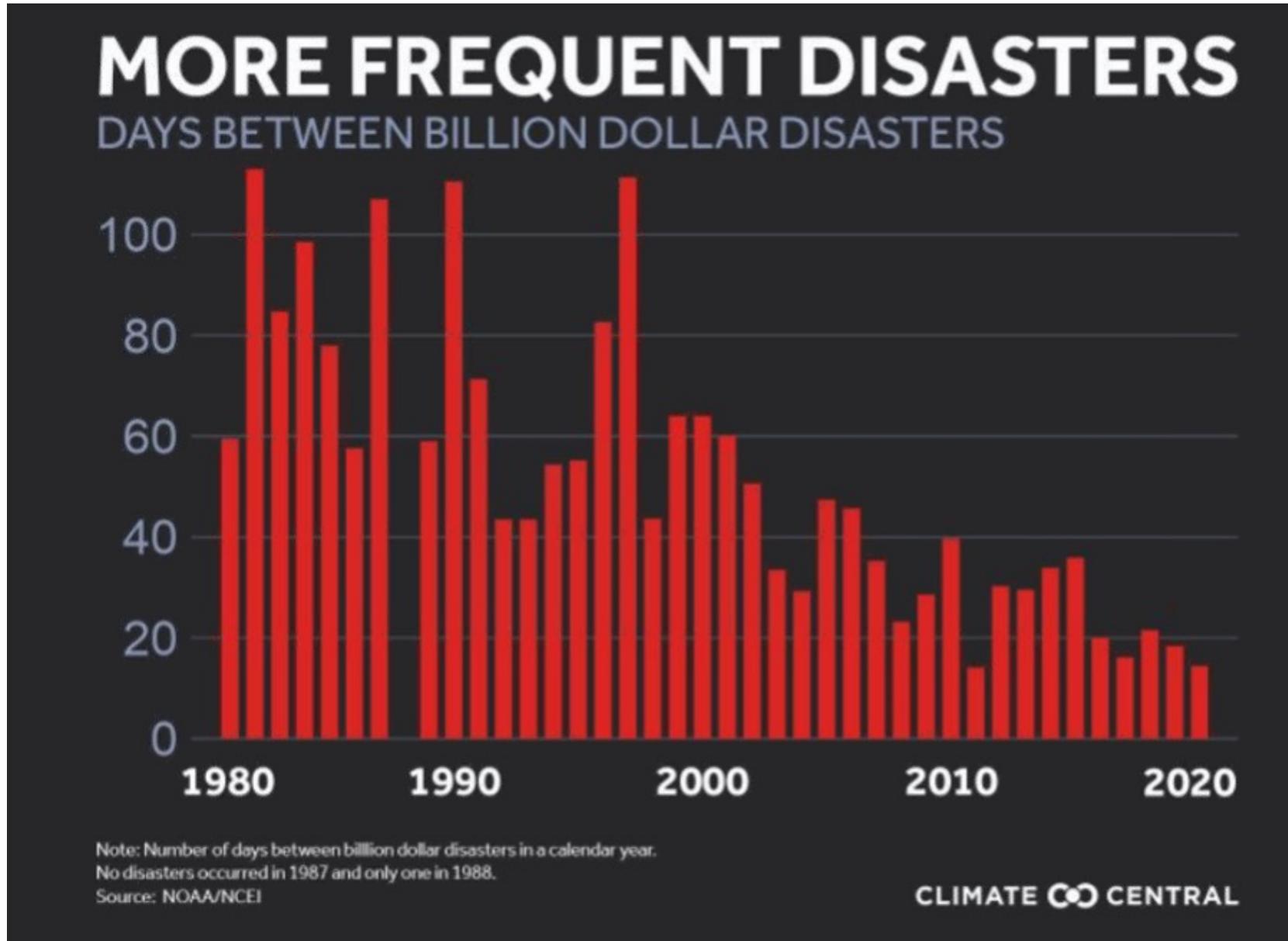
# Downstream & Long-term Impacts

- Mental health stressors, psychological trauma, and adverse childhood events <sup>1</sup>
- Increase in poverty and food insecurity<sup>2</sup>
- “Diseases of despair”- suicidality, substance use disorder<sup>3</sup>
- Chronic diseases<sup>4</sup>
- Political tensions over scarce resources<sup>5</sup>



Hector Amezcua

# Costs will skyrocket: a 'spiral of self destruction'

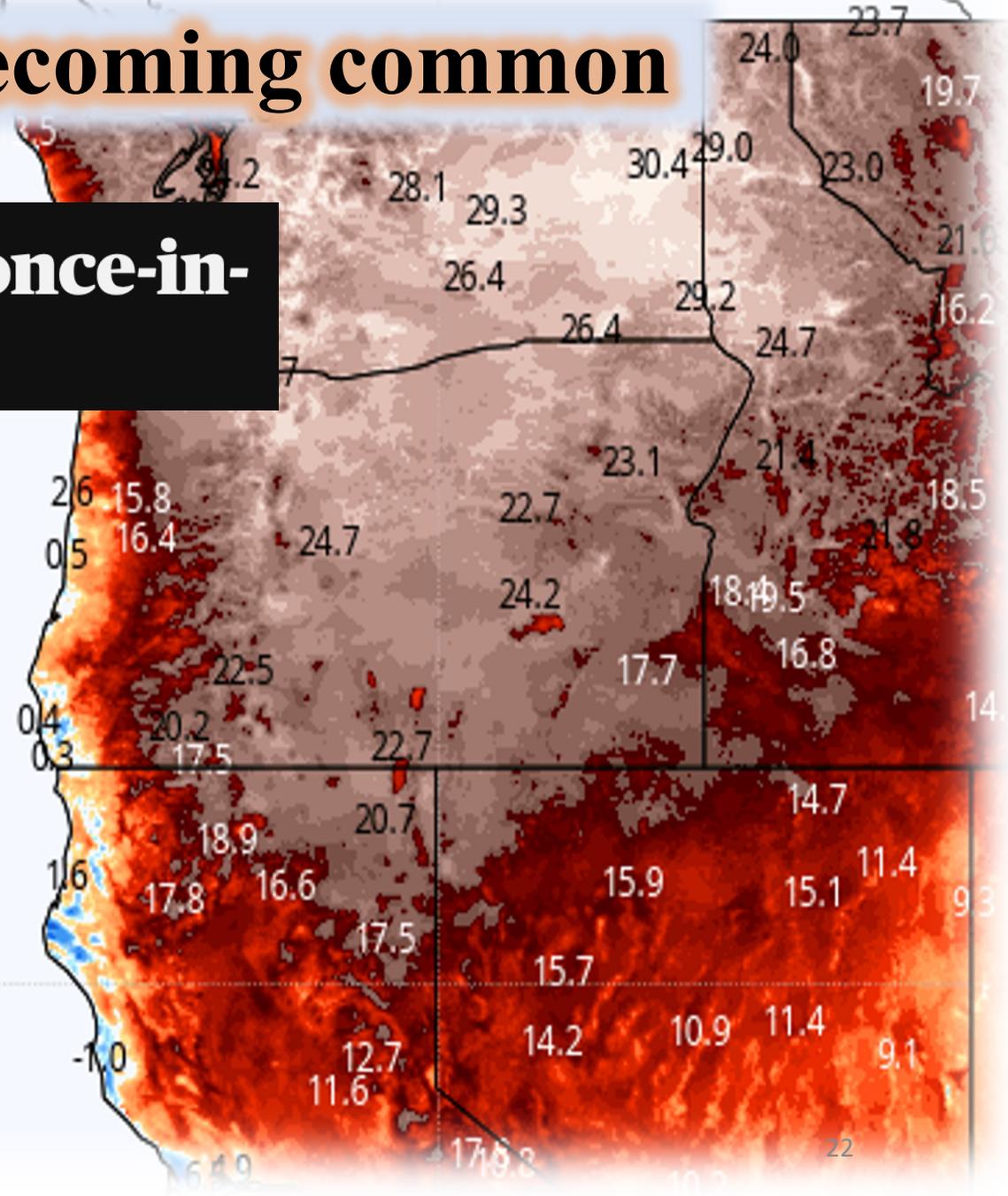


# Unprecedented events are becoming common

## Pacific Northwest bakes under once-in-a-millennium heat dome

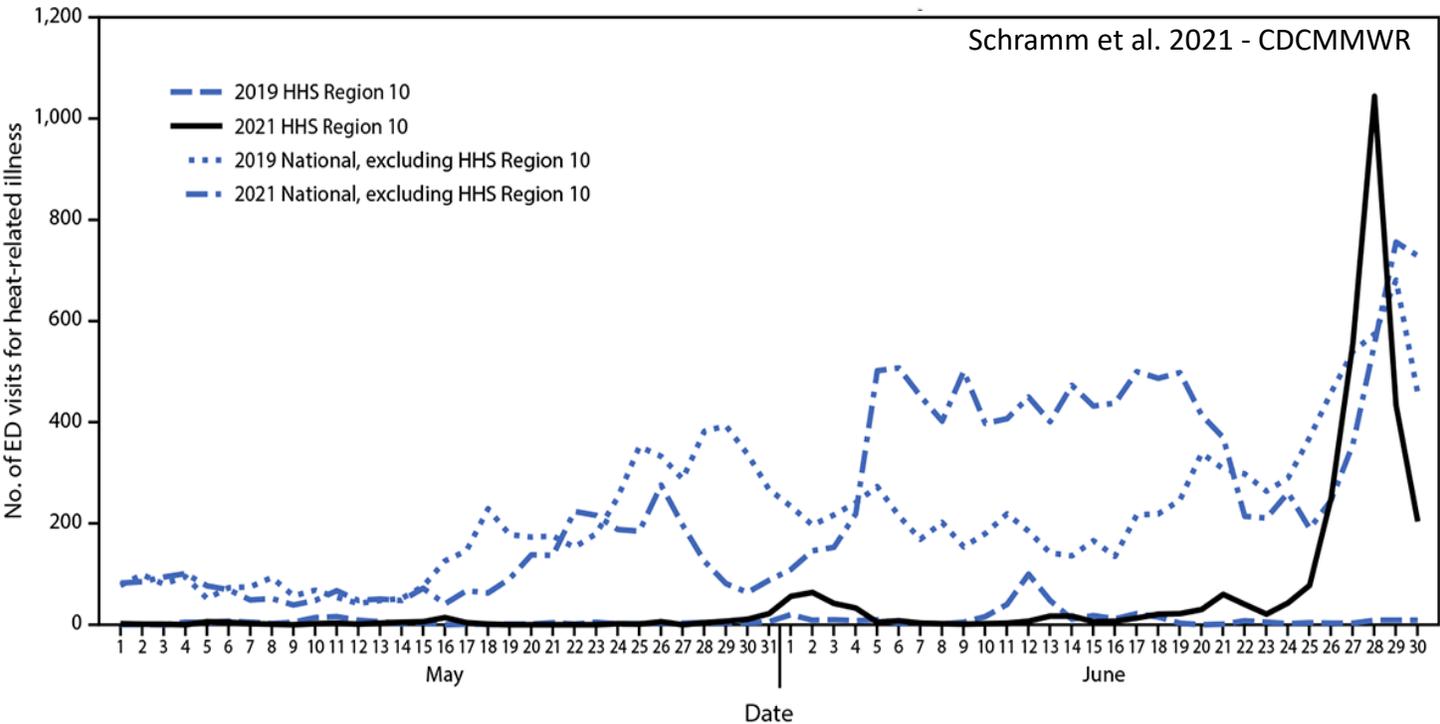
“Looking into the future, in a world with 2°C of global warming (0.8°C warmer than today which at current emission levels would be reached as early as the 2040s )...an event like this – currently estimated to occur only once every 1000 years, would occur roughly every 5 to 10 years.”

- Philip et al., 2021  
World Weather Attribution



No. of ED visits for heat-related illness

Schramm et al. 2021 - CDCMMWR



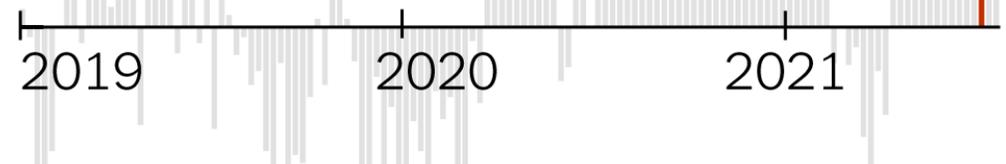
# Washington

+446 extra deaths

**Week of the heat wave**

Winter Covid surge

Coronavirus epidemic begins



**“We had calls for help coming in every 30 seconds”**

**- Snohomish County EMS**

ENVIRONMENTAL PROJECT

# State climatologist: Communities need to prepare for climate change

By Hannah Grover

9 hours ago

CLIMATE

## Climate Change Is The Greatest Threat To Public Health, Top Medical Journals Warn

September 7, 2021 · 5:01 AM ET

## Climate change: A threat to human wellbeing and health of the planet

Taking action now can secure our future, experts say in new IPCC report

Date: February 28, 2022



AMERICAN PSYCHOLOGICAL ASSOCIATION

## Urgent need to address mental health effects of climate change, says report

# Adapting is an opportunity to improve the health of all New Mexicans

- Address underlying inequities
- Foster connected and empowered communities
- Reduce outdoor and indoor air pollution
- Preparing communities for extreme weather
- Develop more resilient infrastructure
- Promote co-benefits of mitigation and adaptation (e.g. insulation & micro-grids)
- Education and outreach about the health impacts of climate change and collective actions.



**NM needs the public health infrastructure to understanding climate impacts and implementing climate-focused health solutions.**

**We are drafting a legislative bill to do this:**

- 1. Climate change and health program**
- 2. Climate and health action plan**
- 3. Funding for local and tribal climate adaptation work**



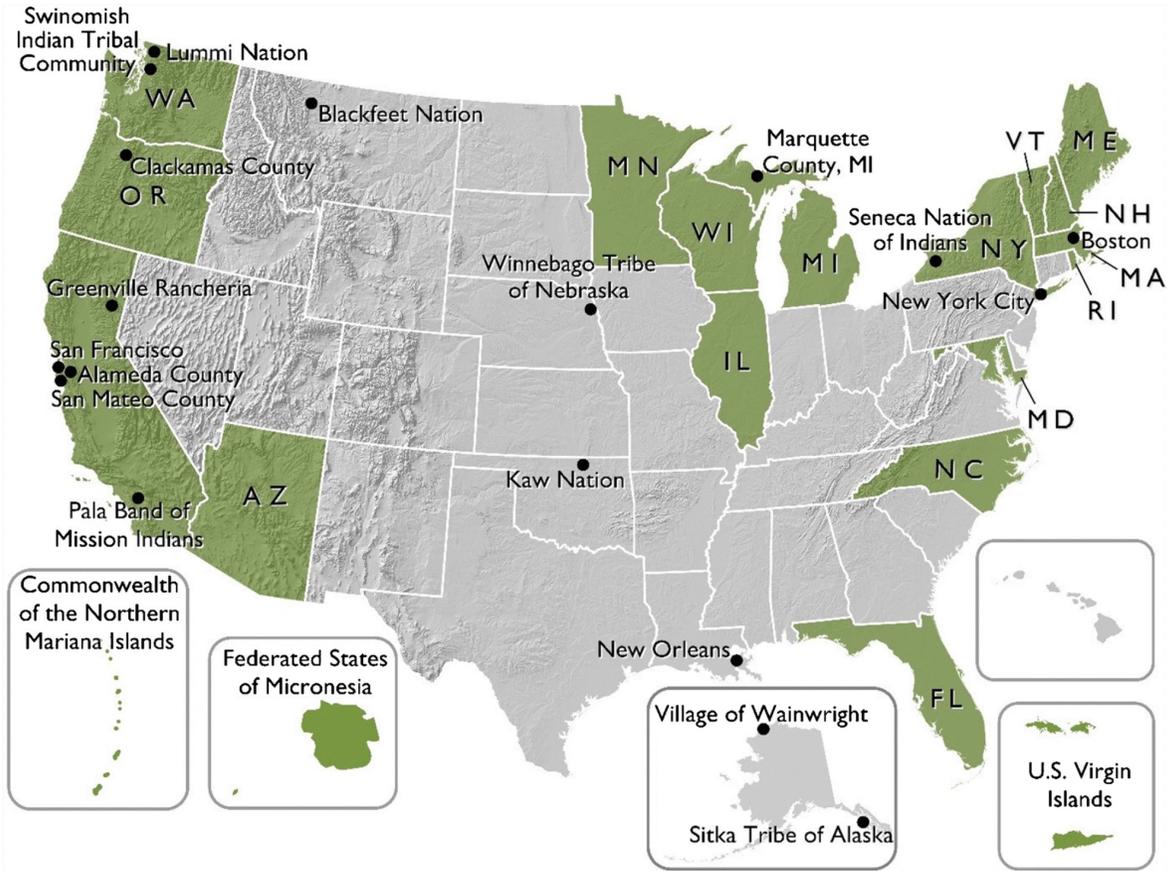
# 1. Climate Change and Health Program

- Surveillance
- Support development and implementation of response systems
- Programmatic Work
- Expertise
- Bringing together siloed work within and across departments
- Support communities in accessing a growing amount of funding

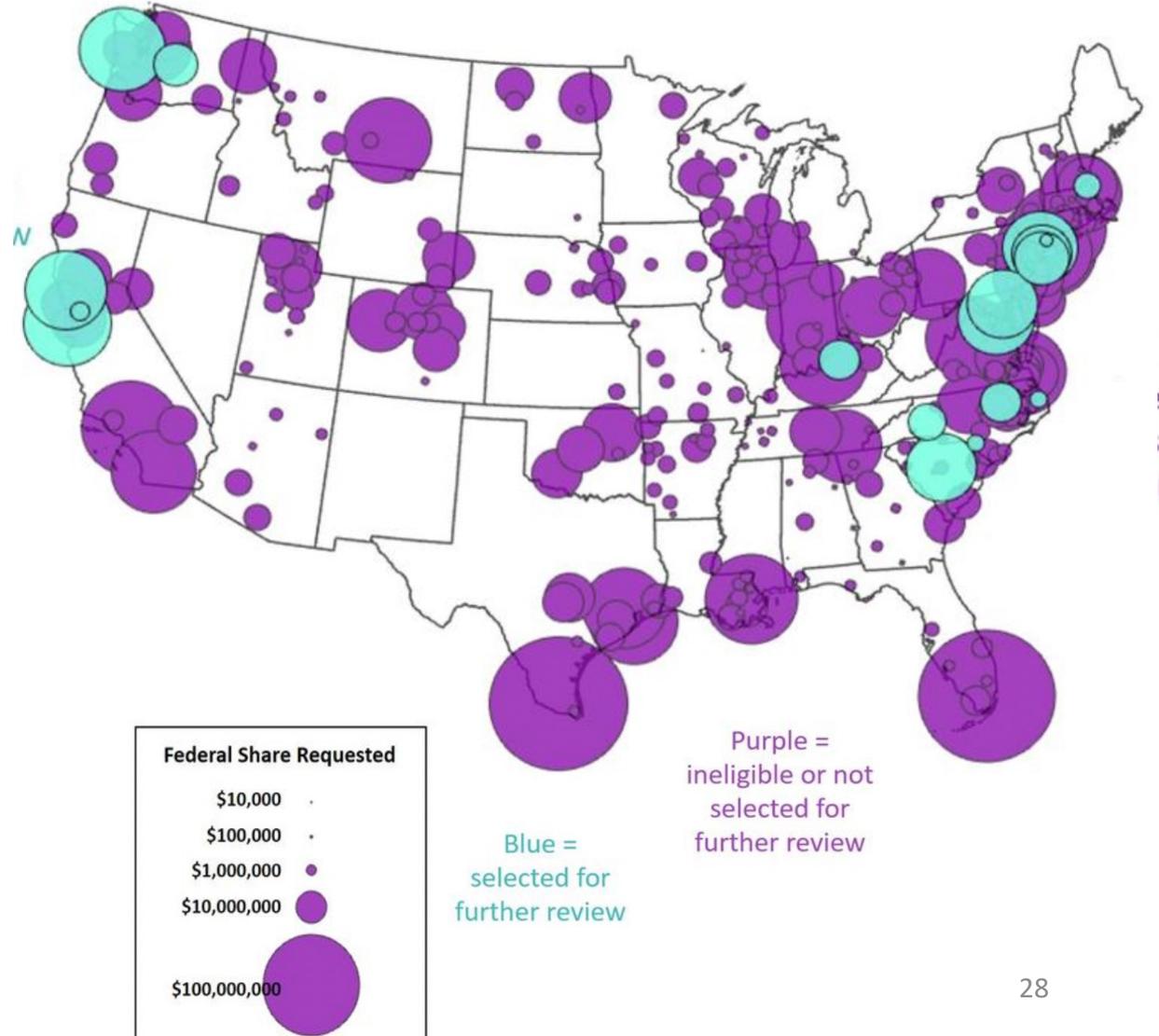


**Biden-Harris Administration  
Announces More than \$3 Billion in  
Funding for Two FEMA Programs to  
Increase Climate Resilience  
Nationwide**

# Climate and health programs across the U.S.



# Building Resilient Infrastructure and Communities (BRIC) – 2020 recipients



# 2. Climate and Health Adaptation Plan

- Provide assessment of regional vulnerabilities and climate impacts specific to NM
- Uses climate science to project future disease burden
- Create a public health roadmap for preventing, mitigating, and addressing climate-related impacts.
- Identify success metrics and assess programmatic progress
- Identify opportunities for collaboration between departments and across DOH programs.

## ADAPTATION & RESILIENCE IN PUBLIC HEALTH

### PUBLIC HEALTH

Increases in the frequency and severity of climate change impacts—droughts, wildfires, extreme heat, among others—will have rippling effects on the health of New Mexicans. For example, climate change impacts are expected to worsen asthma, chronic obstructive pulmonary disease, and mental health. Simultaneously, the COVID-19 crisis is exacerbating public health outcomes for people across New Mexico. These health impacts are acutely felt by the elderly, tribal populations, and overly burdened communities. However, the State of New Mexico has achieved progress this year in addressing issues at the intersection of climate resilience and public health.

### HEALTH IMPACTS FROM WORSENING AIR QUALITY

NMDOH has made progress on health effects from worsening air quality driven by climate events, such as fine particles from wildfires. It has identified health outcomes — including temperature-related illness, asthma, pulmonary diseases, carbon monoxide poisoning, among others — affected by poor air quality and climate change.

### AN ADAPTATION FRAMEWORK THAT INCORPORATES HUMAN HEALTH

The New Mexico Department of Health (NMDOH) has updated its plan for the adaptation of behaviors to protect human health in the face of climate change. By applying the Centers for Disease Control and Prevention's (CDC) iterative [Building Resilience Against Climate Effects \(BRACE\) Framework](#), NMDOH has advanced strategies to help New Mexico communities prepare for the health impacts of climate change. Through coordination among the interagency Climate and Health Adaptation Working Group, the State has applied the CDC's Agency for Toxic Substances and Disease Registry's [Social Vulnerability Index](#) and climatological information to identify vulnerable communities in New Mexico whose health will be most severely affected by climate change.



The importance of addressing these outcomes is included throughout the state's BRACE plan.

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# 3. Funding for local climate adaptation work

## Non-recurring fund to:

- Kickstart local and tribal climate adaptation work.
- Examples could include:
  - Provide tools for baseline data to understand local impacts and implement local solutions
  - Climate integration in local-level preparedness and health outreach work
  - Increase local agency awareness to needs and available resources
- \$ Amount TBD



**> STAYING SAFE IN THE HEAT**

**> SOURCE: OHIO DEPARTMENT OF HEALTH**

- > STAY INSIDE IN THE AIR CONDITIONING
- > STAY HYDRATED
- > SCHEDULE ANY OUTDOOR ACTIVITY EARLY OR LATE
- > WEAR LOOSE, LIGHT WEIGHT & LIGHT-COLORED CLOTHING
- > PACE YOURSELF



Ana Rios

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Moms Clean Air Force – EcoMadres NM

**We invite your continued input and support, as we  
move to finalize this legislative bill.**

**NM Voices for Children**

**Natural Resources Defense Council**

**Conservation Voters NM**

**Sierra Club Rio Grande Chapter**

**New Mexico Public Health Association**

**Moms Clean Air Force – Ecomadres NM**

# *Thank you*

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