

MIGRANT CLINICIANS NETWORK



Photo credit: Stephanie Rodriguez / CAUSE

**Preparing for Wildfires -
Information and Resources to
Support Farmworker Communities
During Wildfire Season**

**Maeve Macmurdo, MD
Deysi Merino-González
June 25, 2024**



MIGRANT CLINICIANS NETWORK



A force for health justice

**Somos una fuerza dedicada a
la justicia en salud**

Our mission is to create practical solutions at the intersection of vulnerability, migration and health.

We envision a world based on health justice and equity, where migration is never an impediment to well-being.

Farmworker Justice

Farmworker Justice is a nonprofit organization that seeks to empower farmworkers and their families to improve their living and working conditions, immigration status, health, occupational safety, and access to justice.

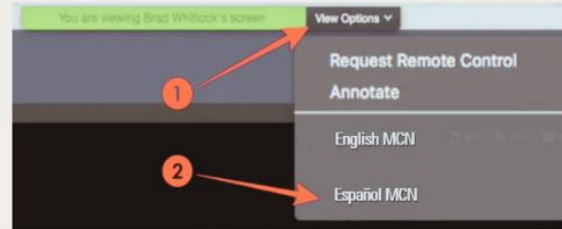
Using a multifaceted approach, FJ engages in litigation, policy advocacy, capacity-building, and education.

www.farmworkerjustice.org



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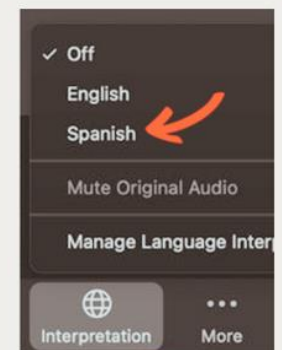


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Agenda

- Welcome/ introductory information
- Background on wildfires and farmworker communities
- Wildfire Smoke & Farmworker Health (Dr. Maeve MacMurdo)
- Emergency Preparedness (Deysi Merino-Gonzalez)
- Resources
- Evaluation

HRSA ACKNOWLEDGEMENT

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Objectives

- Learn about wildfires in the US and how they affect farmworker communities.
- Identify the effects of wildfire smoke on the health and well-being of farmworkers.
- Explore resources to help farmworker communities better prepare for wildfires in their communities.



WASHINGTON DC

Wildfires

“There is nothing heroic about what we do. We work out of necessity.” –

Erick

United Farmworkers



Wildfire smoke and farmworker health

Dr. Maeve Georgia MacMurdo
Cleveland Clinic Occupational
Lung Disease Clinic



Objectives



Discuss patterns and trends in wildfire smoke exposure



What makes wildfire smoke different

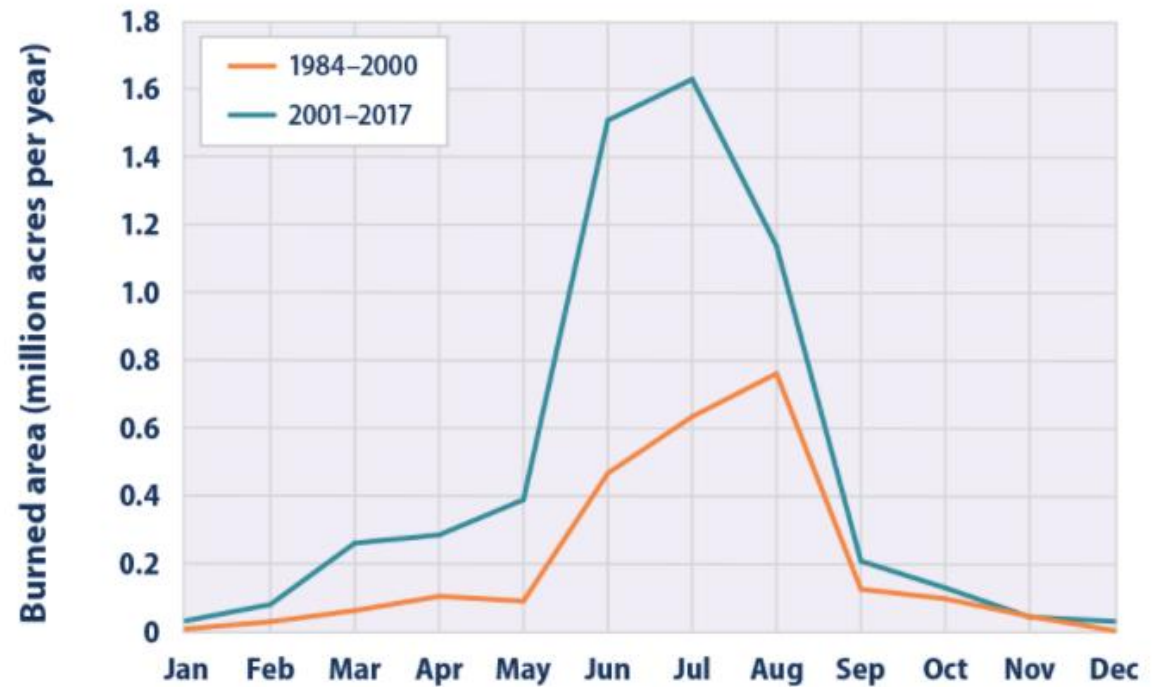


What do we know (and don't know) about wildfire smoke and health

Wildfire season is occurring earlier and lasting longer



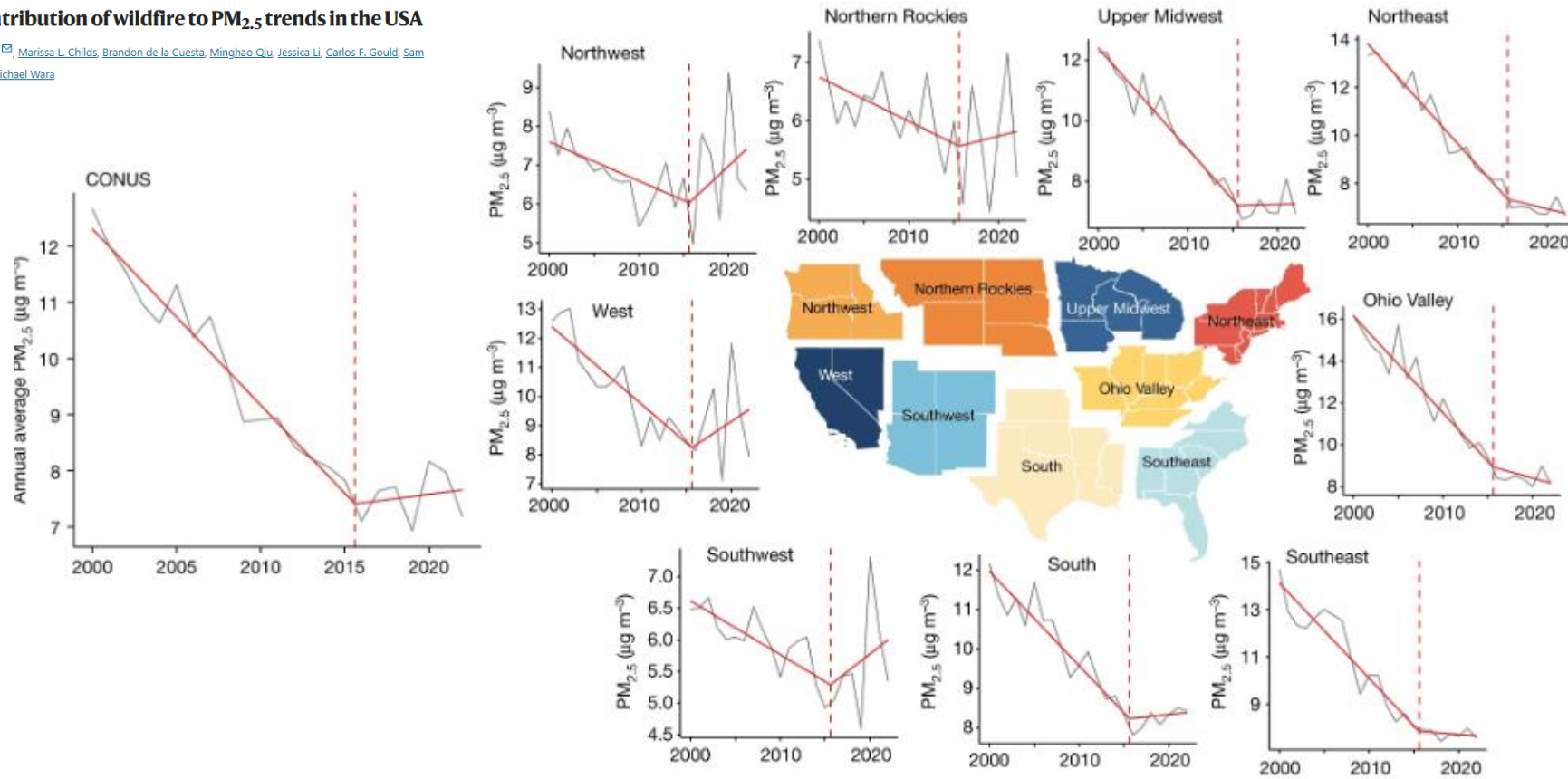
Figure 6. Comparison of Monthly Burned Area Due to Wildfires in the United States Between 1984–2000 and 2001–2017



Wildfire smoke is erasing improvements in air quality

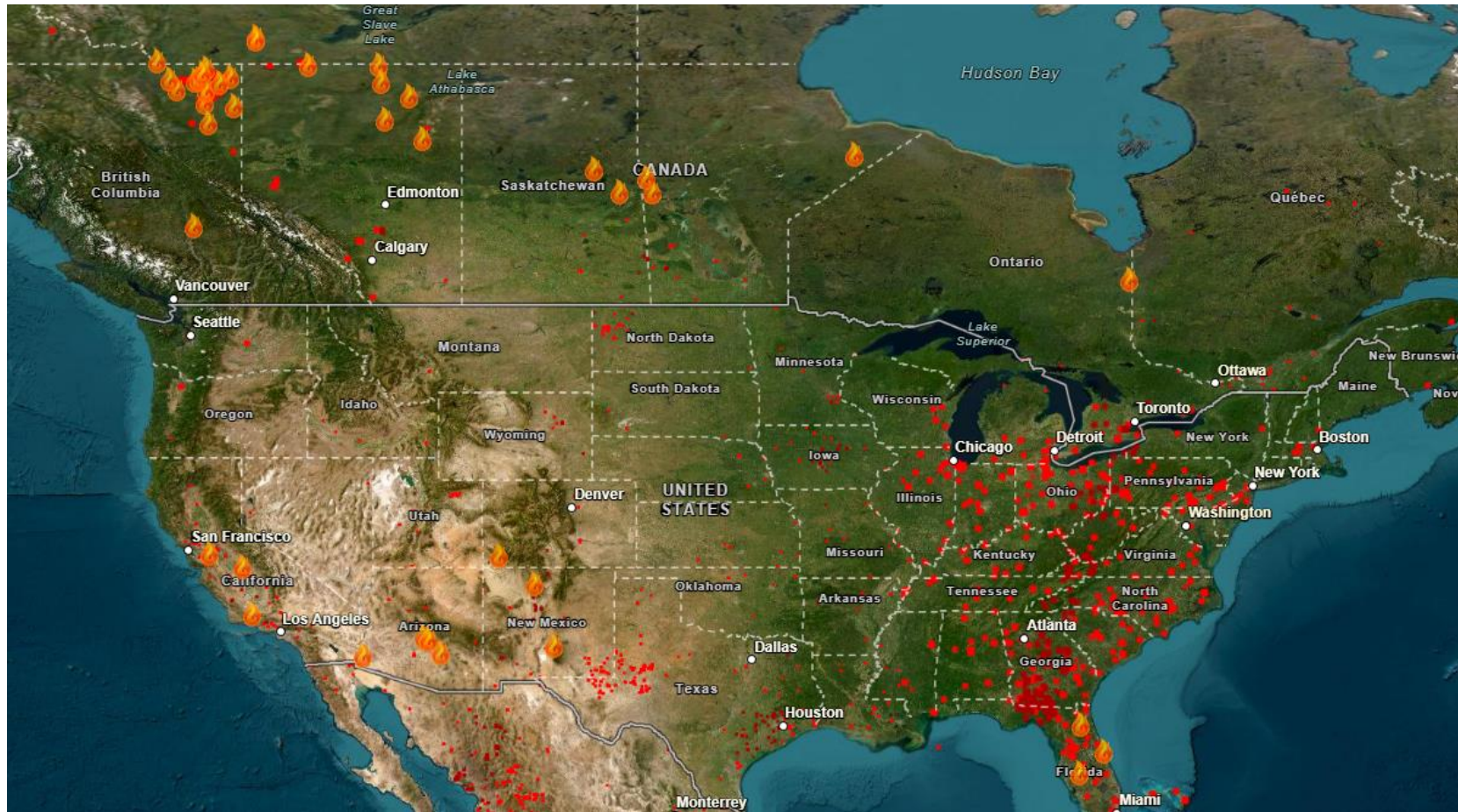
The contribution of wildfire to PM_{2.5} trends in the USA

[Marshall Burke](#), [Marissa L. Childs](#), [Brandon de la Cuesta](#), [Minghao Qiu](#), [Jessica Li](#), [Carlos F. Gould](#), [Sam Heft-Neal](#) & [Michael Wara](#)



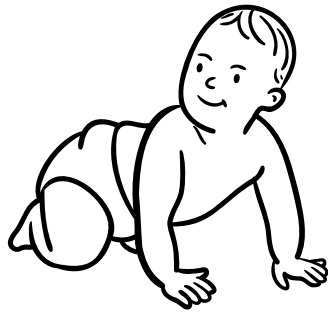
Grey lines in each subplot are annual average regional or CONUS concentrations of PM_{2.5} averaged over monitoring stations reporting consistently over the period in each US climate region^{32,33}. Regional and national averages are computed from monitoring stations reporting over 50 days per year for at least 15 years to prevent station intermittency from influencing trends. Red lines are linear fits to each region's annual average time series, with separate slopes fits or before and after the series breakpoint, denoted as the red vertical dotted line.

Wildfire smoke is impacting more of the United States

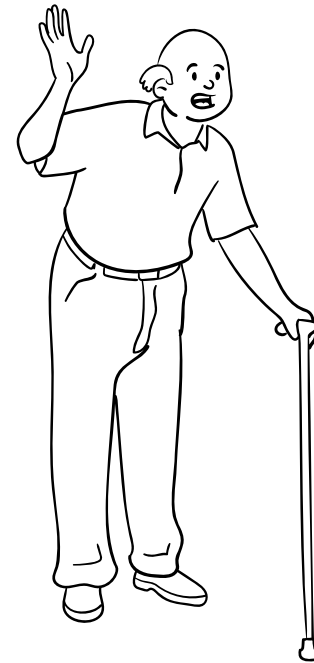


Air pollution impacts health across the lifespan

Low birth weight
Early delivery

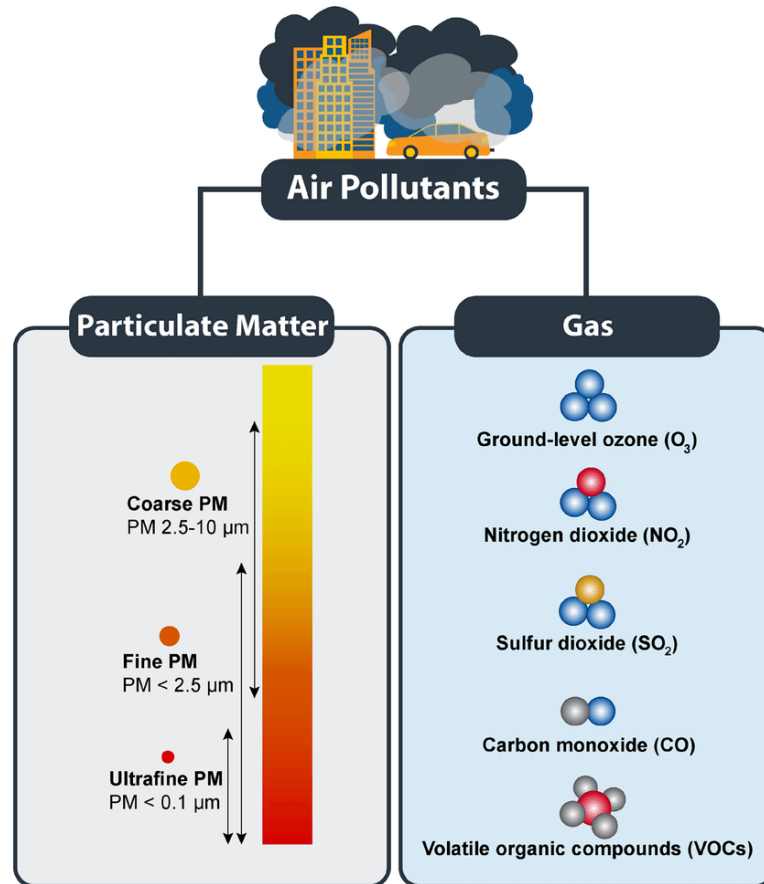


Asthma



Heart disease
Lung disease
Stroke
High blood pressure
Skin damage
Early death

What is air pollution?





How is wildfire smoke different?

- Wildfire smoke may be more harmful than normal air pollution
- Contains more carbon compounds → more oxidative stress
- Where the wildfire occurs is important
- Wildfires at the wildland urban interface are increasing
- These result in release of other toxic chemicals when furniture and housing burns

Wildfire smoke and lung health

- Short term exposure to wildfire smoke is strongly linked to breathing problems
- Impact is strongest in children, the elderly and people with pre-existing lung problems
- Children with asthma- significant increase in risk of exacerbations, rescue inhaler usage and hospital admission during wildfire events
- Wildfire smoke exposure can also impact people with pre-existing COPD
- Wildfire smoke may also increase the risk for pneumonia and acute bronchitis



Wildfire smoke and heart health

- Several studies have shown an increased risk of dying from acute cardiac events during wildfire events
- This risk may be further exacerbated by high heat
- Data about wildfire smoke exposure and risk of heart failure/heart disease hospitalization is more mixed
- People with underlying risk factors should avoid exposure to wildfire smoke where possible



How does long term exposure to wildfire smoke impact health?

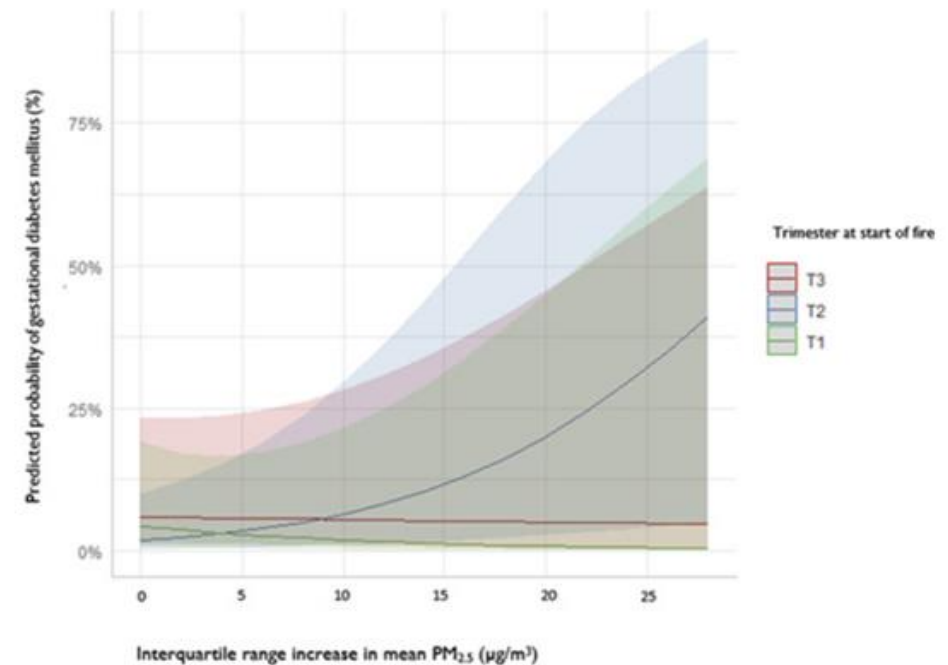
Very limited research to date

Increased risk of lung cancer and heart disease predicted in wildland fire fighters

Hard to extrapolate this data to the general population

Wildfire smoke likely impacts health from an early age

Melody et al- increased risk of gestational diabetes in women who were exposed to high levels of wildfire smoke during a 6 week period in early pregnancy.



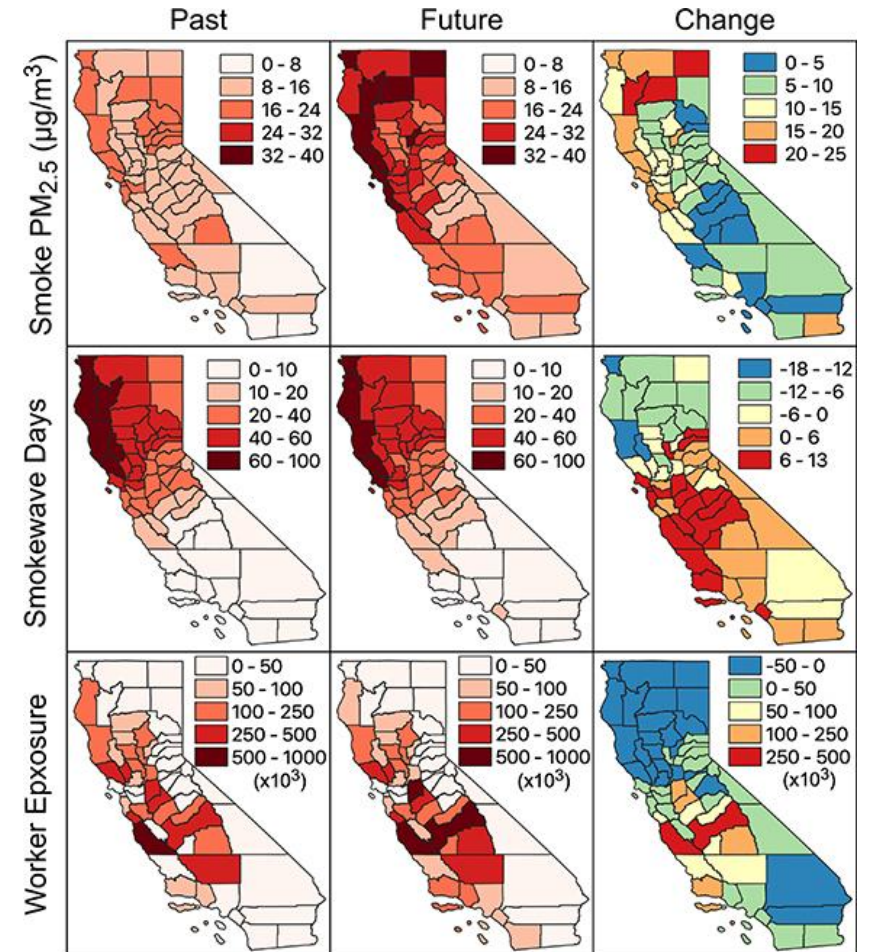
What about the health of farmworkers?

- Farmworkers may be more vulnerable to the impacts of wildfire smoke
- Often working in areas at risk for wildfires
- Physical labor
- Working outdoors
- May have other risk factors which make them more vulnerable:
 - Heat
 - Pesticide exposure
 - Dehydration
 - Underlying lung problems
 - Exposure to other air pollution



What about the health of farmworkers?

- An increasing number of farmworkers are going to be exposed to wildfire related air pollution
- The health impacts of exposure to air pollution in farmworkers is unknown.
- Prior research has shown an increased risk of respiratory symptoms in farmworkers exposed to higher levels of dust.
- Rates of underlying lung disease in farmworkers may be much higher than recognized



What can we do about it?

- We need effective policy to protect farmworkers from high smoke days
- We also need ways to actually enforce this policy
- CALOSHA wildfire standard is an important first step
 - Mandates respirator use when AQI > 500, and allows for optional respirator use above 150
- Improving housing conditions to reduce indoor smoke exposure
- Air purifiers- effective, but can be expensive



Summary

- Wildfire smoke is a major, and growing driver of air pollution
- Wildfire smoke has significant impacts on health
- Long term, repeated exposure likely worsens these impacts
- Farmworkers are at increased risk from the health complications of wildfire smoke
- We need policy and action to protect farmworkers from wildfires- both in the west coast and across the United States

Emergency Preparedness: WildFires

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San Diego Region

- The fifth most populated County in the United States
- It is located in the Southwest corner California state
- Bordered by the Pacific Ocean to the west, Imperial County to the east, the U.S.-Mexico border to the south, and Orange and Riverside counties to the north.



2007 Wildfires



- Burned 368,316 acres
- Destroyed 1,751 homes and businesses

- 8 fires
- Fire lasted 10 days



Most affected Group: Farmworkers

2007 wildfires resulted in:

- Lack of preparation for farmworker communities
- Thousands of Latino farmworkers and migrant families were neglected and impacted
 - o low wages, lack of mobility and limited access to health and social services
- Structural and institutional barriers to access to information and relief efforts
- Poverty, discrimination and anti-immigrant sentiment



VCC – Migrant Health Program

- Under Community Health Department
- **Grant funded**
- Serving farmworkers and migrant families.
- **Services:** care management, transportation, food distribution, preventative health education



EPA – 2022 award

- Funding from Office of Environmental Justice
- **Create** an emergency planning protocol for farmworkers to be delivered by Community Leaders
- Conduct emergency preparedness **trainings**
- Share best practices with CBOs to respond to an emergency



Project Pictures



Best Practices

- Engage community leaders – Trusted messengers
 - Compensate their time
- Engage local CBOs
- Conduct focus groups
 - Compensate participants
- Meet community where they are at
- Include findings from focus groups into the curriculum
- Follow up with focus group participants and engage them in the trainings
- Distribute emergency preparedness kits
- Search for sustainability of project
- Preventative health education

Preventative Health Education: Before a Wildfire

Safety measures before any disaster



Step 1: Sign up
for alerts



Step 2: Make a
plan



Step 3: Pack a
Go-Bag



Step 4: Pack a
Stay Box



Step 5: Help
others



<http://calalerts.org/signup.html>

1. Sign up for Alerts

- Sign up for free emergency alerts with county of residence or local officials
- Alerts can be sent via cell phone, home phone, email, text messages
- Tune in to local radio stations
- Get to know your neighbors



2. Make a Plan

- Back up plans for electrical medical devices and medicines and have a battery-powered radio
- Have a map and plan 3 different exit routes
- Talk to family members and make an evacuation plan
 - Choose familiar places to meet up and practice different routes to get there
 - Identify a family member outside of your county/state as point of contact
- Have a Go Bag packed with necessary items



Don't Wait, Evacuate

- Listen and watch for evacuation warnings and order
 - **Evacuation warning:** Get ready to leave
 - **Evacuation order:** leave immediately
- To find exit routes and safe shelters, call local or county authorities.
 - Public disaster shelters are free
 - No one can ask for ID



Stay Safe in a WILDFIRE

- Be prepared
- Make a Plan
- Listen to warnings
- Coordinate with family and community members
- **Share this information!**



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Reference Page

- World Health Organization
 - https://www.who.int/health-topics/wildfires#tab=tab_1
- Listos California
 - <https://www.listoscalifornia.org/>
- Department of Industrial Relations
 - https://www.dir.ca.gov/dosh/dosh_publications/N95-mask-questions.html
- Listos: DBA: Alertar y Preparar



Thank you!

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Resources



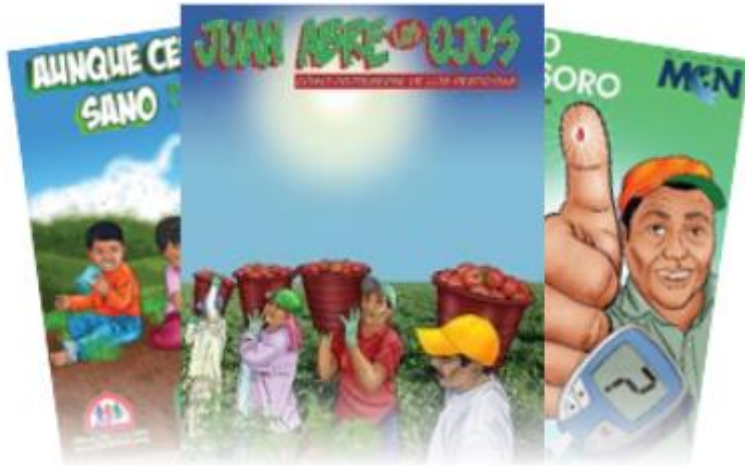


Wildfires



Wildfires and their resulting smoke harm agricultural workers and other outdoor workers disproportionately. In California, we have seen countless instances of farmworkers in the fields surrounded by smoke as they work, but this crisis is expanding across the United States. [According to the EPA](#), "the extent of area burned by wildfires each year appears to have increased since the 1980s. According to National Interagency Fire Center data, of the 10 years with the largest acreage burned, all have occurred since 2004, including the peak year in 2015." Climate change, its resulting heat, and dry weather have increased the frequency and the range of wildfires. In 2023, we saw smoke blanket the east coast in levels unprecedented for the region. The dangers of smoke and wildfires are known. Smoke can cause serious damage to people's lungs and

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