

Lessons from the L.A. Fires

The REBUILD Survey and More

November 12, 2025

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***Webinar Series: Caring for Our Trees, People, and
Communities: Post-Fire Urban Forestry in Southern California***



**COUNCIL FOR
WATERSHED HEALTH**



Property owner experiences and needs after disasters are numerous

Evacuation and housing
Health impacts and needs

Property damage, environmental testing and remediation

Insurance interactions

Trust, rebuilding actions, gardening, and more...

Resilience:

The ability to bounce back from misfortune and change

Some of our prior community support efforts:

2023 East Palestine Chemical Disaster, Ohio

2023 Lahaina and Kula Fires, Hawaii

2022 Eastern Kentucky Flood, Kentucky

2021 Marshall Fire, Colorado

2020 Almeda Fire, Oregon

2018 Camp Fire, California

2014 MCHM Chemical Disaster, West Virginia



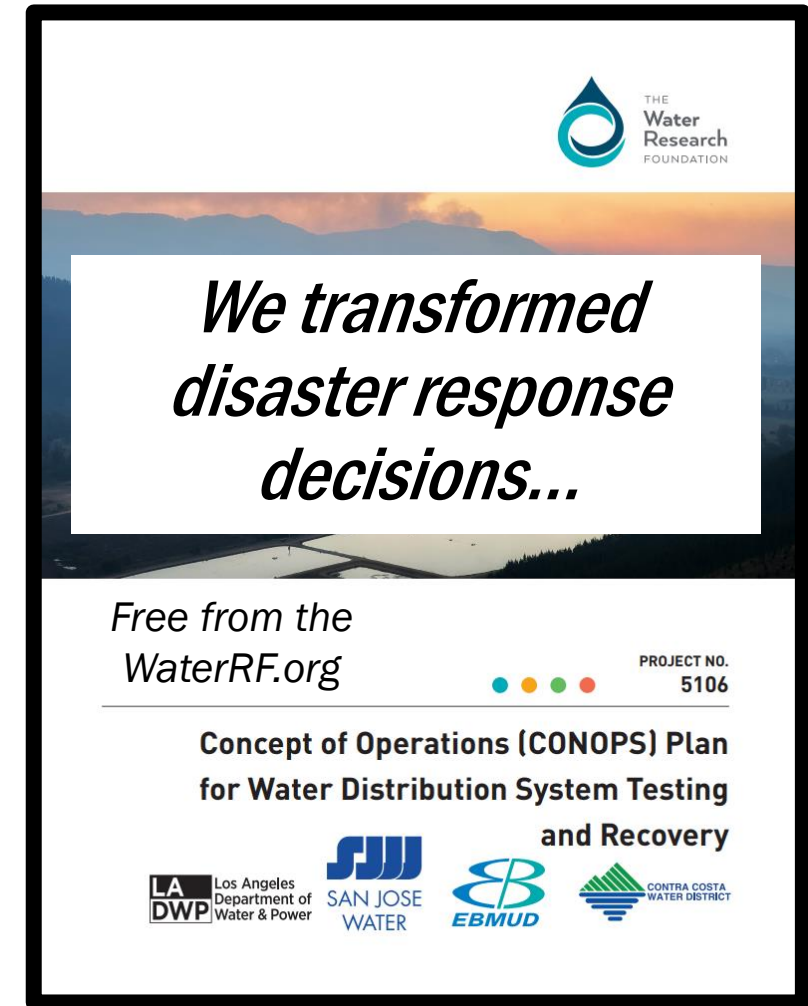
PSA: 2024 Playbook for water utility decision-making for wildfire

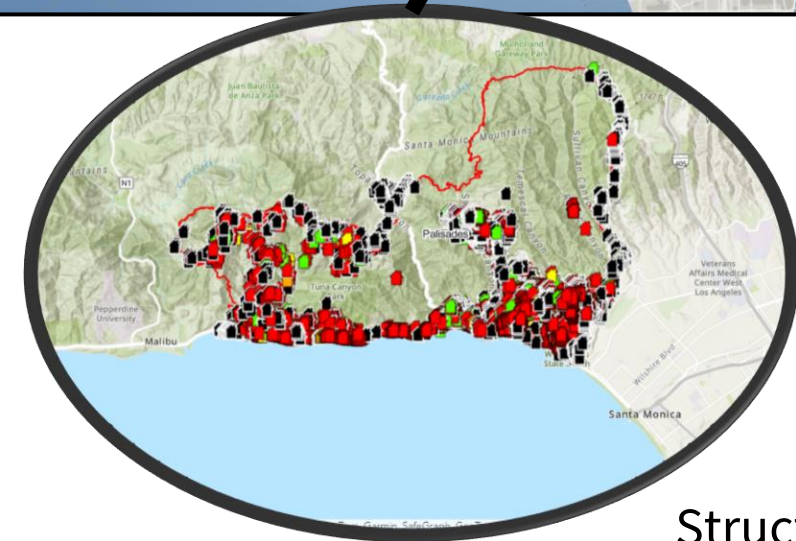
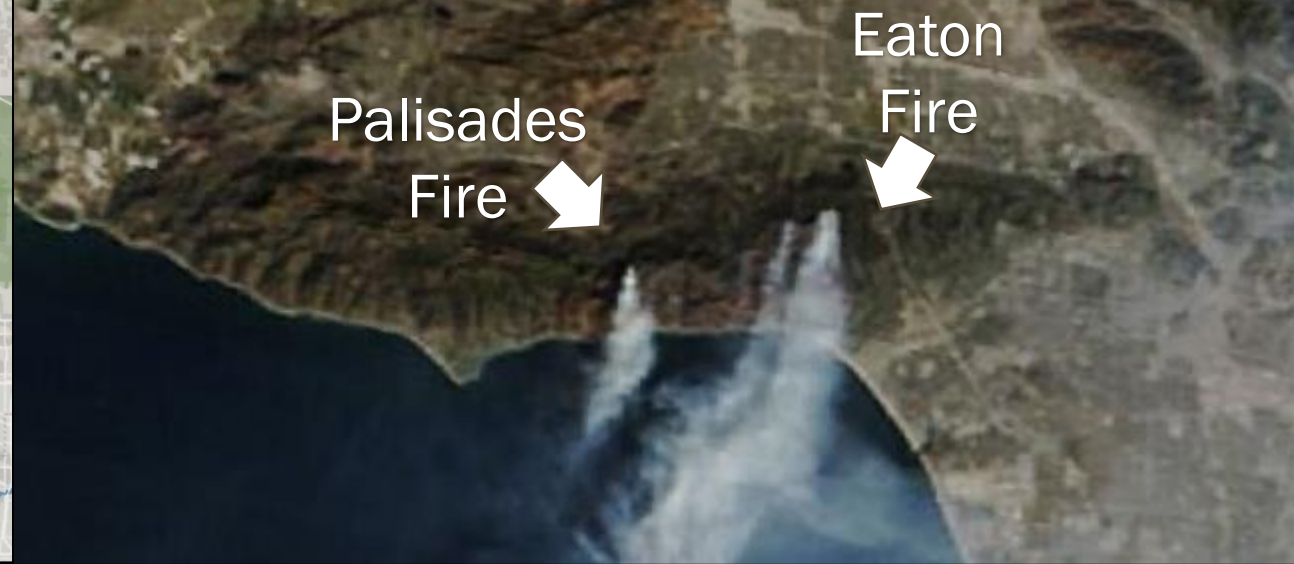
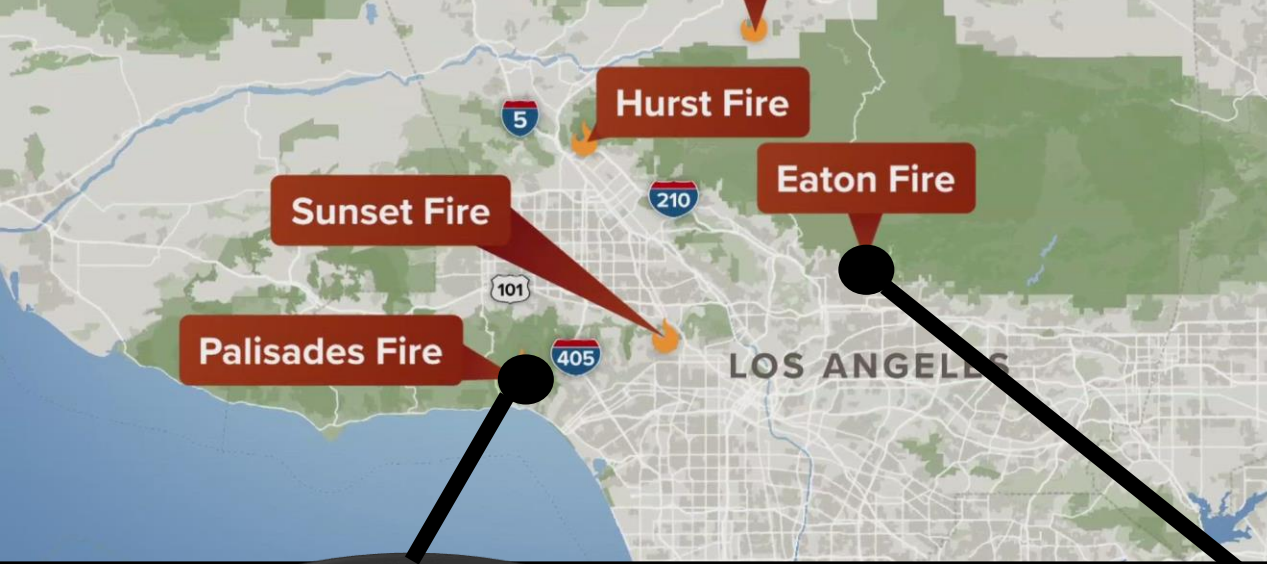
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11. Decision-making considerations using results
12. Communication and general questions

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- A. Example return to service plan
- B. CDC guidance about water advisories
- C. Target chemicals for water sampling
- D. Water sampling SOPs
- E. Example FAQs
- F. Guidance about water testing reports for the general public

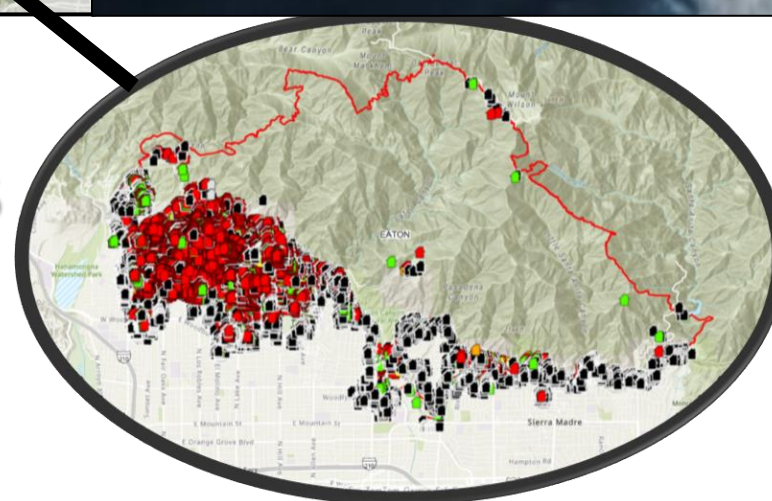




Palisades Fire

23,707 acres
12 Fatalities

Structures Destroyed = 6,833
Structures Damaged = 973



Eaton Fire

14,021 acres
18 Fatalities

Structures Destroyed = 9,418
Structures Damaged = 1,073

180,000+ people were under evacuation, 1.4% of L.A. County was burned.

NEWS RELEASE



313 N. Figueroa Street, Room 806 | Los Angeles, CA 90012 | [\(213\) 288-8144](tel:(213)288-8144) | media@ph.lacounty.gov

For Immediate Release:

February 11, 2025

Public Health Advisory Noted for Those Residing Near Burned Structures in Palisades and Eaton Areas

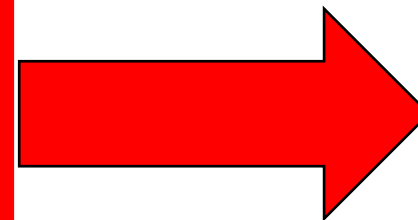
The Los Angeles County Department of Public Health is reminding residents about the dangers associated with fire debris and issuing a **Public Health Advisory** for individuals residing within **250 yards of a burned structure or parcel** within or near the **Palisades and Eaton burn areas**.

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Residents in these areas may face an increased risk of exposure to hazardous substances from ash, soot, and fire debris before the completion of **Phase 1 (hazardous materials removal)** and **Phase 2 (fire debris removal)**. Exposure to these materials may lead to **physical health symptoms** ([American Chemical Society, EST Air, 2025, 2, 13-23](#)) and may pose long-term health impacts.

Fire debris from burned structures can contain a variety of harmful substances, including:

- **Asbestos** from older building materials
- **Heavy metals like lead**
- **Hazardous chemicals** from household products
- **Fine particulate matter** created by the fire

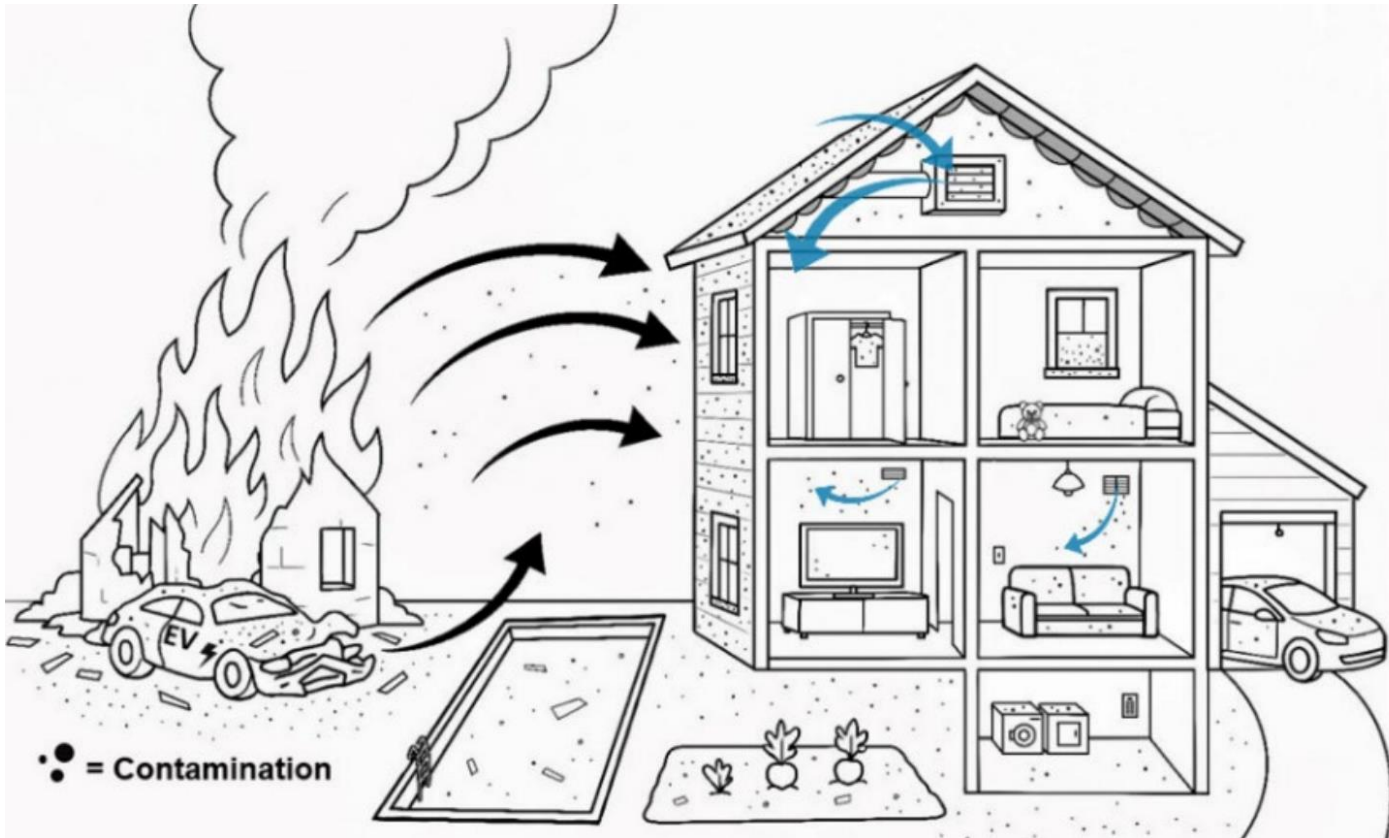


Explicit warning:

- **Asbestos**
- **Heavy metals like lead**
- **Particulate**

Strong winds and weather fluctuations may **increase both the exposure risk and the affected distance**.

Fires can physically and chemically damage infrastructure and the environment



Whelton, Bollens, Ferrarezzi (2025).

Access FREE here → <https://docs.lib.purdue.edu/red/1/>

Damage

Physical damage

Contamination damage

- Chemical
- Microbiological

Risks

- Occupational safety
- Public safety
- Environmental

Should I worry about debris blowing from next door?

Utility Co. interactions

Are my fruit trees contaminated?

Is my plumbing contaminated?

What PPE do I need to wear when I visit my home? Or go outside?

Why won't FEMA give me \$?

Can my family and my pets use my drinking water normally?

Is my soil contaminated?

What is a Disaster Recovery Center?

What will my insurance company do?

What is a Right of Entry (ROE) form?

Am I remediating correctly?

Why is the media gone?

Where do I get emergency drinking water?

Why won't people remove debris from my property?

Building Dept. interactions

Is my garden safe?

Who makes property cleanup decisions?

Where are checkpoints and re-entry permits?

Should I throw away my "soft goods"?

Is the daycare or school safe?

Can I eat fruit from my trees?

Is my HVAC system contaminated?

How do I clean my pool/spa?

Do I have enough \$ to repair or rebuild?

Did my contractors test correctly?

How do I keep my pets safe?

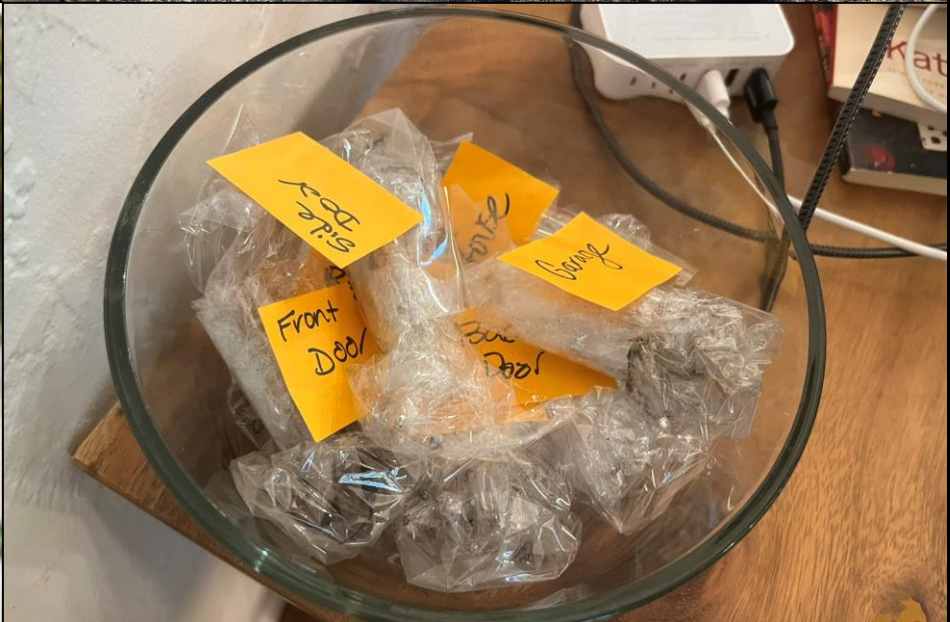
Can I restore my garden?

Will or when will the power company cut my trees?





1st Onsite Investigation: February 3-14, 2025



Los Angeles **LA DWP** Department of Water & Power



DO NOT DRINK THE TAP WATER

Pacific Palisades, Zip Code 90272 and LADWP customers in portions of zip code 90402 north of San Vicente Bl.

Tap water is unsafe for consumption due to potential fire-related contaminants

DO NOT use tap water for:

- Drinking
- Cooking
- Making ice or preparing food

USE ONLY bottled water for these activities.
DO NOT try to treat the water yourself.

Precautions:

- Limit use of hot water
- Avoid using clothes dryers
- Use air dry setting for dishwashers

For full list of details scan the QR code



Questions? Call LADWP at 1-800-DIAL-DWP

San' Ballast System





Swimming Pools After a Fire

Take Precautions. Be Safe. Protect Your Health.

The following guidelines are recommended for the maintenance of pools that were impacted by smoke and ash.

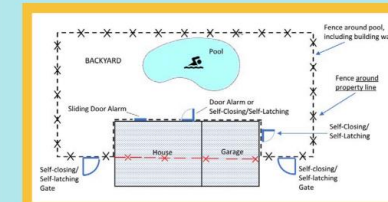
Do not use pool until the following steps have been completed:

- Clean the skimmer baskets of debris and skim water surface of the pool with a pool net to remove floating debris.
- Brush the sides and the bottom of pool to loosen contaminants, then vacuum pool.
- Backwash and clean the filter(s). Release waste and wastewater into a **municipal sanitary sewer only**. If connected to a septic tank system, release the backwash to a pervious surface like gravel, lawn, or open space to allow for infiltration without erosion.
Backwashing into the storm drain system (alleys, driveways, streets, storm drains) and creeks is prohibited by law.
- Check pH and adjust level between **7.2 and 8.0**.
- Check free chlorine level and adjust level to a minimum of **2.0 ppm for a pool and 3.0 ppm for a spa**.
- Ensure the recirculation system is operating properly by checking filter pressure and/or the flow meter.
- Reopen pool only when pH levels are between **7.2 to 8.0** and the free chlorine is at a minimum of **2.0 ppm for a pool and 3.0 ppm for a spa**.

Swimming Pool Fencing

Pool and spa enclosures can be damaged by fires. Swimming pools and spas must be enclosed with a protective fence to prevent drowning, injuries, or other risks:

- The enclosure must be **at least 60 inches** in height above grade.
- Gaps should not exceed **4 inches** to prevent access by small children.
- Gates and entrances should be self-closing and self-latching.



Mosquito Breeding

An unkept pool or spa results in stagnant water, making it a breeding ground for mosquitoes to lay eggs that can produce **thousands of mosquitoes** in just a few weeks. Mosquitoes can spread serious diseases, such as West Nile Virus and Zika Virus.



It is important to prevent mosquito breeding conditions to stop diseases. **Reminder:** Under the California Health and Safety Codes, homeowners are responsible for preventing and eliminating any mosquito breeding on their property.

It is not necessary to empty the pool.

Instead, use the following preventive measures to control mosquito breeding in vacant swimming pools or spas:

1. **Mosquito dunks**— a donut shaped solid item put in the swimming pool water to kill mosquito larvae and can be purchased at any hardware or garden shop.
2. **Mosquito fish**— are small fish that eat mosquito larvae. If mosquito fish are used, chemicals (such as chlorine) cannot be in or added to the water.

For mosquito fish, treatment and further assistance, please contact your **local Mosquito Abatement District**.



COUNTY OF LOS ANGELES
Public Health

LA County Recovers



Eaton Area Mosquito Control Support



Image: E. Bollens

Ocean Water Closure and Advisory in Fire Impacted

Areas Remains

January 30, 2025

All Other LA County Ocean Waters Advisories Lifted

Due to the increase in fire debris along these ocean waters, the Ocean Water Closure for Las Flores State Beach to Santa Monica State Beach remains in place, as fire debris runoff and pollutants in the water may contain toxic or carcinogenic chemicals. Beach users should avoid water and stay away from fire debris or heavy ash on the sand.

01-15-2025 | PREMIUM

Pollution from the L.A. fires could linger inside homes for weeks

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No
Data!

*“Throw away your soft goods” vs. do not do that
“Odor is not a health risk”, only ash and debris
“If the item doesn’t smell it is safe for use”*

Some indoor Pb and As levels > 6,000 ug/sqft !!



Soil, Fruit, and Garden Safety

Sharps, combustion byproducts, metals
PFAS, microplastics, and more...



Table 1. Summary of past wildfires, debris removal, and soil testing metal contaminant results after wildfires

Year/ Fire	Declared a Fed. Disaster ?	Structures ^{1,2} Destroyed per CalFire or the State of Hawaii	Responsible Agency for Cleanup	Parcels in Gov. Cleanup Program (Not private debris removal)	Parcels Passed Testing w/o Rescraping	Parcels Failing 1st Soil Testing	Percent Parcel Fail Sampling Rate	Typical 1st Soil Scrape Depth (in.)	Metals Causing Failure (Primary metals in bold)	Parcels Failing 2nd Soil Testing	Percent Fail Rate	Contaminants Causing Failure
2017 Detwiler Fire	No	134	CalRecycle	133	66	35	26%	3/10 or 3.6	As, Pb, Co, Cd, Hg	11	8%	unclear
2017 Wind Complex Fire	Yes	317	CalRecycle	254	170	51	20%	3/10 or 3.6	As, Pb, Co, Hg	26	10%	unclear
2017 Tubbs (North Bay) Fire	Yes	5,636	U.S. ACOE	4,563	unclear	unclear	unclear	6 in.	unclear	unclear	unclear	unclear
2017 Thomas Fire	Yes	1,063	CalRecycle	670	519	109	16%	3/10 or 3.6	As, Pb, Hg, Cd, V, Co, Cu, Sb	14	2%	unclear
2018 Woolsey Fire	Yes	1,643	CalRecycle	1,666	1,252	414	25%	3/10 or 3.6	Cd, Co, As, Pb, Hg, Cr, Sb, Zn	98	6%	unclear
2018 Camp Fire	Yes	18,804	CalRecycle	10,907	8,192	3,496	32%	3/10 or 3.6	Pb, As, Co, Hg, Ni, Cu, Cd, Sb, Zn	655	6%	unclear
2023 Lahaina Fire	Yes	2,207	U.S. ACOE	1,549	unclear	unclear	unclear	6	unclear	unclear	unclear	unclear
2023 Kula Fire	Yes	23	U.S. ACOE	23	unclear	unclear	unclear	6	unclear	unclear	unclear	unclear
2024 Mtn View Fire	No	243	County of Ventura	133	98	35	26%	3/10 or 3.6	unclear	9	7%	N/A

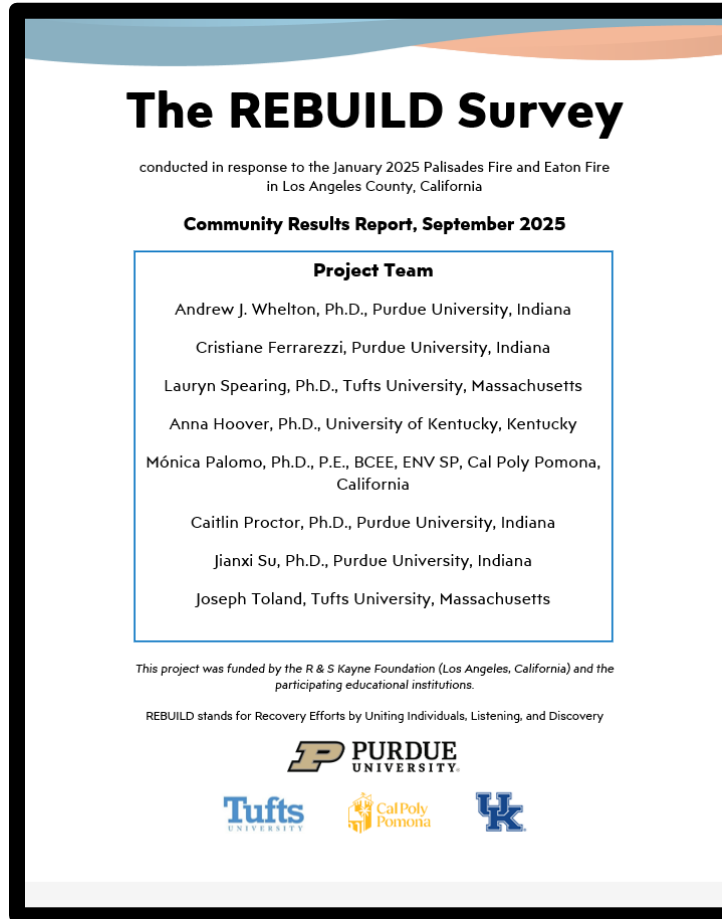
U.S. ACOE = U.S. Army Corps of Engineers; CalRecycle = State of California government agency; Unclear = Could not find evidence to support these results; ¹ Number of structures destroyed, and parcels remediated are not equal. The preliminary destroyed structural numbers gathered just after the fire have an error rate of ± 5 to 15%, whereas remediated parcels have a right to enter (ROE) form signed by an owner; ² "Structures" include homes, outbuildings (barns, garages, sheds, chicken coops, etc.), and commercial properties destroyed; The number of parcels that declined participation in the government cleanup program and their soil testing results were not found.

Our REBUILD Household Survey:

Recovery Efforts by Uniting Individuals, Listening, and Discovery (REBUILD)

Our Study Goal:

To better understand household attitudes, experiences, and needs so that community and elected leaders can better address gaps pertaining to health, economic security, and rebuilding.



September 2025

Household Impacts
Evacuation & Displacement
Property Impacts
Environmental Safety
Concerns
Mental Health Impacts
Property Testing &
Remediation
Trust & Looking to the
Future
Insurance & Rebuilding

Access free report here → <https://docs.lib.purdue.edu/red/2/>

Some Major Events and Survey Design

Jan. 7-31, 2025: Eaton and Palisades Fires started and contained

Jan. 2025: Briefed water utilities and helped LA county public works with stormwater

Feb. 3-14, 2025: First onsite LA area household support visits

April 2025: Briefed LA County DPH about historical post-fire soil sampling practices

April-June 2025: Deployed online Qualtrics household survey

- ❖ English and Spanish versions
- ❖ Adult participants, 18 years or older, own or rent
- ❖ Some optional questions

July 2025: Briefed LA County DPH

Sept. 2025: Early REBUILD survey results publicly shared

Oct. 2025: Household sampling and testing guidance issued

Sept.-Oct. 2025: Webinar series: Pools, soil, mental health, and more

October 2025: Briefed California Dept. of Insurance

↓ More ↓

2025 Los Angeles Fires
Public Health Response -
Purdue University



Who responded to the survey?

1,229 verified responses: 37.9% Palisades Fire vs. 62.1% Eaton Fire

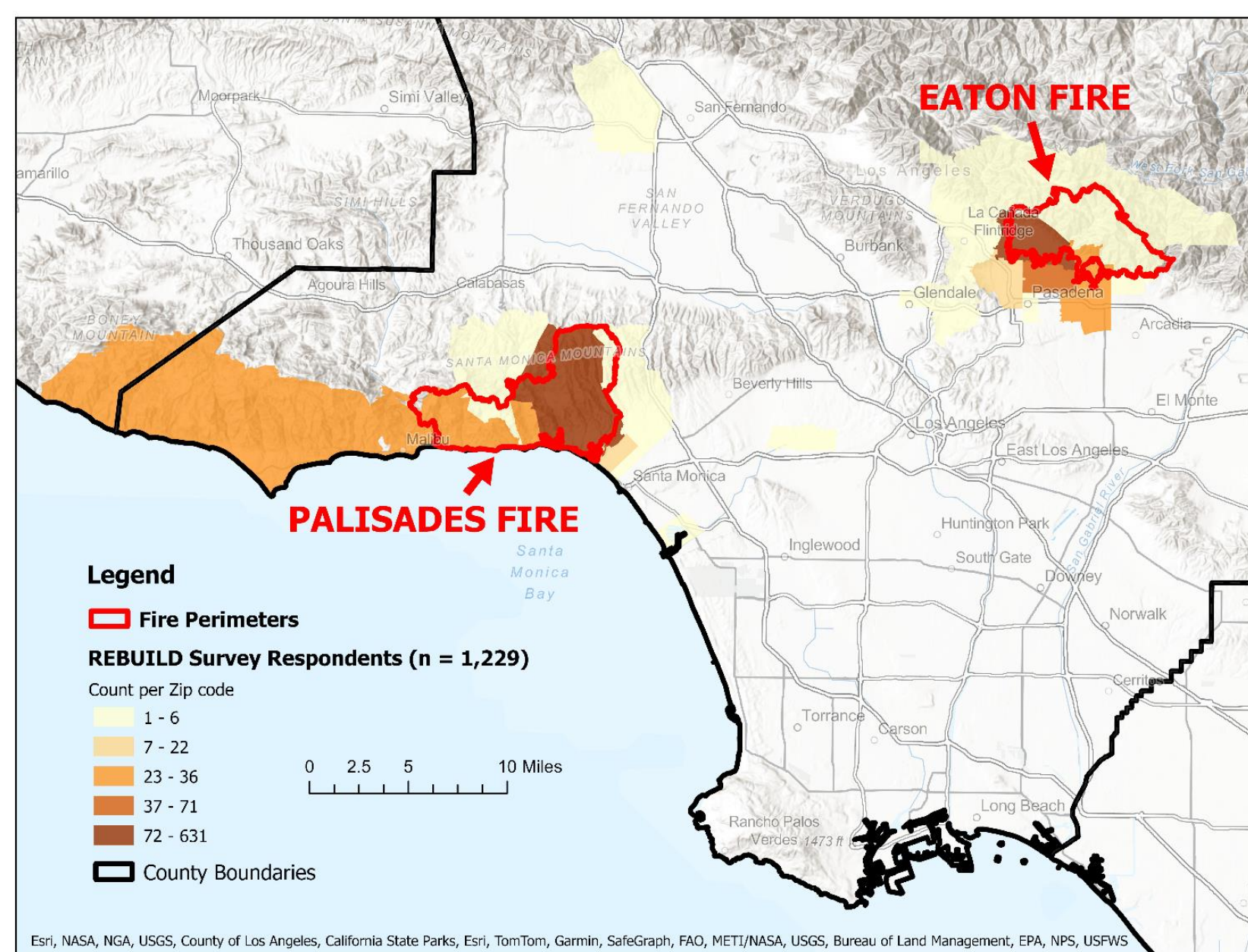
Male: 29 to 35 %

Female: 63 to 69 %

Race	Palisades Fire (%)	Eaton Fire (%)
Black	0	5
Asian	8	8
White	85	71
Latina/o	1	3
Multiple races	7	13

Education	Palisades Fire (%)	Eaton Fire (%)
Some high school or less	0	0
High school diploma or GED	1	1
Some college, but no degree	5	5
Associates or technical degree	1	4
Bachelor's degree	30	34
Graduate or professional degree	63	56
Prefer not to say	1	1

U.S. Census	Palisades	Altadena
Female	53%	52%
White	82%	47%
Bachelor's degree or higher	79%	52%



When mapped by
zipcode, most
households lived
INSIDE a fire
perimeter

94.2 %
Palisades Fire
VS.

73.4 %
Eaton Fire

n = 1,226

Who responded to the survey?

Nearly all households had insurance before the fires

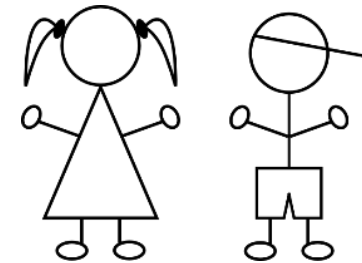
98.8 % Palisades vs. **99.0 %** Eaton Fires (n= 924)

About two-thirds of the households had pets, which is similar to the 66% 2023 U.S. national average reported by the American Pet Products Association.

60.5 % Palisades vs. **69.5 %** Eaton Fires (n= 1,206)

Less than half of the households had children, which is similar to the 2024 U.S. Census national average of 39%.

35.2 % Palisades vs. **41.1 %** Eaton Fires (n= 973)

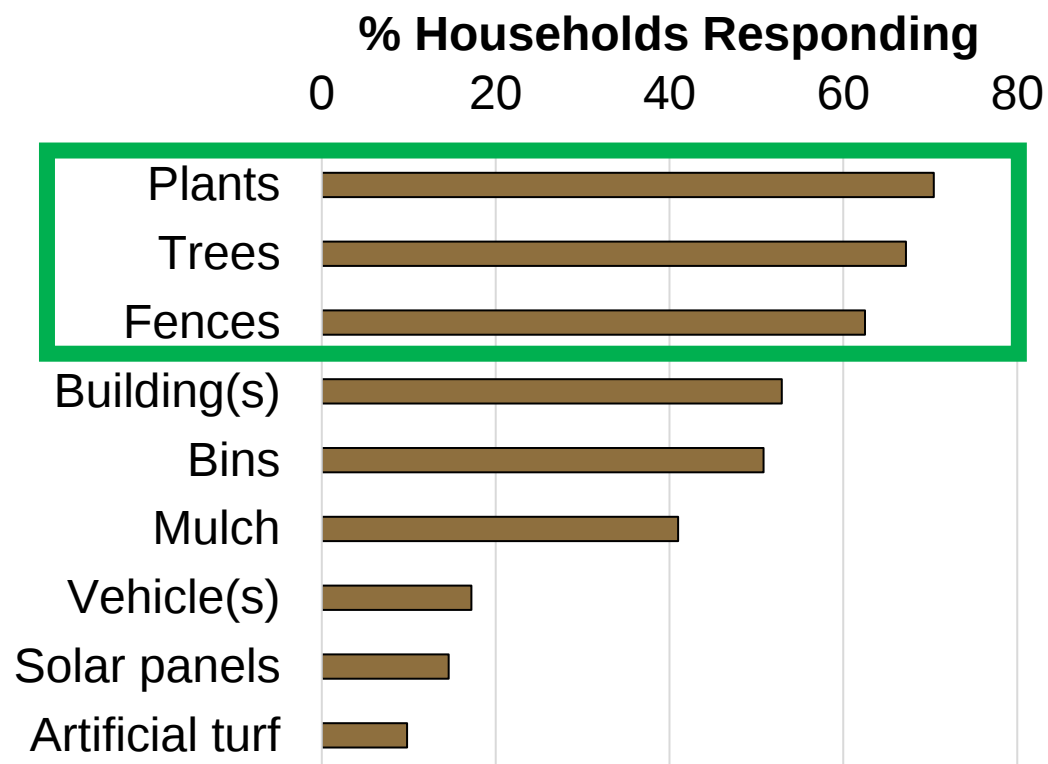


Property Impacts

Condition of Home	Palisades Fire (%)	Eaton Fire (%)
Burned and fully destroyed	45.9	42.8
Partially burned, not destroyed	13.1	9.8
Not burned, not destroyed	41.0	47.4

n= 1,229

Exterior Property Items that
Burned or Melted



n= 523

Environmental Safety Concerns

Status of drinking
water safety
advisories 4-6
months after the
fires

Response	Palisades Fire (%)	Eaton Fire (%)
Yes, advisory was still in place	8.2	5.9
Yes, but advisory no longer in place	68.6	70.5
No	9.8	11.9
Other	13.4	11.7

n= 1,118

Uncertainty about Environmental Safety

Many of the households believed they had experienced anxiety, stress, or depression associated with damage to...

Response	Palisades Fire (%)	Eaton Fire (%)
Outdoor air	75.4	84.0
Soil	72.9	84.9
Indoor air	68.7	74.6
Natural places like parks, hiking spots	70.4	77.3
Drinking water	51.2	60.3

n= 1,073

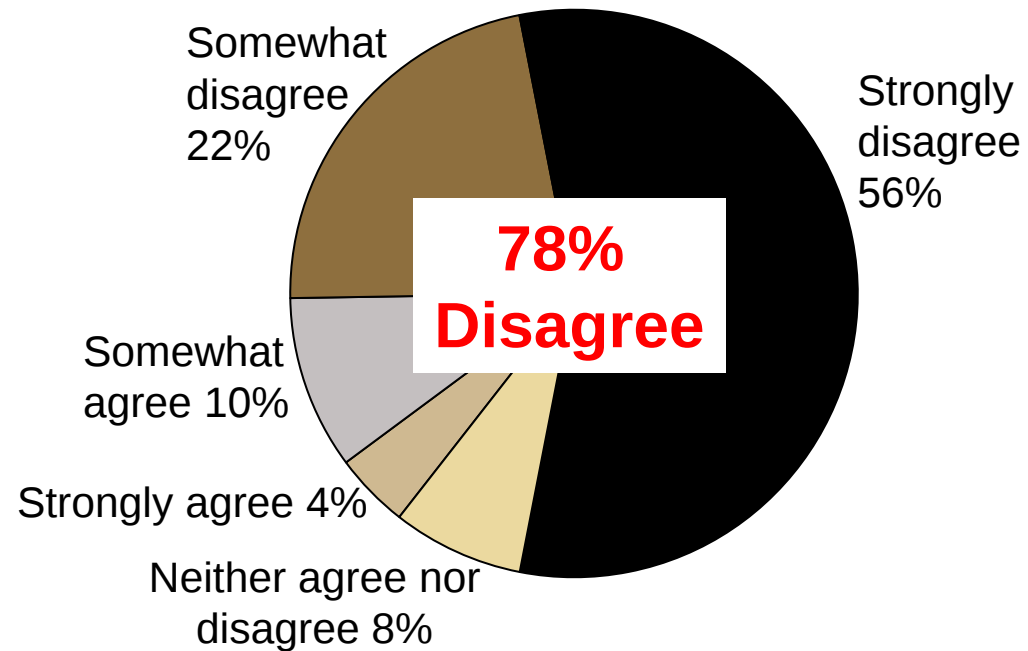
More than three of every four households were concerned that debris removal pollution would affect the safety of schools (n= 1,073)

Concern for Pet Safety and Mental Health



“ I am confident that it is safe for my pets to go on a walk or play in the yard around my home. ”

– The REBUILD Survey



n= 681

Property Testing and Insurance

“ Was environmental testing conducted on your property for fire-related contamination? – The REBUILD Survey n= 1,073 ”

Palisades Fire

44% Yes

39% No, but want it

11% No

6% Not sure

Eaton Fire

36% Yes

49% No, but want it

9% No

6% Not sure

***Policyholders
wanted testing, but
were not getting it***

“ Do you believe your insurance company will provide you enough money to rebuild your home to what it was before the fire? – The REBUILD Survey n= 541 ”

***Policyholders were
financially stressed***

Palisades Fire

20.5%

Eaton Fire

17.8%

Property Remediation

Respondents explained what was done with a variety of their household items

Clothing	Pet bedding or pet crate
Pillows	Children's plastic toys
Mattresses	Electronics
Stuffed animals	Appliances
Window blinds	Fruit from outdoor plants
Carpets	Fruit from indoor plants
Rugs	Other
HVAC filter	

Most common actions:

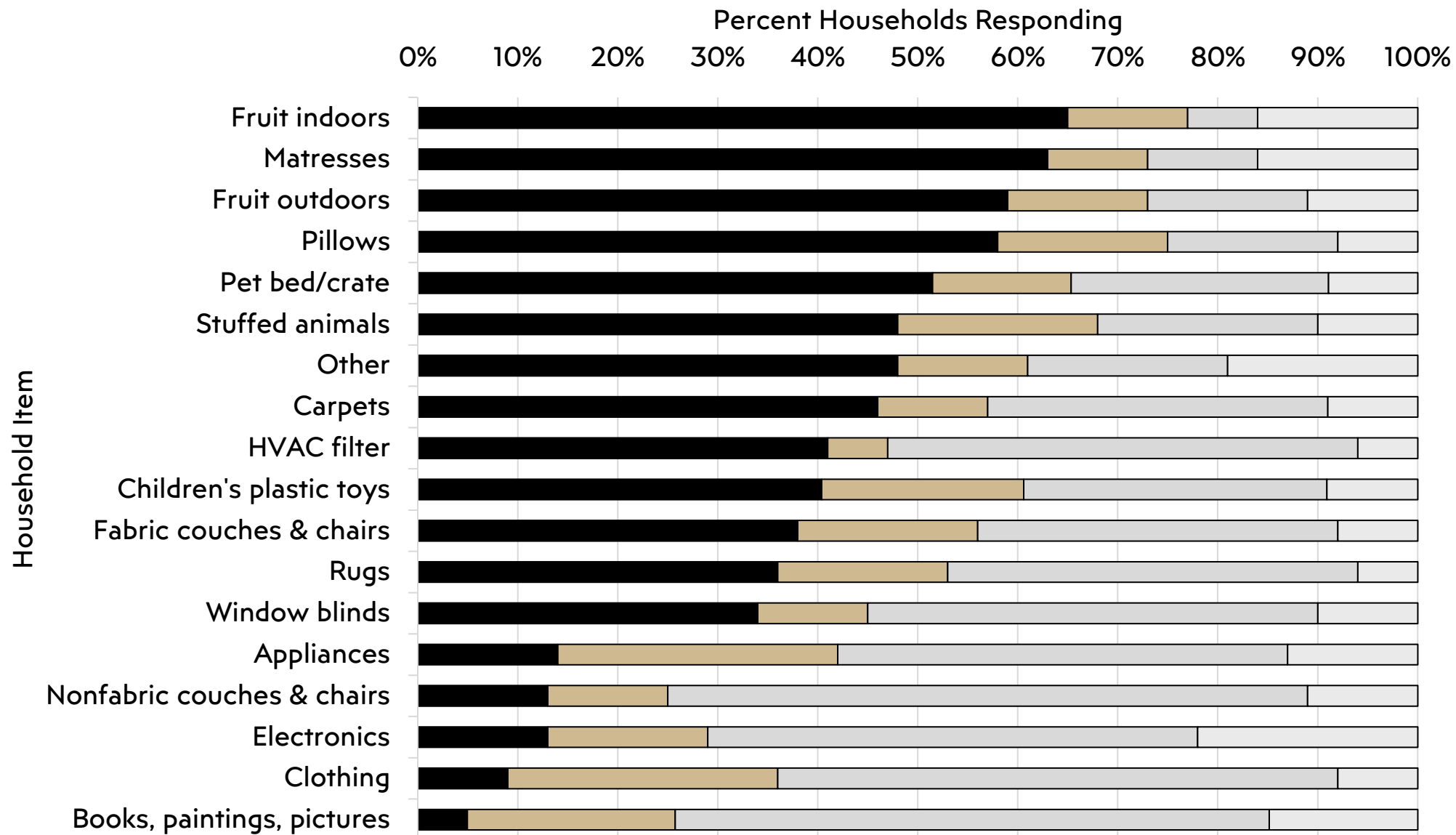
Discarded pillows, mattresses and fruit

Cleaned clothing, and appliances

n= 524



■ Discarded all ■ Discarded some ■ Cleaned ■ Used normally

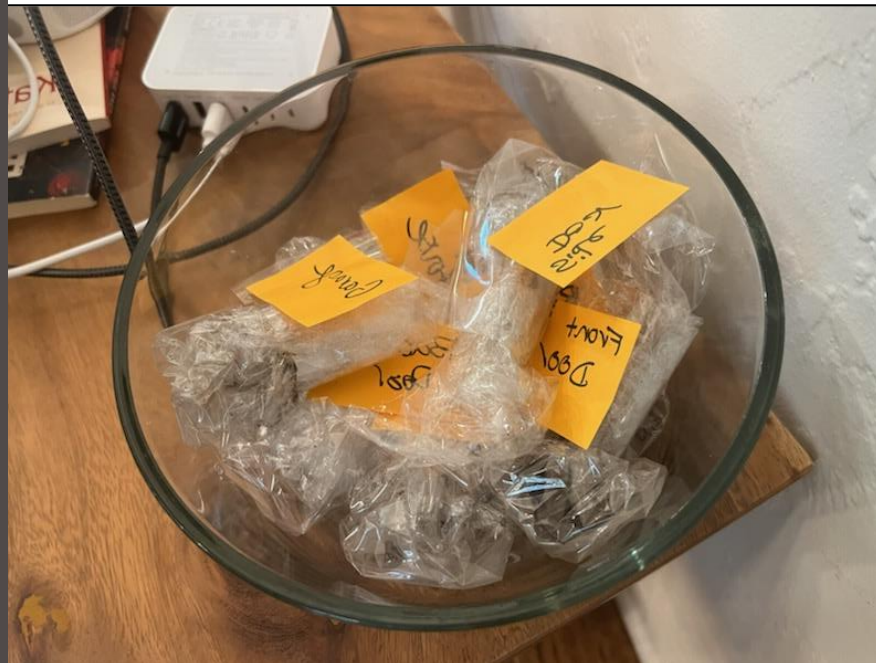


Environmental Test Result Study for Households Impacted by the 2025 Eaton Fire and Palisades Fire

Andrew Whelton, Ph.D., Cristiane Ferrarezzi

Created as a direct result of households asking for assistance navigating the complexity of home environmental testing and guidance provided by contractors.

- Households can participate and upload their reports here: **Home Environmental Test Result Study**.
- Results are being compiled, anonymized, and summarized. We are individually interacting with households about their reports and company experiences.



Lessons from the L.A. Fires

The REBUILD Survey and More

Thank you

Andrew Whelton, PhD

awhelton@purdue.edu

Additional guidance and
results can be found at
www.PlumbingSafety.org

