



# SMOKE SIGNALS:

HOW HOME PERFORMANCE BUSINESSES  
CAN SEIZE THE OPPORTUNITY OF FOREST  
FIRE EVENTS

**Peter Troast, Founder & CEO**

June 21, 2023

## What We'll Discuss

- 1 THE WORST US AIR QUALITY IN RECORDED HISTORY, BUT WHAT DO HOMEOWNER'S UNDERSTAND?**
- 2 WHAT ABOUT THE BUILDING SCIENCE?**
- 3 STRATEGIES FOR POSITIONING YOUR COMPANY AS THE TRUSTED RESOURCE & SEIZING THE OPPORTUNITY**



# Ongoing Focus on the Implications of AI

## Future Webinars

- Customer Journey & Evolution of Search
- AI Chat for Your Website
- Website “Optimization” for Language Models
- Continued Testing of Virtual Assistant
- and More



## THINKING ABOUT AI IN HVAC & HOME PERFORMANCE:

VIRTUAL ASSISTANT'S IN THE FIELD  
FOR COMPLEX BUILDING SCIENCE

Peter Troast, Founder & CEO



## WEB SEARCH IN A WORLD OF AI:

WHAT WILL CHANGE FOR CONTRACTORS  
AND THE CUSTOMER JOURNEY?

Peter Troast, Founder & CEO

May 10, 2023



# BUILDING SCIENCE & GOVERNMENT RECOMMENDATIONS



# The Building Science

**ENVIRONMENTAL RESEARCH HEALTH**

PAPER • OPEN ACCESS

2775 Total downloads

Outside in: the relationship between indoor and outdoor particulate air quality during wildfire smoke events in western US cities

Katelyn O'Dell<sup>5,1,2</sup> , Bonne Ford<sup>1</sup> , Jess  
Susan C Anenberg<sup>2</sup> , Jude Bayham<sup>3</sup>, Em  
Published 1 November 2022 • © 2022 The Auth  
[Environmental Research: Health, Volume 1, Num](#)  
Citation Katelyn O'Dell et al 2023 Environ. Res.:  
DOI 10.1088/2752-5309/ac7d69

 Article PDF

Figures ▾ References ▾ Open scienc

[+ Article and author information](#)

**Abstract**

Previous research on the health and air qua  
impact of smoke on outdoor air quality; hov  
The quality of indoor air on smoke-impacte  
publicly available data from an existing lev

Aerosol and Air Quality Research ABOUT ▾ ARTICLE ▾ AUTHOR ▾ REVIEWER SUBMIT CONT

**Impact of Wildfire Smoke Events on Indoor Air Quality and Evaluation of a Low-cost Filtration Method**

2021 - Volume 21 Volume 21, Issue 7, July 2021 12 May 2021 Reach: 10712

[Air Pollution and Health Effects](#) [Technical Notes](#)

**Nathaniel W. May** <sup>1</sup>, **Clara Dixon**<sup>1</sup>,  
**Daniel A. Jaffe**<sup>1,2</sup>

[+ Show author affiliations](#)

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**PNAS**

RESEARCH ARTICLE | ENVIRONMENTAL SCIENCES | 

**Wildfire smoke impacts on indoor air quality assessed using crowdsourced data in California**

[Yutong Liang](#) , [Deep Sengupta](#) , [Mark J. Campmier](#) , [+2](#), and [Allen H. Goldstein](#)  [Authors Info & Affiliations](#)

Edited by Daniel A. Jaffe, University of Washington, Bothell, WA, and accepted by Editorial Board Member Akkhebbal R. Ravishankara July 31, 2021 (received for review April 5, 2021)

August 31, 2021 | 118 (36) e2106478118 | <https://doi.org/10.1073/pnas.2106478118>

**THIS ARTICLE HAS BEEN UPDATED**

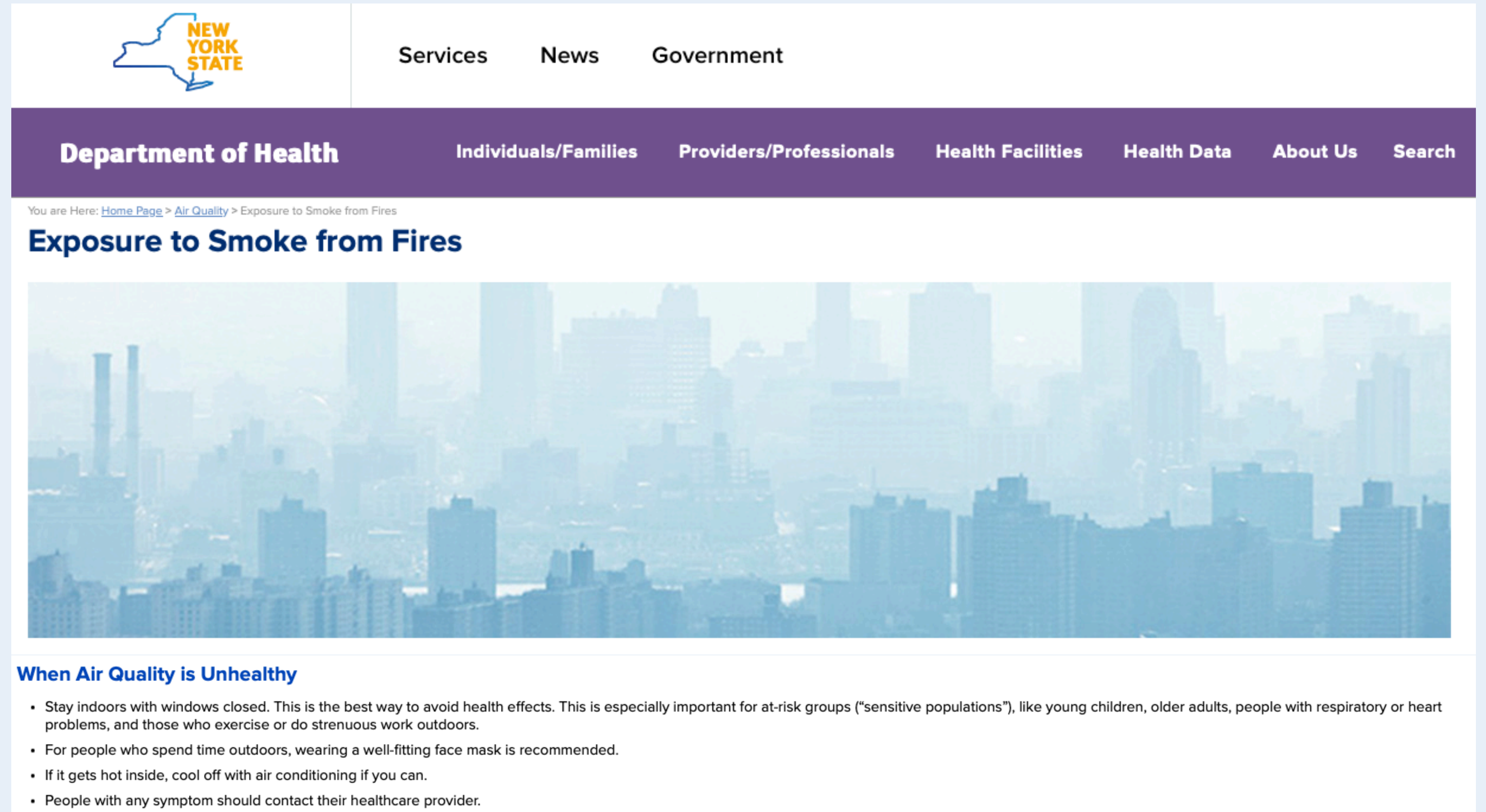
6,550 | 35

**Significance**

Wildfires are an increasingly large source of particulate matter (PM<sub>2.5</sub>) in the western United States. Previous characterizations of exposure to wildfire smoke particles were



# Official Advice



The screenshot shows the New York State Department of Health website. At the top left is the New York State logo. To its right are navigation links for 'Services', 'News', and 'Government'. Below this is a dark purple navigation bar with the following links: 'Department of Health', 'Individuals/Families', 'Providers/Professionals', 'Health Facilities', 'Health Data', 'About Us', and 'Search'. Below the navigation bar is a breadcrumb trail: 'You are Here: [Home Page](#) > [Air Quality](#) > Exposure to Smoke from Fires'. The main heading is 'Exposure to Smoke from Fires'. Below the heading is a large image of a city skyline with a hazy, smoggy atmosphere. Underneath the image is a section titled 'When Air Quality is Unhealthy' with a bulleted list of advice.


**NEW YORK STATE**

Services News Government

**Department of Health** Individuals/Families Providers/Professionals Health Facilities Health Data About Us Search

You are Here: [Home Page](#) > [Air Quality](#) > Exposure to Smoke from Fires

## Exposure to Smoke from Fires



**When Air Quality is Unhealthy**

- Stay indoors with windows closed. This is the best way to avoid health effects. This is especially important for at-risk groups ("sensitive populations"), like young children, older adults, people with respiratory or heart problems, and those who exercise or do strenuous work outdoors.
- For people who spend time outdoors, wearing a well-fitting face mask is recommended.
- If it gets hot inside, cool off with air conditioning if you can.
- People with any symptom should contact their healthcare provider.

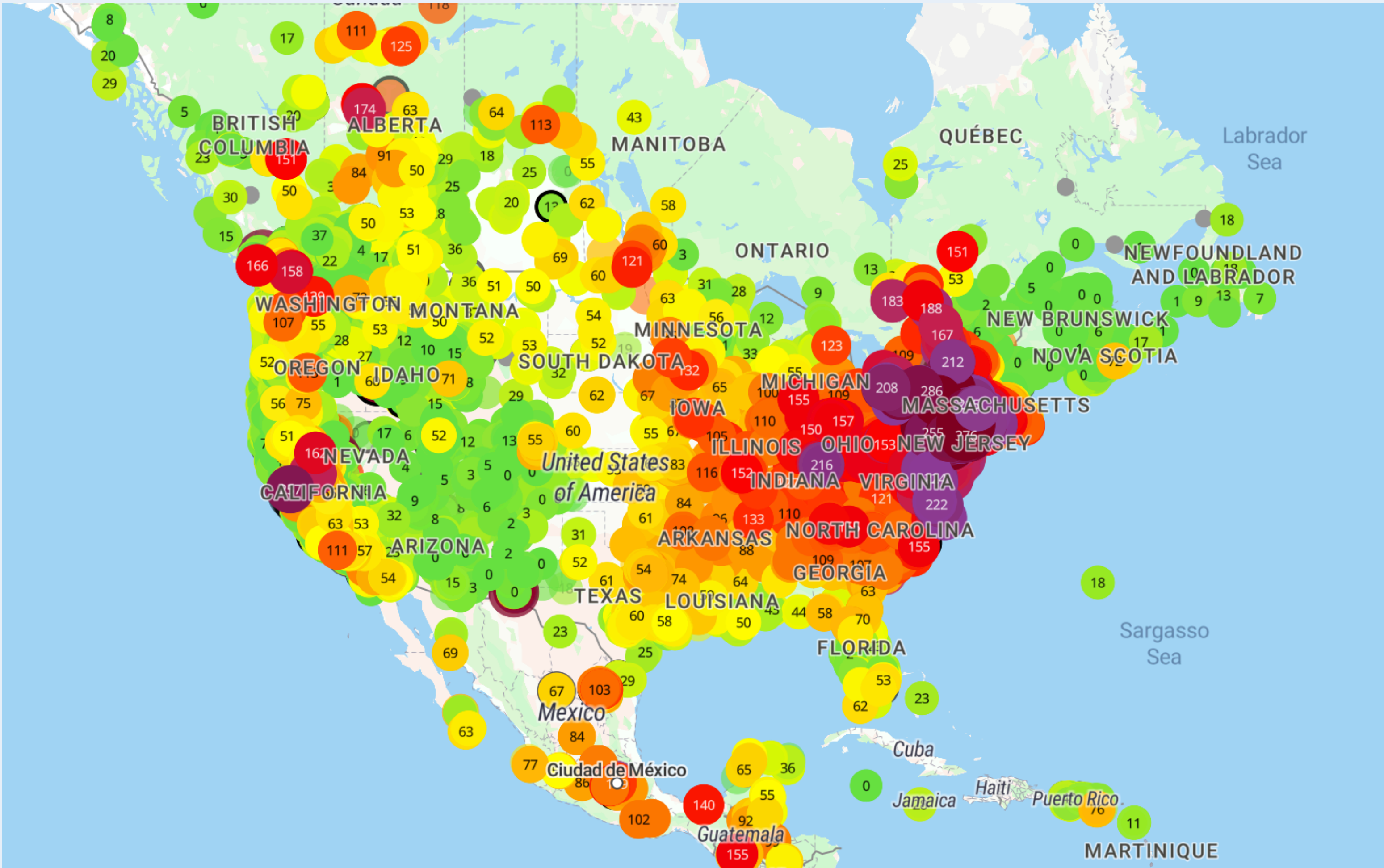


# HOMEOWNER MINDSET AROUND SMOKE EVENTS





June 7, 2023



Source: Purple Air





**AP** U.S. News World News Politics Sports Entertainment Business Technology Health Science Oddities Lifestyle Photography Videos Listen 

# Millions breathing hazardous air as smoke from Canadian wildfires streams south over US

**NEWS** Canadian wildfire smoke disrupts U.S. air travel SHARE & SAVE    

NEWS

# Canadian wildfire smoke disrupts U.S. air travel

 **NEWS** CAREERS COMMENTARY JOURNALS  **Science**

# What we don't know about wildfire smoke is likely hurting us

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**Air pollution**  
**Air pollution in US from wildfire smoke is worst in recent recorded history**



# How Can I Clear My Home of Wildfire Smoke?

UPDATED JUNE 7, 2023



**Tim Heffernan**



**Ellen Airhart**

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With more significant fires becoming the new normal, even people not directly threatened are concerned with what to do about the spread of wildfire smoke. With new threats emerging for areas that have not previously dealt with smoke conditions, you may find yourself preparing for the first time.

Picking up a dedicated air purifier or getting new filters for your central air conditioner are the most effective ways you can help protect those in your home. (That includes pets—the American Veterinary Medical Association recommends keeping an eye out for specific animal health issues related to wildfire smoke). But you can also take cheap, simple, and immediate steps using stuff you probably already own, such as a mop and a washing machine. Here's what we recommend.

## Invest in an air purifier



wildfire smoke  
Search term

+ Compare

United States

1/1/20 - 6/21/23

All categories

Web Search

Interest over time

Download Expand Share



Sept 2020  
Western Wildfires  
OR, CA

July 2021  
Western Wildfires  
Regionwide

July 2022  
70 Fires  
Across the West

June 2023  
Canadian Fires  
East Coast US





wildfire smoke  
Search term

+ Compare

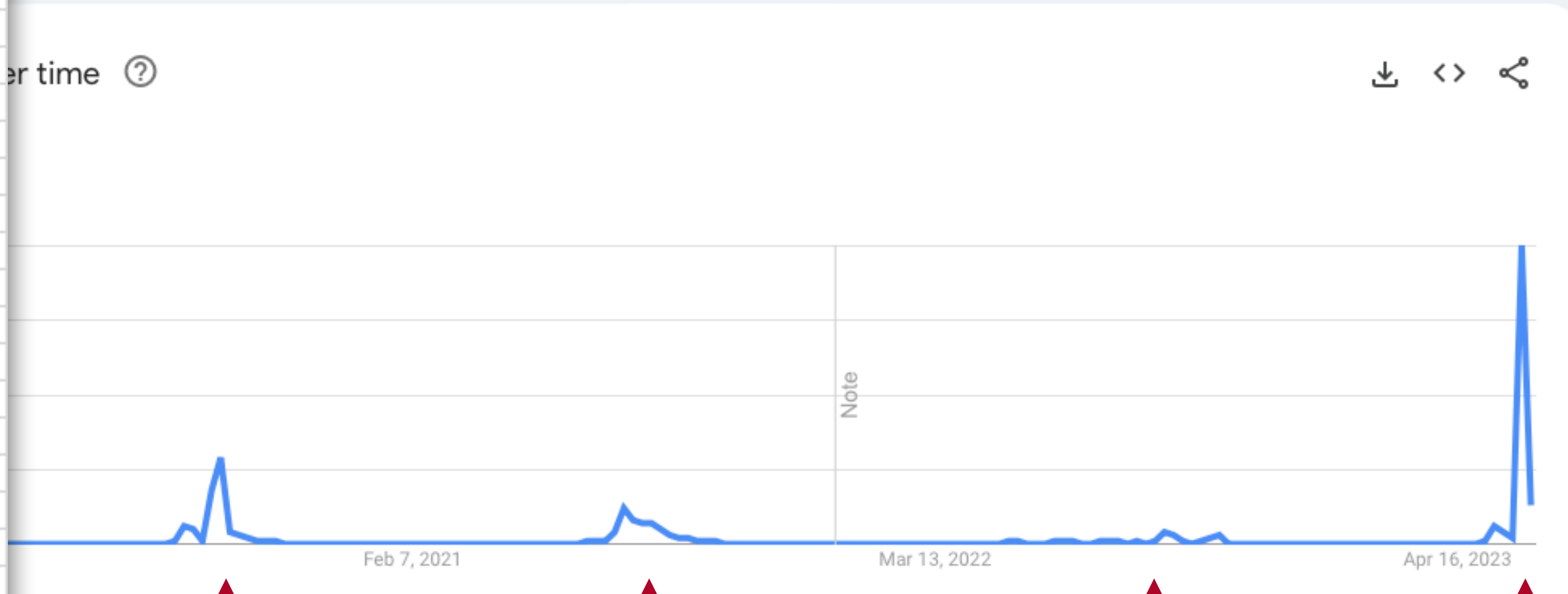
United States

1/1/20 - 6/21/23

All categories

Web Search

RISING	
wildfire canada	Breakout
canada wildfire smoke	Breakout
canada smoke	Breakout
canada	Breakout
wildfire smoke canada	Breakout
canada wildfire map smoke	Breakout
canada wildfire map	Breakout
canadian wildfire	Breakout
canadian wildfire smoke	Breakout
canadian wildfire smoke map	Breakout
canadian wildfire map	Breakout
wildfires	Breakout
wildfire in canada	Breakout
wildfire smoke in canada	Breakout
wildfire smoke nyc	Breakout
new york wildfire smoke	Breakout
new york	Breakout
new york smoke	Breakout
canada wildfires	Breakout
smoke from canada	Breakout
wildfire smoke from canada	Breakout
wildfire smoke ny	Breakout
air quality map	Breakout
canadian wildfires	Breakout
canada wildfires smoke map	Breakout



↑  
**Sept 2020  
Western Wildfires  
OR, CA**

↑  
**July 2021  
Western Wildfires  
Regionwide**

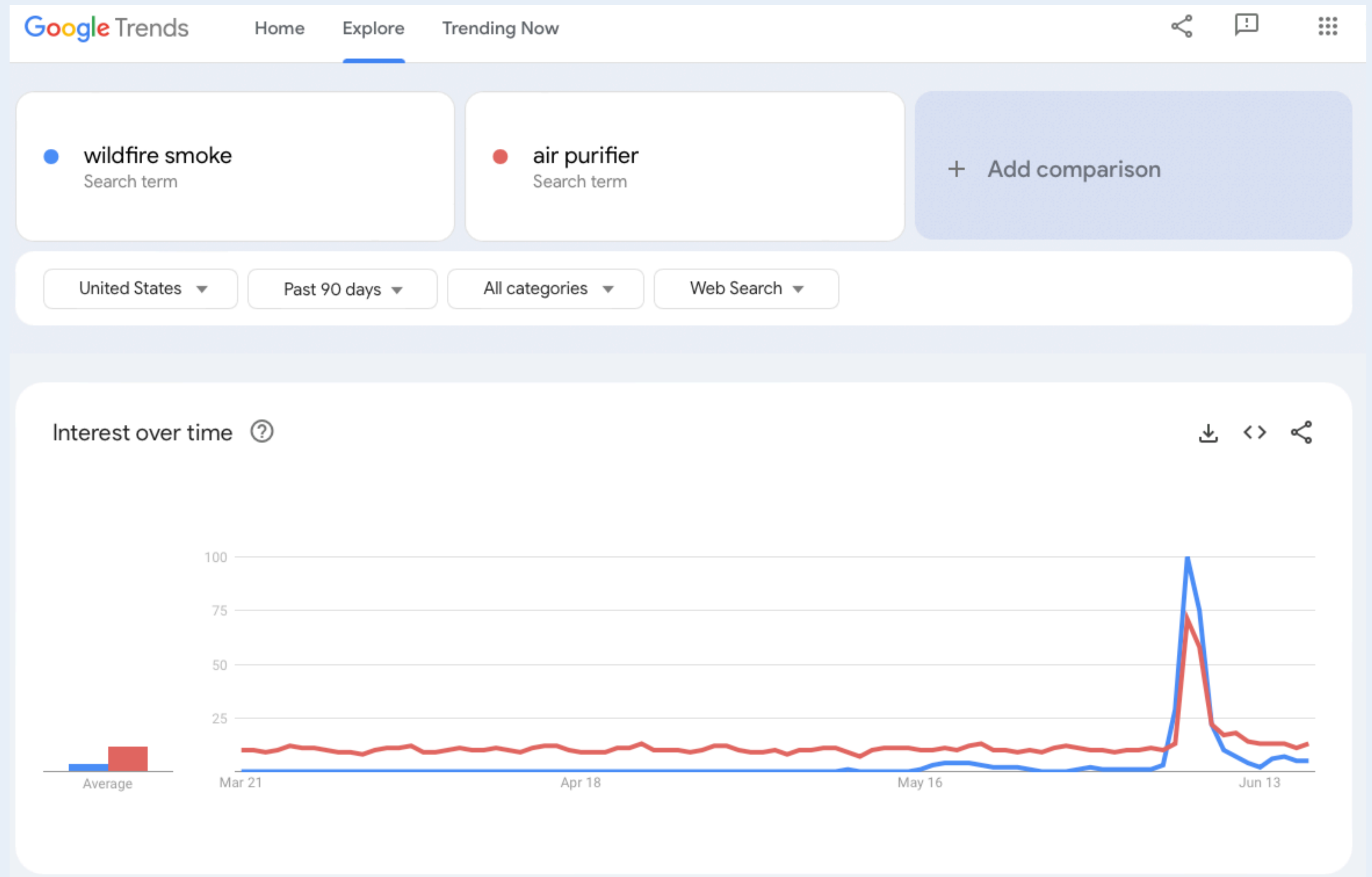
↑  
**July 2022  
70 Fires  
Across the West**

↑  
**June 2023  
Canadian Fires  
East Coast US**





# High Correlation with Filtration

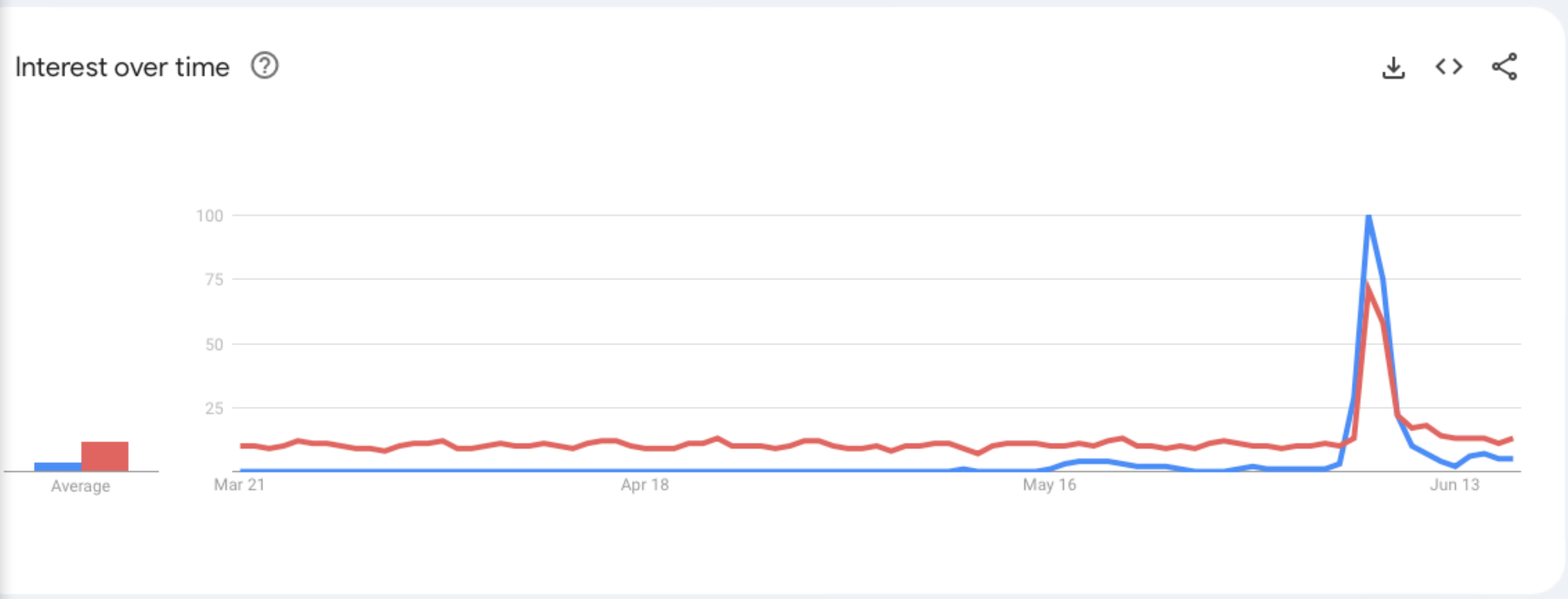


# High Correlation with Filtration

● wildfire smoke Search term      ● air purifier Search term      + Add comparison

United States ▼ Past 90 days ▼ All categories ▼ Web Search ▼

RISING	
air quality nyc	Breakout
dyson air purifier mask	Breakout
dyson pure cool air purifier and tower fan tp4a	Breakout
dyson headphones with air purifier	Breakout
bissell air320 smart air purifier	Breakout
dyson pure cool air purifier and tower fan, tp4a	950%
air quality near me	950%
dyson headphones air purifier	700%
best air purifier for wildfire smoke	500%
air purifier mask	350%
dyson zone	300%
are air purifiers worth it	300%
aroeve air purifier red light	250%
portable air conditioner	250%
coway airmega ap-1512hh mighty	200%
box fan air purifier	200%
best affordable air purifier	200%
costco dyson air purifier	180%
vewior air purifier	170%
vio air purifier	160%
shark air purifier max review	150%
ikea air purifier review	150%
air quality	130%
dyson fan air purifier	120%
dyson fan	110%



# Homeowner First Thoughts: Will This Hurt My Family?

Group "smoke": **717** Total volume: **2,930** Average KD: **44%** [+ Add to keyword list](#) [Update](#) 0/5,000 [↑](#)

<input type="checkbox"/>	Keyword	Intent	Volu	KD %	CPC (U...	Com.	SF	Results	Updated
<input type="checkbox"/>	<a href="#">+ can wildfire smoke cause allergies &gt;&gt;</a>	I	50	33	0.00	0.00	6	375K	2 weeks
<input type="checkbox"/>	<a href="#">+ can wildfire smoke cause headaches &gt;&gt;</a>	I	40	39	0.00	0.00	6	368K	4 weeks
<input type="checkbox"/>	<a href="#">+ can wildfire smoke cause sinus infection &gt;&gt;</a>	I	40	40	0.00	0.00	4	829K	4 weeks
<input type="checkbox"/>	<a href="#">+ can wildfire smoke make you feel sick &gt;&gt;</a>	I	40	40	0.00	0.00	4	2.6M	3 weeks
<input type="checkbox"/>	<a href="#">+ can wildfire smoke make you nauseous &gt;&gt;</a>	I	40	37	0.00	0.00	4	67.7K	This week
<input type="checkbox"/>	<a href="#">+ does wildfire smoke cause headaches &gt;&gt;</a>	I	40	35	0.00	0.00	5	341K	4 weeks
<input type="checkbox"/>	<a href="#">+ how bad is wildfire smoke for you &gt;&gt;</a>	I	40	69	0.00	0.29	1	65.6M	This week
<input type="checkbox"/>	<a href="#">+ how to protect yourself from wildfire smoke &gt;&gt;</a>	I	40	41	0.00	0.02	3	2.5M	3 weeks
<input type="checkbox"/>	<a href="#">+ what chemicals are in wildfire smoke &gt;&gt;</a>	I	40	56	0.00	0.00	5	1.5M	Last week
<input type="checkbox"/>	<a href="#">+ can wildfire smoke cause sore throat &gt;&gt;</a>	I	30	30	0.00	0.00	2	1.7M	3 weeks





# From There: What's the AQI?

All keywords: **11,269** Total volume: **175,050** Average KD: **27%** + Add to keyword list Update metrics 0/5,000 Export

<input type="checkbox"/> Keyword	Intent	Volu	KD %	CPC (USD)	Com.	SERP Features	Results	Updated
<input type="checkbox"/> <a href="#">+ air quality index &gt;&gt;</a>	N	49,500	86 <span style="color:red">●</span>	1.74	0.02		93	This week
<input type="checkbox"/> <a href="#">+ air quality index seattle &gt;&gt;</a>	C	2,400	44 <span style="color:orange">●</span>	0.00	0.00		81	Last week
<input type="checkbox"/> <a href="#">+ what is air quality index &gt;&gt;</a>	I	1,900	83 <span style="color:red">●</span>	0.60	0.01		778M	This week
<input type="checkbox"/> <a href="#">+ air quality index portland &gt;&gt;</a>	C	1,600	38 <span style="color:orange">●</span>	0.00	0.00		84	This week
<input type="checkbox"/> <a href="#">+ seattle air quality index &gt;&gt;</a>	C	1,600	51 <span style="color:orange">●</span>	0.00	0.00		83	This week
<input type="checkbox"/> <a href="#">+ air quality index bend oregon &gt;&gt;</a>	C	1,300	47 <span style="color:orange">●</span>	0.00	0.00		74	Last week
<input type="checkbox"/> <a href="#">+ air quality index by zip code &gt;&gt;</a>	I	1,300	74 <span style="color:red">●</span>	0.79	0.03		16.2M	Last week
<input type="checkbox"/> <a href="#">+ air quality index bellingham &gt;&gt;</a>	I	1,000	19 <span style="color:green">●</span>	0.00	0.00		96	This week
<input type="checkbox"/> <a href="#">+ air quality index reno &gt;&gt;</a>	C	1,000	33 <span style="color:orange">●</span>	0.00	0.00		3M	This week
<input type="checkbox"/> <a href="#">+ air quality index spokane &gt;&gt;</a>	I	1,000	29 <span style="color:green">●</span>	0.00	0.00		69	Last week
<input type="checkbox"/> <a href="#">+ air quality index chico &gt;&gt;</a>	C	880	14 <span style="color:green">●</span>	0.00	0.00		79	2 weeks
<input type="checkbox"/> <a href="#">+ air quality index map &gt;&gt;</a>	N	880	84 <span style="color:red">●</span>	0.57	0.05		94	Last week





# Low Volume for Purifier and Smoke

## Keyword ideas

Keyword Variations

**26** Total volume: **440**

Keywords	Volume	KD %
best air purifier for wildfire smoke	210	41 ●
best air purifiers for wildfire smoke	50	33 ●
best air purifier for smoke from wildfire	20	n/a ●
best air purifier for wildfire smoke 2021	20	n/a ●
best air purifiers for wildfire smoke 2021	20	n/a ●

[View all 26 keywords](#)

Questions

**3** Total volume: **30**

Keywords	Volume	KD %
what air purifier is best for wildfire smoke	20	n/a ●
what is the best air purifier for wildfire smoke	10	n/a ●
what are the best air purifiers for wildfire smoke	0	n/a ●

[View all 3 keywords](#)

Keyword Clusters new

Get keyword clusters **automatically**

- **best air purifier for wildfire smoke**
    - what's the best
    - best air purifier
    - best air purifier
    - best air purifier
    - best air purifier
- and more clusters

[View all clusters](#)



The  
Chasm  
Remains



**Health  
Concerns**

**Performance  
of the  
Building**





# TACTICS TO SEIZE EPISODIC OPPORTUNITIES LIKE SMOKE



# OUTBOUND vs. INBOUND





# First Priority: Communicate with Existing Customers

- CRM Readiness?

Subject: Important Guidelines for Your Ventilation System During a Forest Fire Event

Dear [Customer's Name],

We hope this message finds you safe and well. As forest fire events are unfortunately becoming more common, we wanted to provide some guidance on how to best use and protect your installed ventilation system during such incidents.

1. **Minimize Outdoor Air Intake:** During a forest fire event, please adjust your ventilation system to reduce the intake of outdoor air as much as possible. This will help limit the amount of smoke and particles entering your home.
2. **Increase Filtration:** If your system has a high-efficiency particulate air (HEPA) filter, ensure it's in good condition and replace it if necessary. These filters are excellent for trapping wildfire smoke particles. If you don't have a HEPA filter, consider upgrading to one.
3. **Keep Windows and Doors Closed:** While this might seem obvious, it's crucial to keep windows and doors closed as much as possible to prevent smoke infiltration.
4. **Call Us to Check Your System:** Regular maintenance ensures your ventilation system performs optimally. Please contact us if you need assistance or are uncertain about how to perform these checks.

Remember, it's important to stay informed about the air quality in your area during forest fire events. Many websites and mobile apps provide real-time updates.

Please feel free to reach out to us if you have any questions or need additional support. We're here to help ensure your home remains a safe and comfortable space during these challenging times.

Stay safe,

[Your Name]  
[Your Position]

[Your Contact Information]





# Goal: Trusted Authority on All Things Home Environment

- Indoor Air Quality
- Healthy Home
- Ventilation
- Filtration





# Pre-Emptive Education

- Content
- SEO

## Key Steps to Minimize the Smoke in Your Home



Tuesday, December 11, 2018 - 2pm

It's no joke. The smoke from the fires is serious. Your hosts Duane Knickerbocker and Bill Small address the issue and what you should do to minimize the smell in the home. If you can smell smoke, it's coming in from somewhere on the outside. Know what that means? Something is allowing outside air in. Hear what it is when your hosts get into the conversation. You might be surprised...

The discussion shifts to another time sensitive matter and that's solar for the home. In order to get the tax credit, it's time to act if you want the deduction in 2018. The system has to be installed to get the credit and that means the timing is important. If you don't act soon, you'll miss the window to get things in time for the deduction in 2018. The interest in electricity has changed in so many of our applications that there are considerations that would never have been possible only 5 years ago. Find out why a happy customer gave his description of the outcome of electric heat as "womblike" comfort. Not that's a big statement. And just another reason to make the move to get something started if you're going to try to get the tax credit this year.

## Smoke is in the air. Is it in your home?

## What Can I Do to Improve Air Quality in My Home?



5) in response to last year's power outages are a great PS warnings, there is no lines and or compromise r prepare for power shutoffs over in California?

's latest wildfires and the extra time you're likely spending in your our indoor air quality (IAQ) needs some attention. Even in normal uted than outside air, but 2020 has made things extra it Brower Mechanical have some tips and tricks to reduce indoor environment for you and your family.

### Indoor Air Quality?

llowing health issues?

ditions across about the a look at healthier ne ur ceiling. So ed about in ust too. e big box st. There are e energy e clip board -581-1887



# Keyword Ideas

1. "Wildfire smoke health effects"
2. "How to protect home from wildfire smoke"
3. "Wildfire smoke air filters"
4. "How to seal home from smoke"
5. "Home performance solutions for smoke"
6. "Wildfire smoke in New York"
7. "Smoke infiltration solutions"
8. "Air purifiers for wildfire smoke"
9. "Home improvement for smoke protection"
11. "Smoke-proofing my home"
12. "HEPA filters for wildfire smoke"
13. "Smoke removal services"
14. "Indoor air quality improvement"
15. "How to clean home after smoke exposure"
16. "DIY solutions for smoke infiltration"
17. "Professional services for smoke proofing home"
18. "Cost of home smoke mitigation"
19. "Smoke detectors and alarms"





## Tactics that are Fast to Deploy and Have Reach

- Email to Existing Customer Lists
- Facebook/Instagram Awareness Advertising
- Campaigns to Custom Audiences You've Already Built
- Display Advertising
- Paid Search Adjustments
  - Increase geographic reach
  - Increase bids
  - More aggressive competitor campaigns



# More Predictable Than We Might Realize?



## OUTLOOKS

### National Significant Wildland Fire Potential Outlook

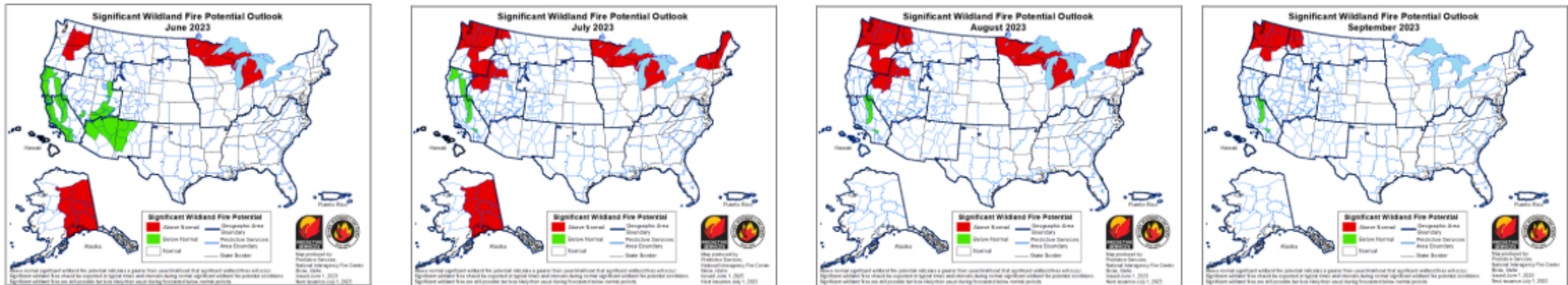
The outlook identifies areas by month for the next four months with above, below, and near normal significant fire potential.

The main objectives of the National Significant Wildland Fire Potential Outlooks are to improve information available to fire management decision makers. These assessments are designed to inform decision makers for proactive wildland fire management, thus better protecting lives and property, reducing firefighting costs and improving firefighting efficiency.

The following maps represent the cumulative forecasts of the eleven Geographic Area Predictive Services Units and the National Predictive Services Unit.

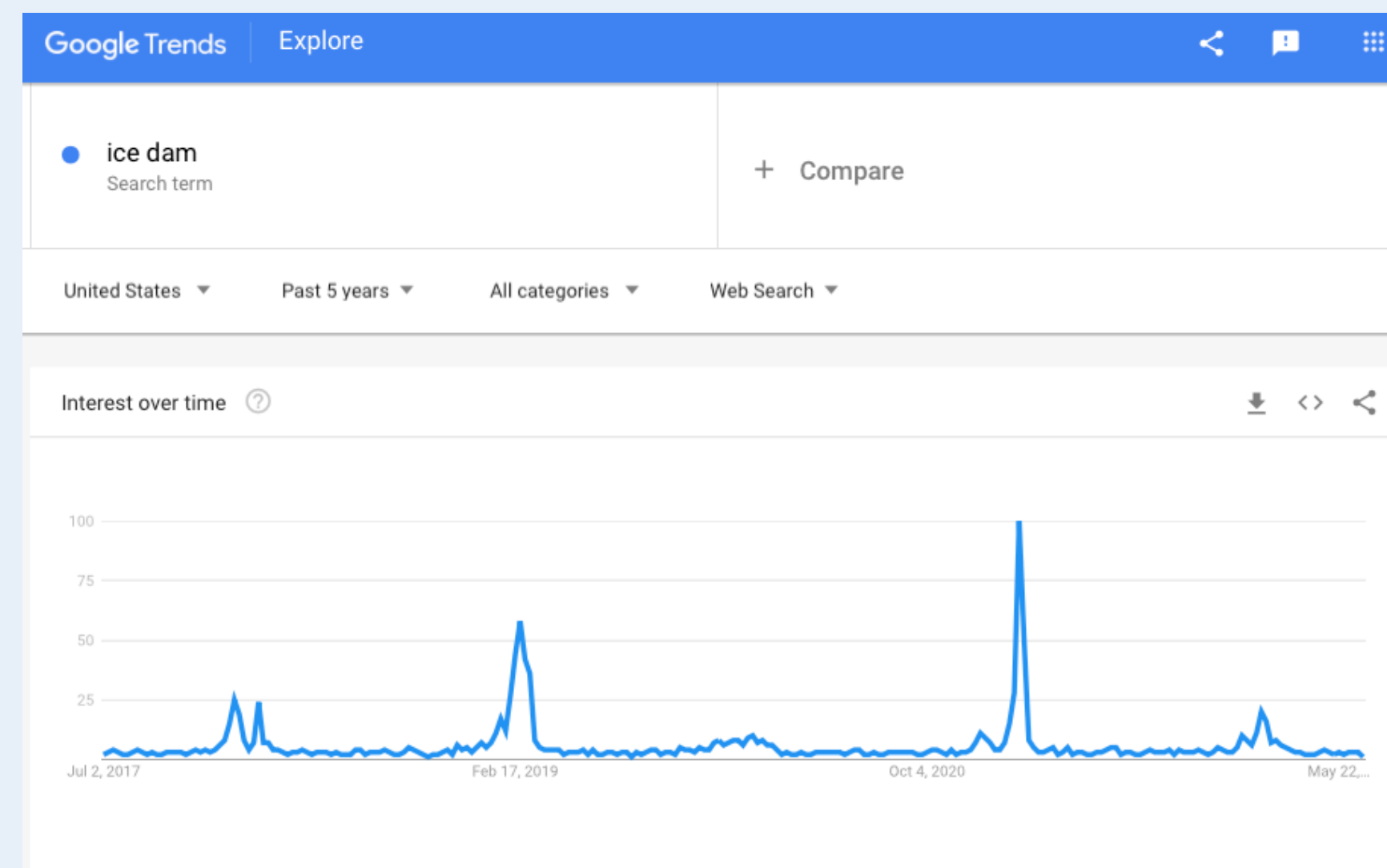
The entire text document can be found at the following link, [National Wildland Significant Fire Potential Outlook](#).

This product is updated on the first of each month or first work day of each month.



## Not Just Wildfires: Other Episodic Demand Drivers

- EXTREME HEAT & COLD
- POWER OUTAGES
- ICE DAMS
- EXPIRING INCENTIVES





# QUESTIONS?

Peter Troast  
peter@energycircle.com

