



Overlooking Puget Sound
Chambers Bay

When Smoke chokes the state (again)

David Grant
Air Quality Program



Legal Authorities

Federal Clean Air Act: EPA...sets National Ambient Air Quality Standards

WA Clean Air Act: RCW 70.94

Declaration of public policies and purpose.

It is declared to be the public policy to preserve, protect, and enhance the air quality for current and future generations. Air is an essential resource that must be protected from harmful levels of pollution. Improving air quality is a matter of statewide concern and is in the public interest. It is the intent of this chapter to secure and maintain levels of air quality that protect human health and safety, including the most sensitive members of the population, to comply with the requirements of the federal clean air act, to prevent injury to plant, animal life, and property, to foster the comfort and convenience of Washington's inhabitants, to promote the economic and social development of the state, and to facilitate the enjoyment of the natural attractions of the state.

<https://www.mil.wa.gov/uploads/pdf/PLANS/esf-8-appendix-5-attachment-1-severe-smoke-episodes-2017.pdf>

How do we do it?

- 1: Monitoring current conditions and collecting data history.
- 2: Managing sources that are under our authority, such as agricultural burning, residential outdoor burning, indoor wood smoke, and other industrial sources.
- 3: Forecasting meteorological and air quality conditions toward making decisions intended to maintain air quality (issuing burn bans, wildfire smoke forecasts etc.).
- 4: Studying human health impacts toward trying to provide information to the public regarding current air quality impacts on their lives (WAQA index).

Air monitoring data

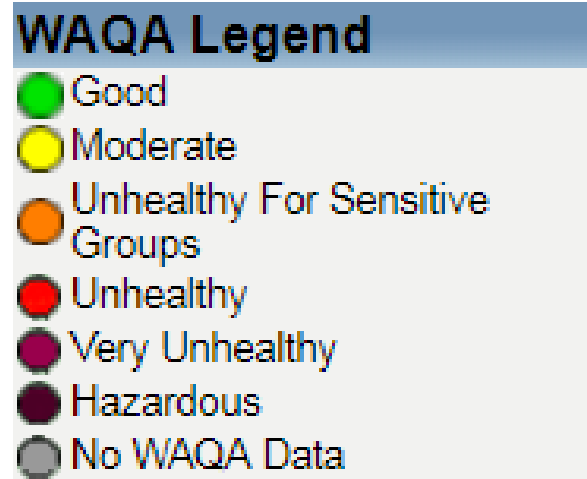
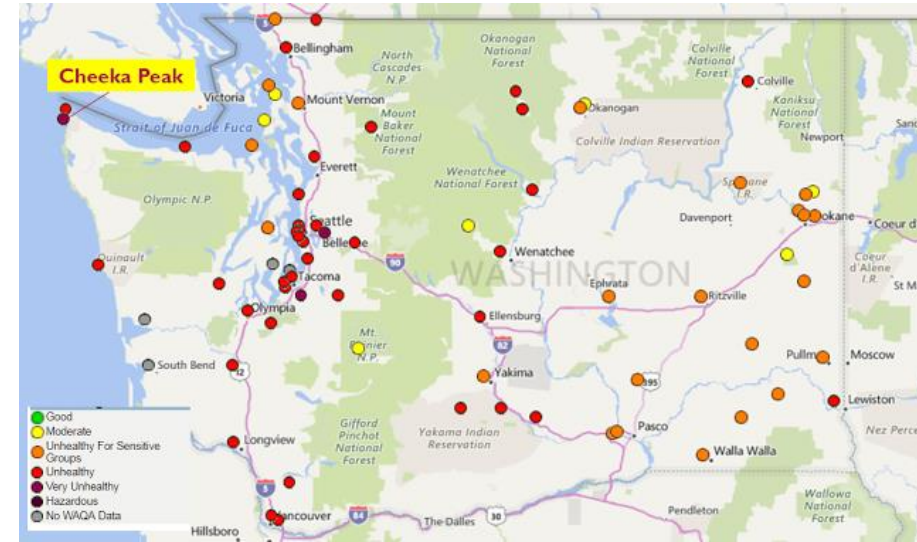
State AQ monitoring map:

<https://fortress.wa.gov/ecy/enviwa/default.ltr.aspx>

WA only, multiple pollutants, can download data

WA Smoke blog: <http://wasmoke.blogspot.com>

Nationwide data, PM_{2.5} only, not easy to download data



Advisory levels:

Washington Smoke Information

This site is an effort by county, state, and Federal agencies and Indian Tribes to coordinate and aggregate information for Washington communities affected by smoke from wildland fires. The information is posted here by the agencies themselves while volunteers built and maintain the page.

Monitors

- Good
- Moderate
- Unhealthy for Sensitive Groups
- Unhealthy
- Very Unhealthy
- Hazardous
- No Recent Data

Published by PNW smoke cooperators - full map

*The map above is not able to display all state air quality monitors. Click here to see all monitors in Washington: [WA Ecology Air Monitors](#)

Note: Some users might notice intermittent discrepancies in colors shown on the map of air quality monitors above, and those reported on the Department of Ecology's official page. This is because Ecology believes their method of calculating the air quality category (i.e. "Good", "Moderate", "Unhealthy" etc) is more protective of public health in Washington. If in doubt as to which better represents public health risk, use the more stringent of the two (i.e. the map showing worse air quality).

HOME | WHERE'S THE FIRE? | AIR QUALITY NOW | SMOKE AND HEALTH | LOCAL GOV | WEBCAMS | AIR QUALITY FORECASTING

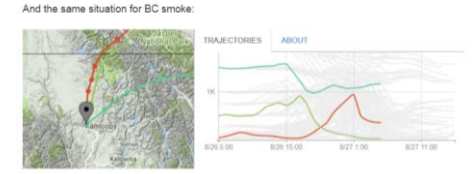
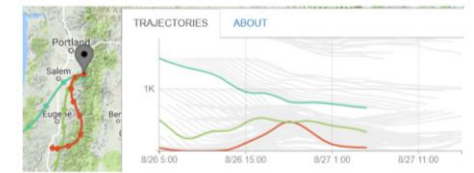
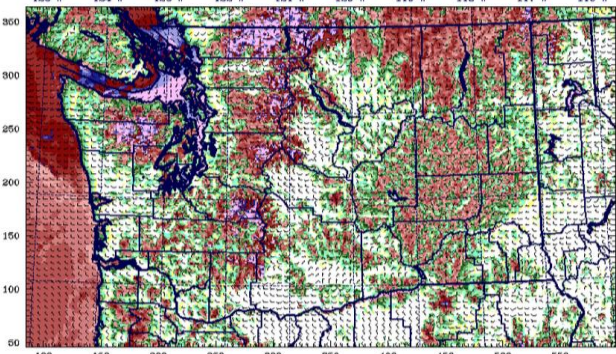
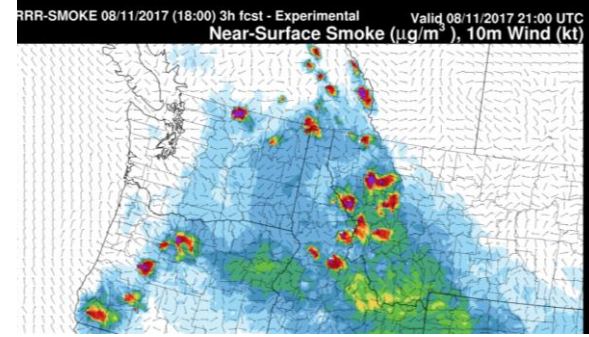
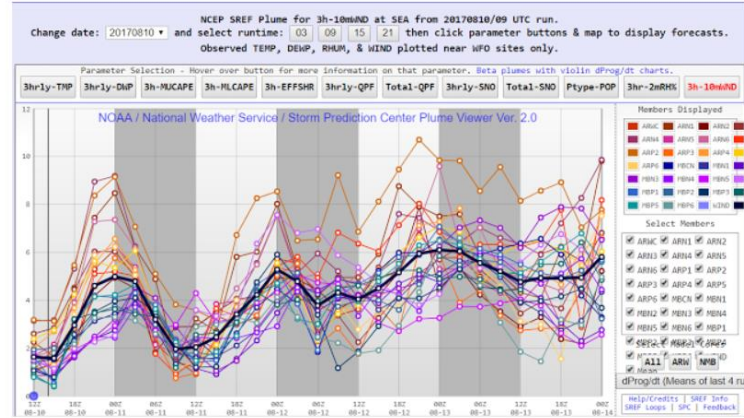
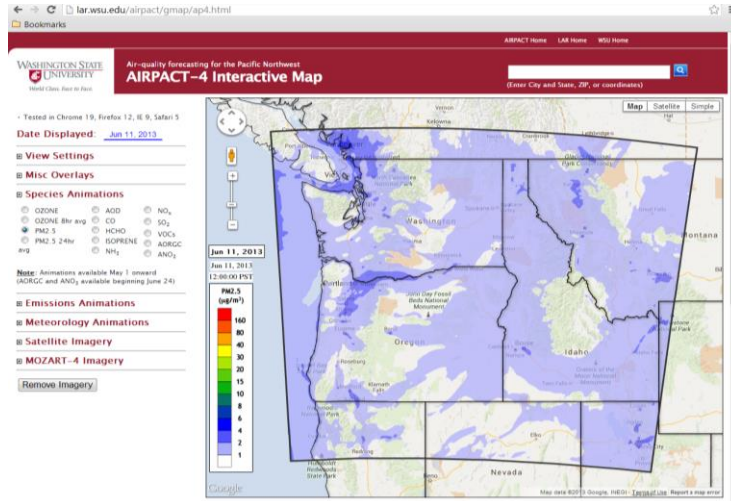
TUESDAY, SEPTEMBER 12, 2017

Central Washington Smoke Forecast - Tuesday, September 12, 2017

WE WANT TO HEAR FROM YOU!
We encourage you to post comments and questions on this blog so we can better serve you. To do so, click a link at the bottom of a

Smoke forecasting

Use multiple modeling products



Posted to smoke blog

<http://wasmoke.blogspot.com>

Statewide outlook in addition to ARA reports

Will smoke start to clear by Friday? Yes ± maybe

Ah the challenges of communicating scientific uncertainty!

Wednesday's air quality conditions remained pretty close to a repeat of Tuesday. Thursday will plagiarize from Wednesday. There is a reasonable chance that gradual improvements in western WA will commence by Friday afternoon. Eastern WA will have to wait a little longer. More on all that further down.

For today, expect mostly Good to Moderate air in southwest and northwest WA, while areas from Lynnwood down to Olympia can expect Unhealthy for Sensitive Groups or Unhealthy air at times. No change to the pessimistic forecast for most of eastern WA. Unhealthy for Sensitive Groups or worse ☹️

Ground level ozone (aka smog) concerns (which we blogged about recently) persist, exacerbated by wildfire smoke. Locations in the Cascade foothills communities of east King and Pierce Counties and the Tri Cities recorded high levels of ozone this past week. An air quality advisory for smog has been issued.

Smoke on the west side should start clearing late tonight. No such luck in eastern WA

Satellite imagery shows impressive plumes from fires in the Cascades headed northeast.

But it requires a look at a zoomed out loop to see the culprit behind all the smoke in western WA: smoke from southwestern Oregon that moved over the Pacific and is now swinging over us as it departs to the east. Most locations along the I-5 corridor are reporting Moderate to Unhealthy for Sensitive Groups (USG) air and that will remain the story for the rest of the day. A surge of marine air is expected late tonight and it might be Wednesday morning before smoke starts to clear. Sensitive individuals should take precautions and minimize their outdoor time.

Collaboration with LAAs, Tribes, USFS, WADNR, EPA, DoH & local HDs

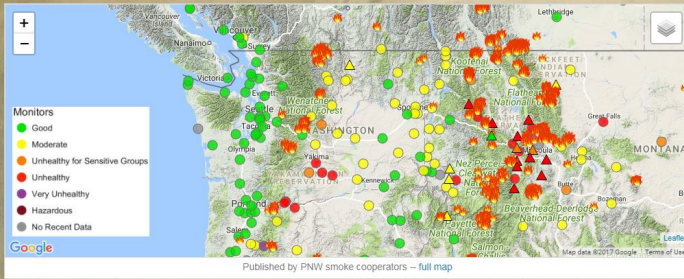
- Issuing AQ forecasts and alerts when poor air is expected to remain
- Partners use our data & forecasts to inform their citizenry
- When feasible, deploy temporary monitors to hard- hit areas

Air Pollution Category	Meaning	Precautions to Take
Good	Air pollution is minimal and there is little health risk.	None.
Moderate	People with asthma, respiratory infection, diabetes, lung or heart disease, or have had a stroke may begin to have breathing problems.	People with asthma, respiratory infection, diabetes, lung or heart disease, or have had a stroke should limit outdoor activities or do activities that take less effort, such as walking instead of running.
Unhealthy for Sensitive Groups	More people than average may have breathing problems or have worsened symptoms of existing asthma or lung disease.	Sensitive groups include people with heart or lung disease, asthma, diabetes, infants, children, adults older than 65, pregnant women, or who have had a stroke. These people should limit time spent outdoors.
Unhealthy	Many more people than average may have breathing problems or have worsened symptoms of existing lung or heart disease.	Everyone should limit time spent outdoors. Everyone should avoid exercising outdoors (including sports teams) and choose non-strenuous indoor activities. People with asthma, respiratory infection, diabetes, lung or heart disease, or have had a stroke should stay indoors. Infants, children, pregnant women and adults over age 65 should also stay indoors.
Very Unhealthy	Some healthy people can have breathing problems. People with asthma, lung and heart disease have an increased risk of symptoms or worsening of their disease. Studies show the number of people hospitalized for lung diseases can be 50 percent more than normal.	Everyone should stay indoors, do only light activities, and keep windows closed if it is not too hot. Run air conditioners on re-circulate and close the outside air intake. Use indoor air cleaners with HEPA filters, if available. If you must be outdoors, wear an N-95 respirator mask. People with chronic diseases should check with their health care provider before wearing a mask. Check with your local health department for health information. People with asthma, lung and heart disease, or have had a stroke should check with their health care provider for advice about leaving the area. Anyone with shortness of breath, wheezing, chest pain, heart palpitations, extreme fatigue, or difficulty moving or speaking should call their health care provider or call 911.
Hazardous	More healthy people are likely to have breathing problems. The people most susceptible are those with asthma or lung disease, diabetes, have had a stroke, infants, children, pregnant women, and adults older than 65. Studies suggest more people with asthma, lung or heart disease need medical attention.	Everyone should stay indoors, do only light activities, and keep windows closed if it is not too hot. Run air conditioners on re-circulate and close the outside air intake. Use indoor air cleaners with HEPA filters, if available. If you must be outdoors, wear an N-95 respirator mask. People with chronic diseases should check with their health care provider before wearing a mask. Check with your local health department for health information. People with asthma, lung and heart disease, or have had a stroke should check with their health care provider for advice about leaving the area. Anyone with shortness of breath, wheezing, chest pain, heart palpitations, extreme fatigue, or difficulty moving or speaking should call their health care provider or call 911.

Coordinated Communications

Washington Smoke Information 1 million hits in August

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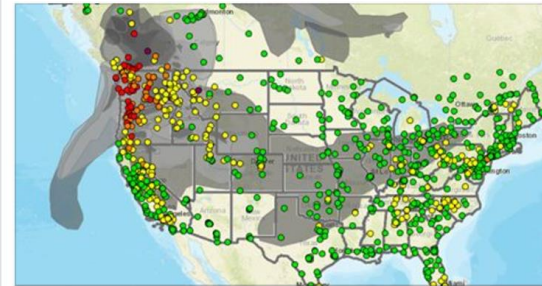
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1.5 million hits/400K read blog

Washington Department of Ecology
Published by Camille St. Onge [?] · August 4 ·

We've never seen numbers like this across the board. Washington's air quality is the worst in the nation. We're tracking the smoke and our toxicologist shares health tips. bit.ly/WAsmoke18 #bcwildfire



Smoke chokes Washington - air quality worst in the nation

Air monitors around Washington state are lighting up the maps like a Christmas tree - and red lights aren't good. Almost every community i...

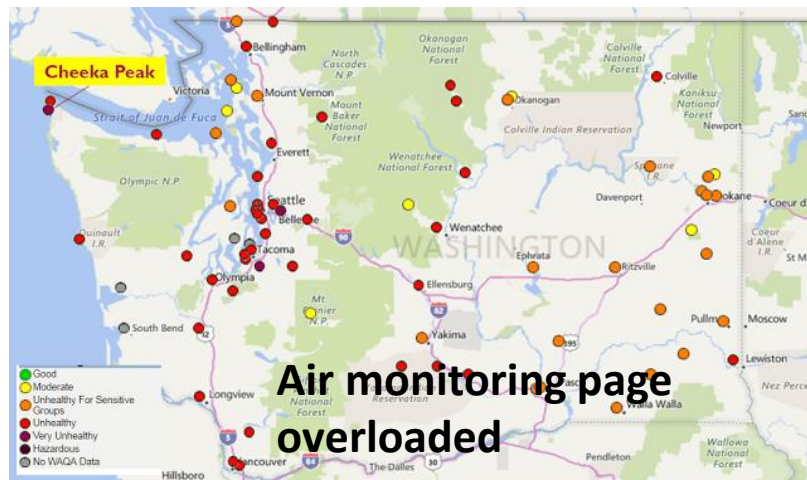
[ECOLOGYWA.BLOGSPOT.COM](http://ecologywa.blogspot.com)

KOMONews.com



The state is blanketed with #BCwildfire smoke. We're socked in and it won't move out soon enough according to our latest forecast <http://bitly.com/WAsmoke17>

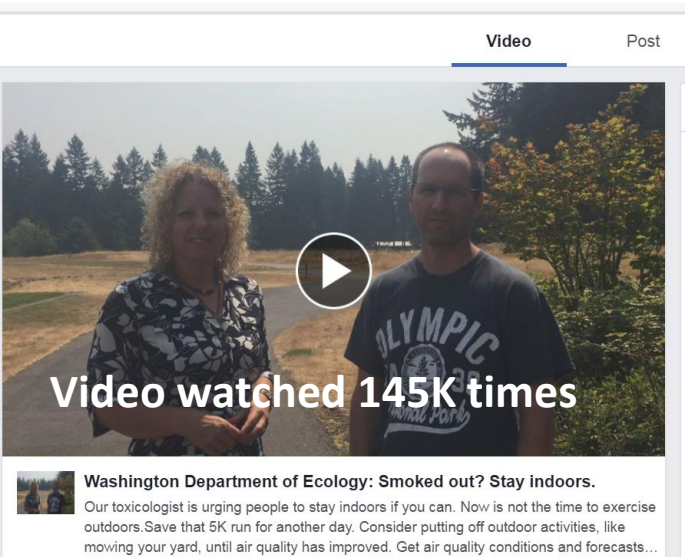
163 191 3.7K



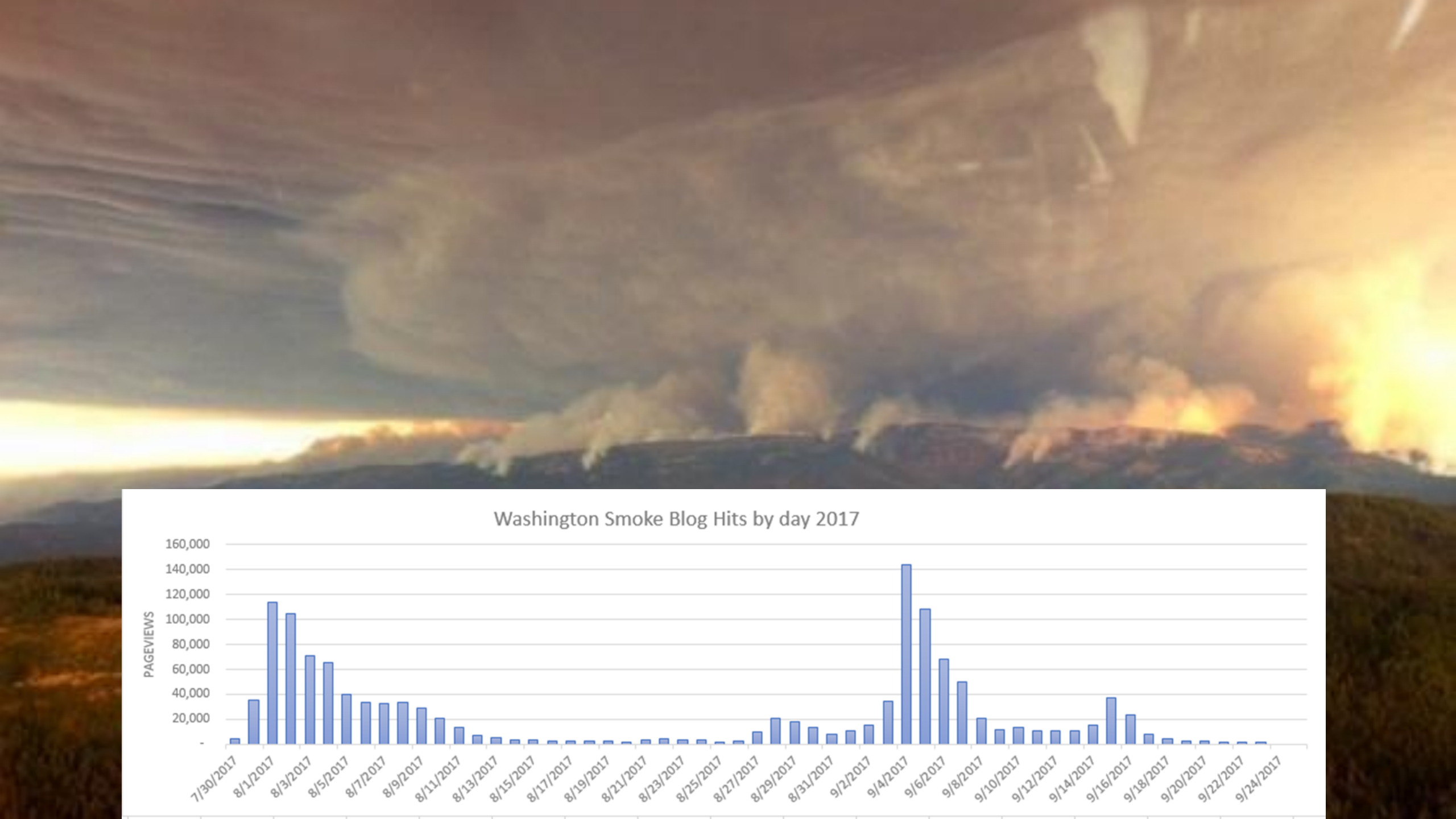
Air monitoring page overloaded



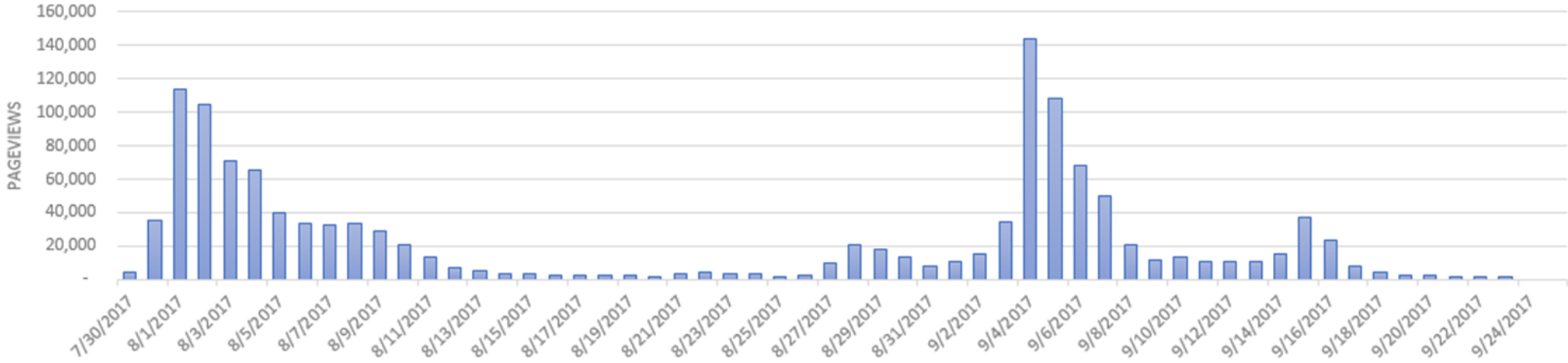
Television Radio Newspaper



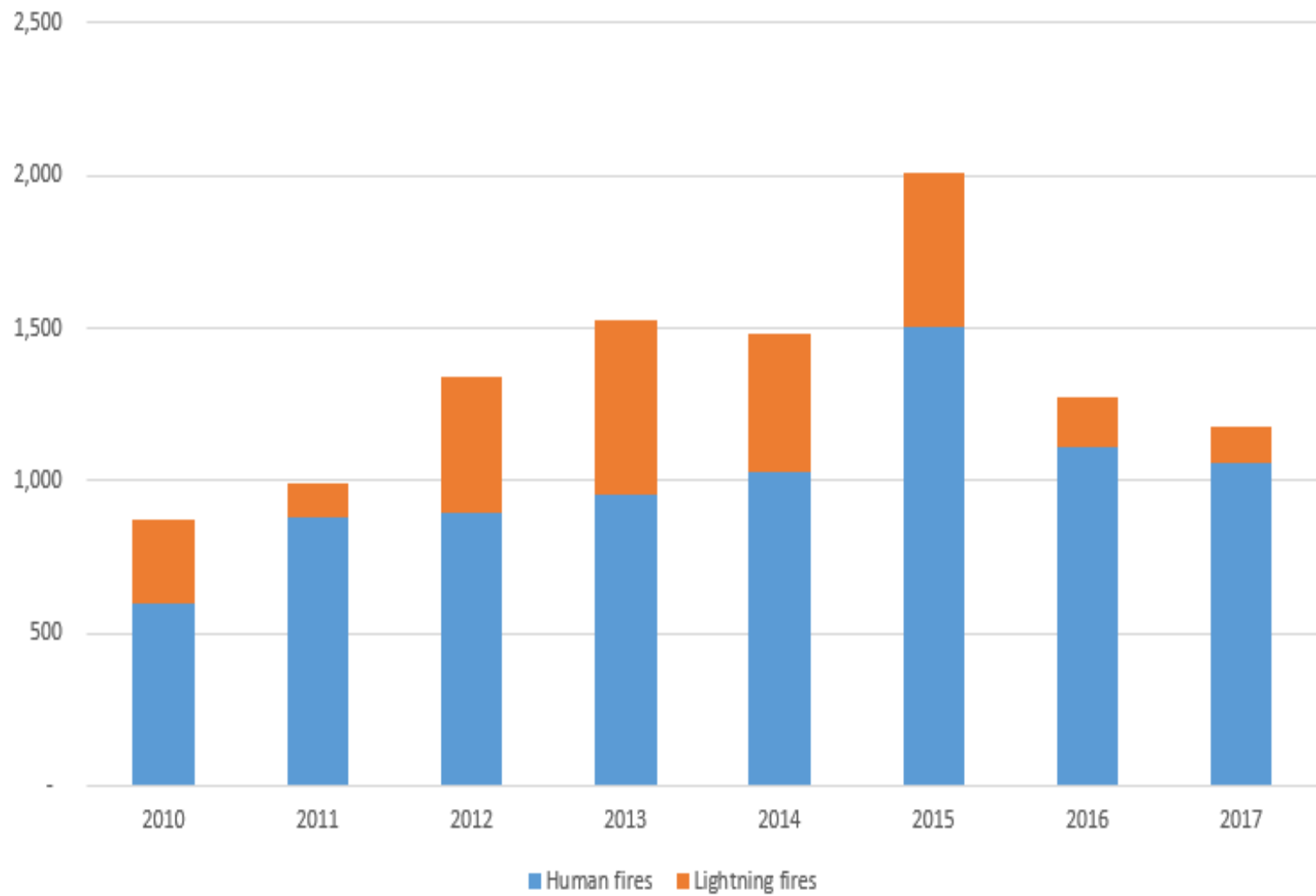
Washington Department of Ecology: Smoked out? Stay indoors.
Our toxicologist is urging people to stay indoors if you can. Now is not the time to exercise outdoors. Save that 5K run for another day. Consider putting off outdoor activities, like moving your yard, until air quality has improved. Get air quality conditions and forecasts...



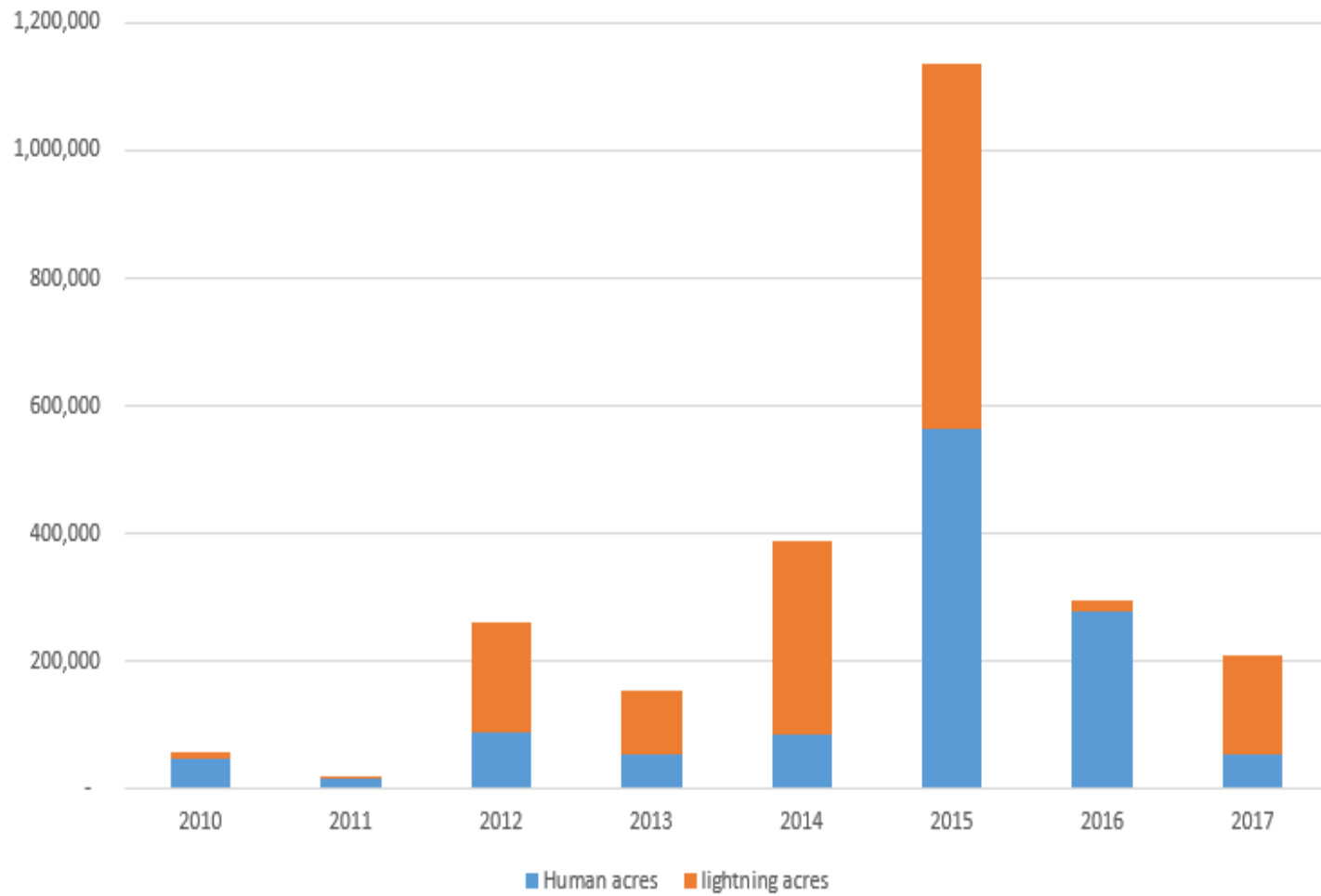
Washington Smoke Blog Hits by day 2017

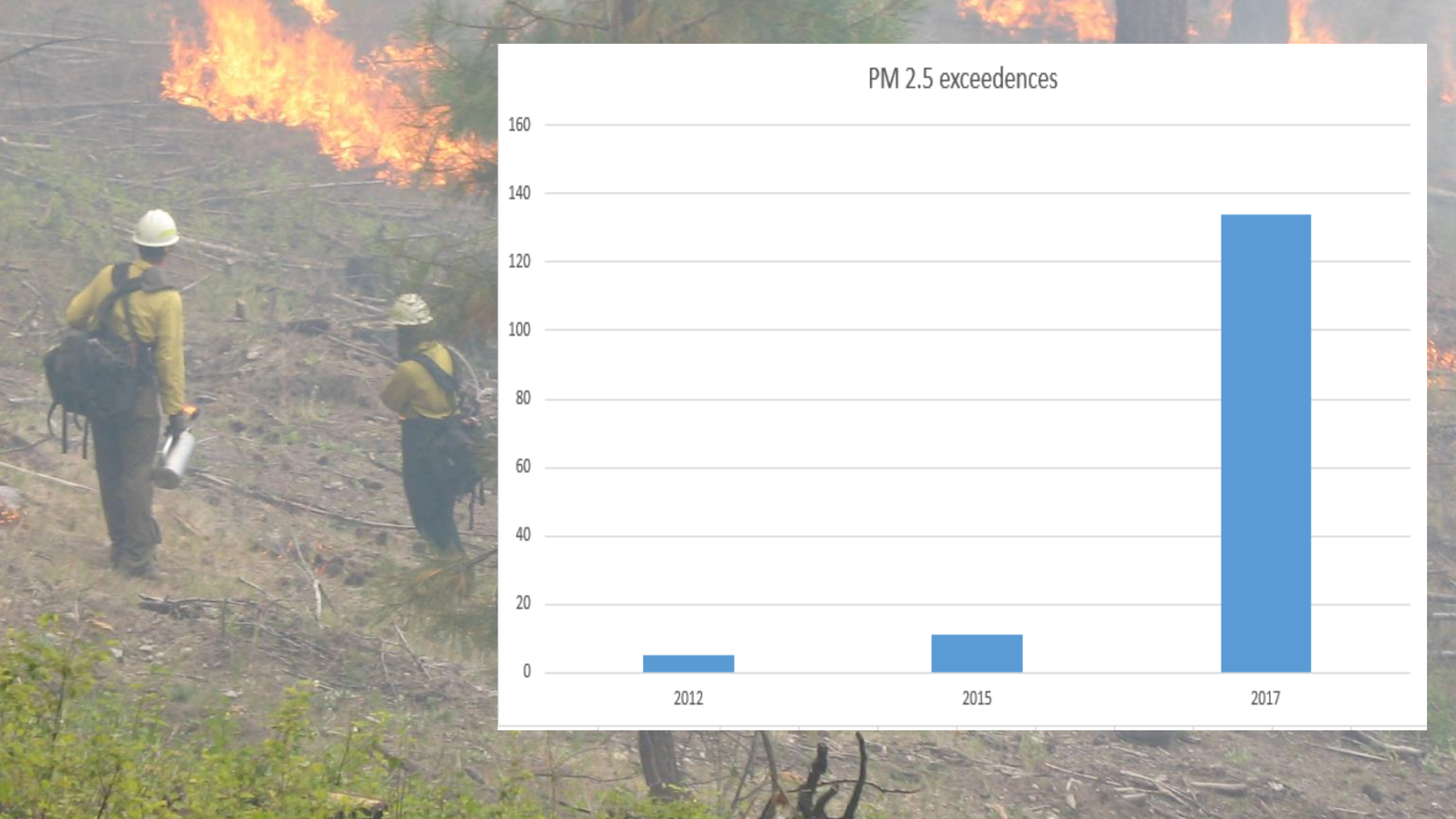


Total fires

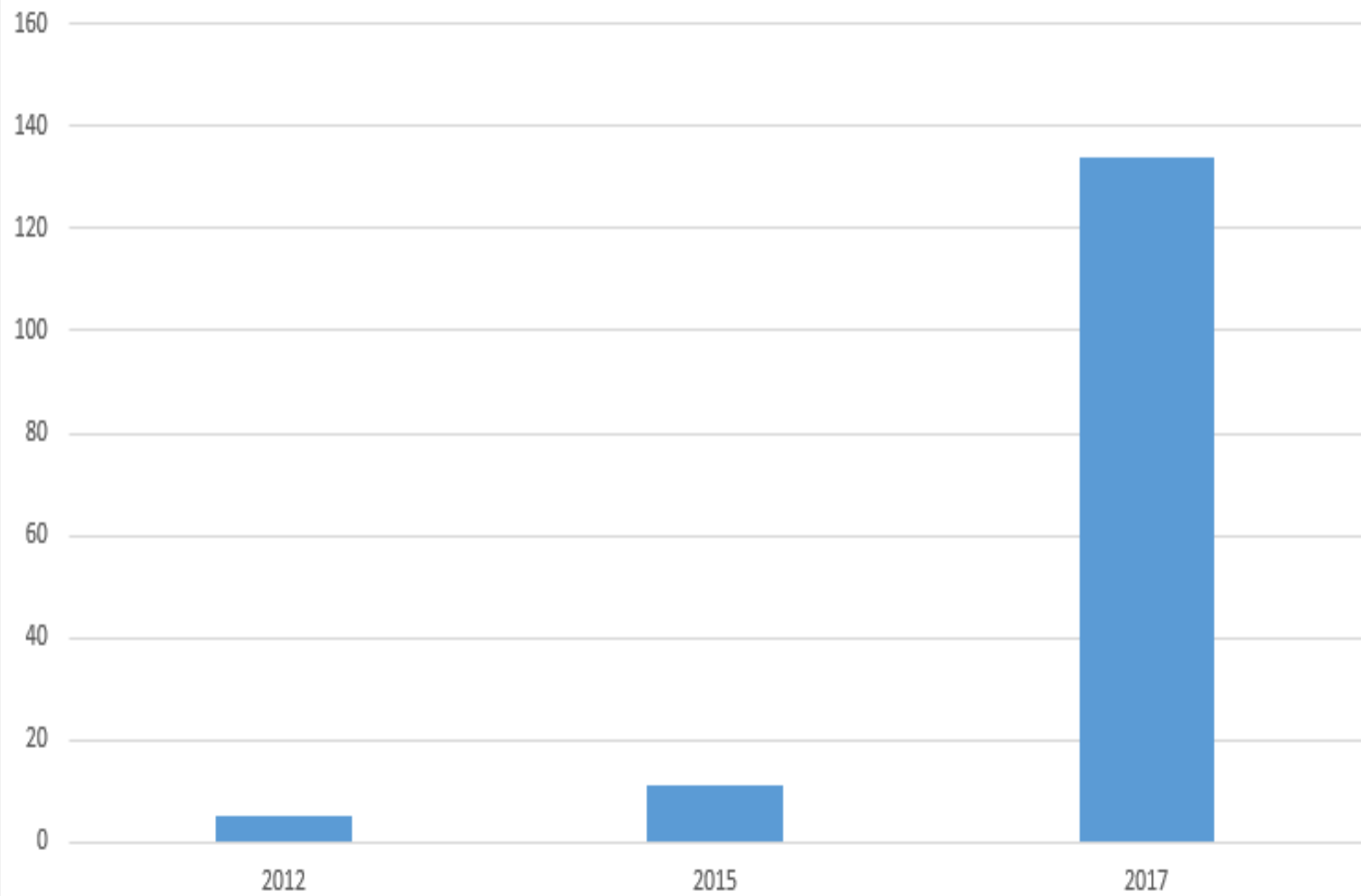


Total acres





PM 2.5 exceedences



Questions?



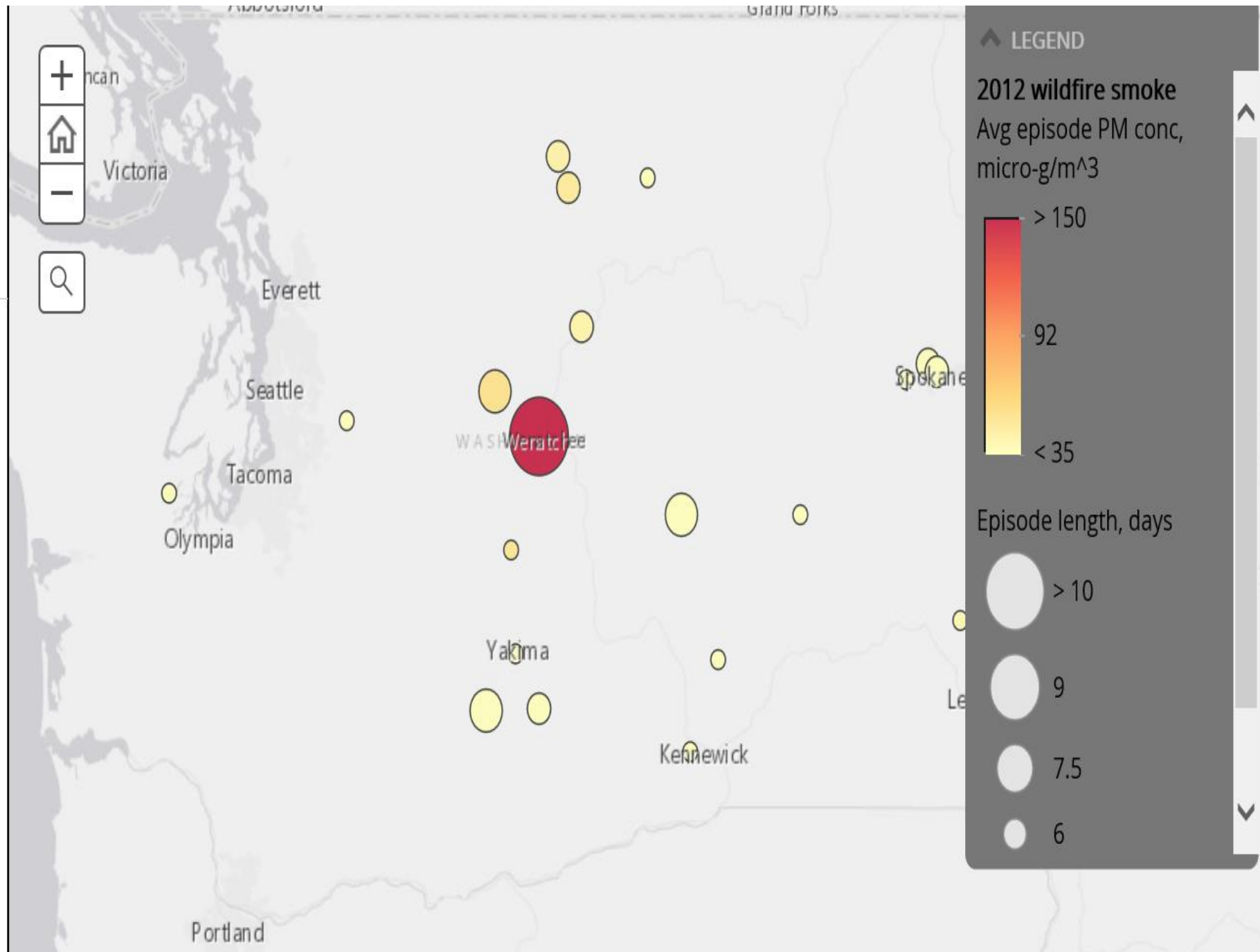
Comparing Washington wildfire smoke 2012-2017

2012 wildfire smoke

259,526 acres burned this year, including a fire very close to Wenatchee

2014 wildfire smoke

386,972 acres burned this year.



Questions? [↗](#)

Comparing Washington wildfire smoke 2012-2017

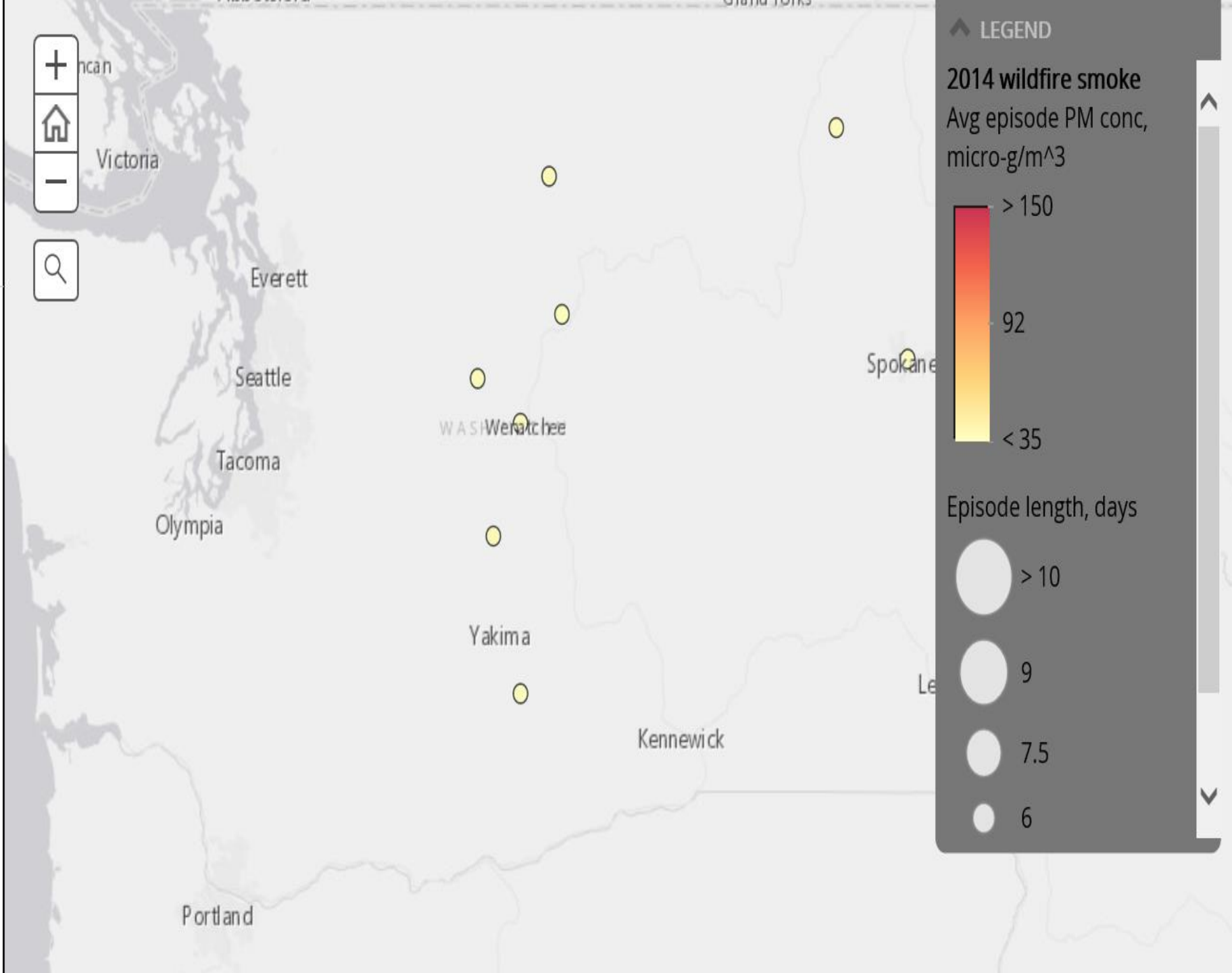
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More acres burned in WA this year (> 1 million) than in the last 5 combined.



Questions? [🔗](#)

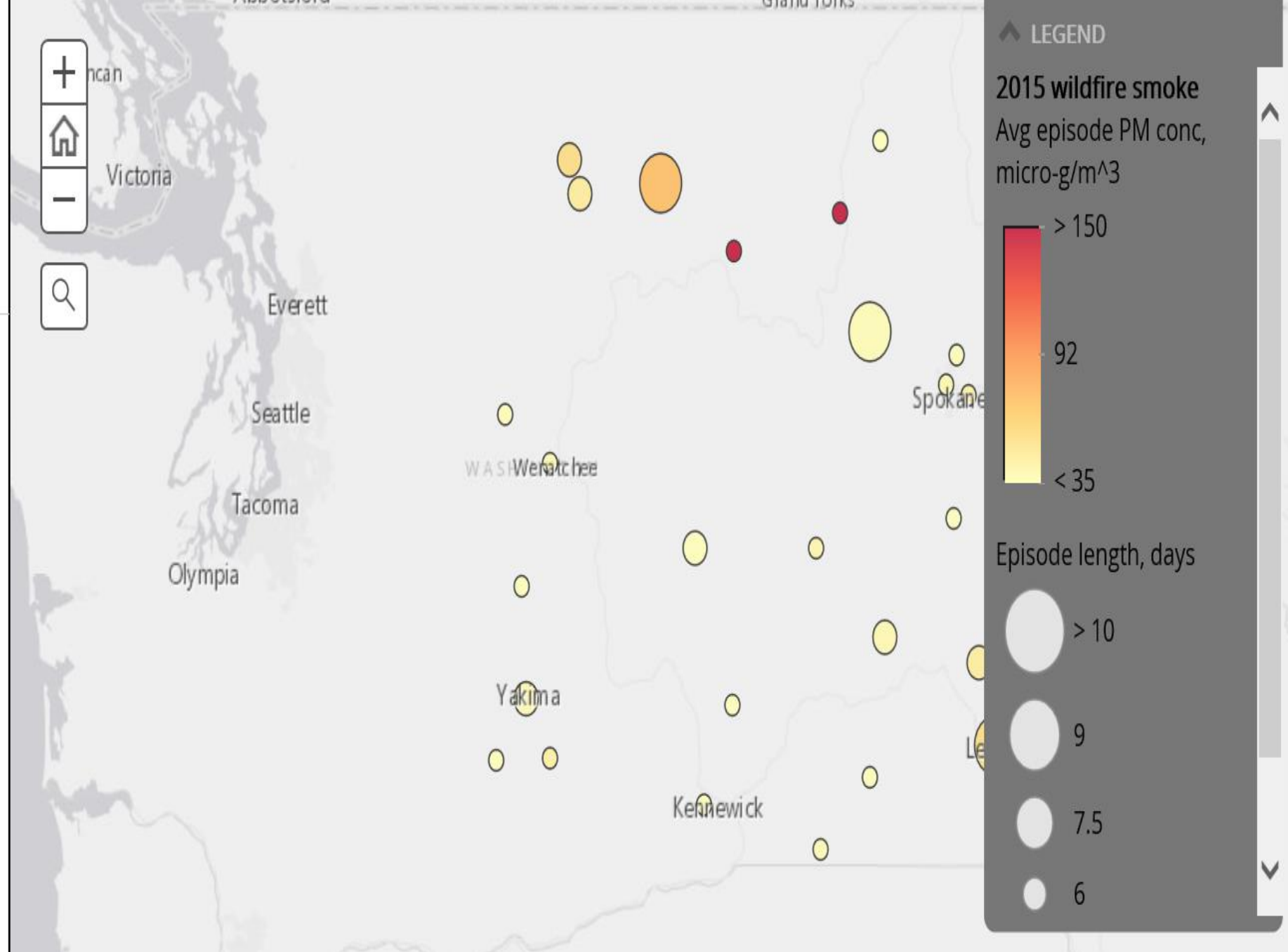
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2017 wildfire smoke

Smoke was very widespread compared to other years. Fires in British Columbia (early August), Montana and southern Oregon contributed (early September), as did many fires in Washington.

