

Filters in Our Lives, Decreasing Our Exposure to Wildland Smoke

Clean Air Spaces: Indoor Air Filtration to Protect Public Health During Wildland Fire Smoke Episodes - What are the Knowns and Unknowns



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Confederated Tribes of the Colville Reservation

1.4 Million Acres

12 Tribes

7,587 residents

3.5 people per square mile

**Major employers -
Tribal, County,
State and
Federal
governments**

**Lands in both
fee (20%)
trust (80%)**



Concentrations Over 985 $\mu\text{g}/\text{m}^3$



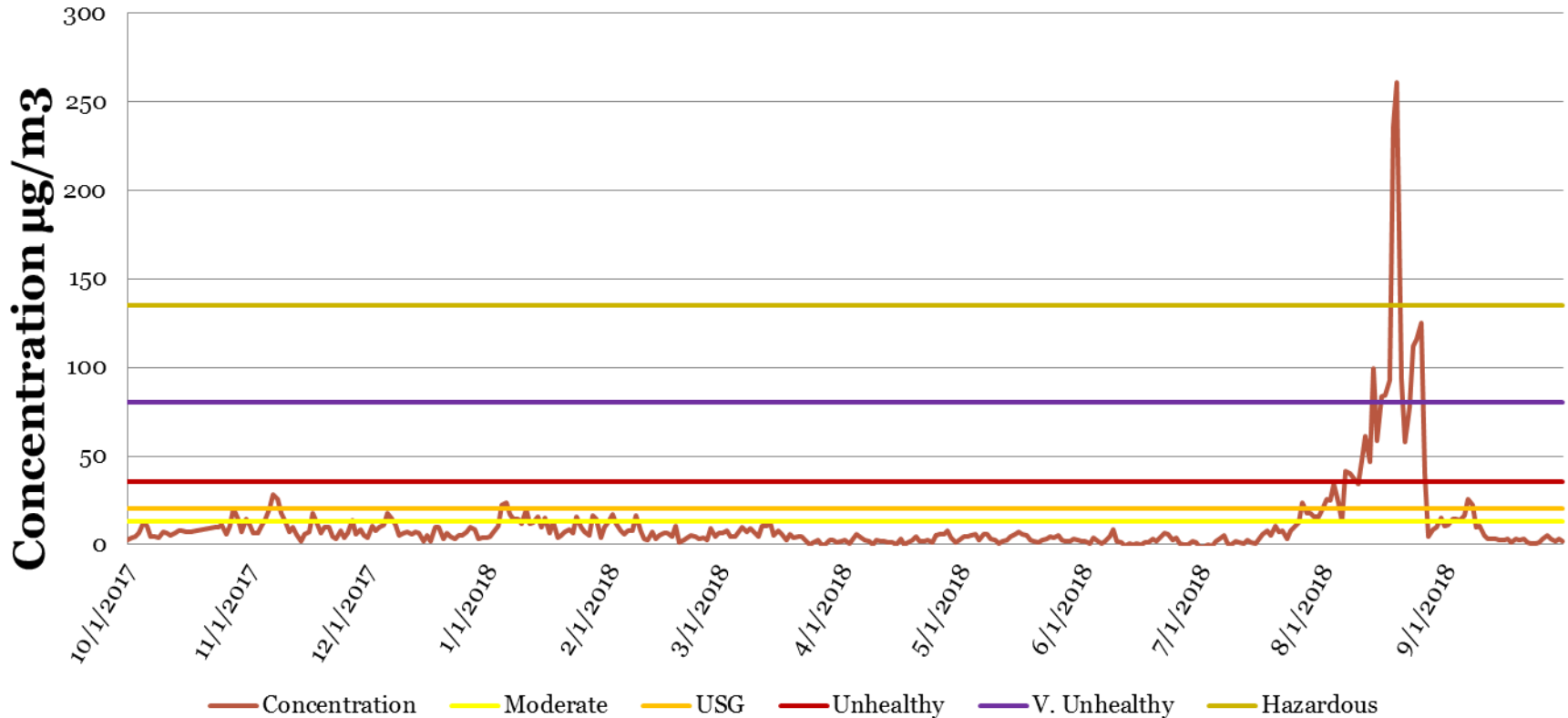
Indoor Air Quality

Measurements From the Morning of August 25 and 26,
2015

My Office	405 $\mu\text{g}/\text{m}^3$	Hazardous
Head Start	633	Hazardous
Administration Building	798	Hazardous
IHS Clinic Lobby	166	Very Unhealthy
Emergency Command	1415	
Food Distribution	1403	
Outside Concentration	980 to 2000	Catastrophic

What's Your Smoke Exposure

2018 A Year of Smoke, Omak Monitor 24 Hour Averages
WAQA



Your Sources of Smoke

	Month											
Source of Smoke	June	July	August	Septmeber	October	November	December	January	Febuary	March	April	May
Residential wood Stoves					[Blue shaded area]							
Residential Wood Debris					[Orange shaded area]						[Orange shaded area]	
Agricultural Fire					[Yellow shaded area]							
Prescribed Fire					[Red shaded area]						[Red shaded area]	
Wildfire	[Red shaded area]											
Industrial	[Red shaded area]											
Inversion Season					[Grid pattern]							

Air Filters Needed in Our Lives

Smoke will be in our lives

Our building will have smoke intrusion

We spend many hours indoors

Health messaging emphasizes staying indoors

**Air Filters are the best
investment to protect your
health**

Good



Better



Best

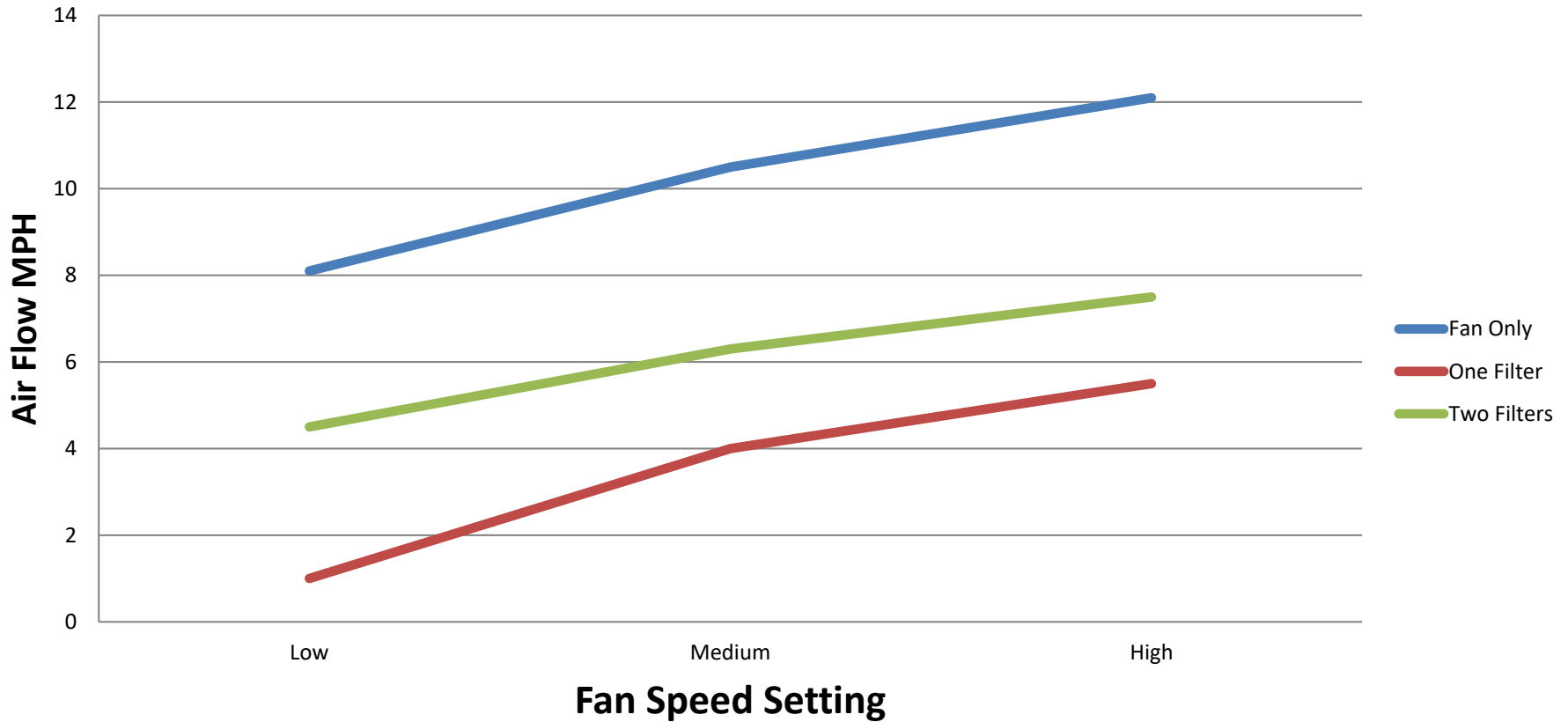


Box Fan / Filters

- Large rooms take up to 2 hours to clean the air, 25 minutes for a medium room and 15 for a small room*
- Fans on high speed twice as fast as low, 15 vs 35 minutes*
- Two filters in a V twice as fast a single, 20 vs 40 minutes*
- Faster than manufacture home filters on medium and high speed*
- Any filter restricts air flow
- Consider cooling options

Air Flow

Box Fan / MERV 13 Filter



Manufactured Air Filters

- Use in small rooms
- Continuous operation
- Maintain filters
- Cost of replacement filters
- Ozone generators
- Multiple units in home



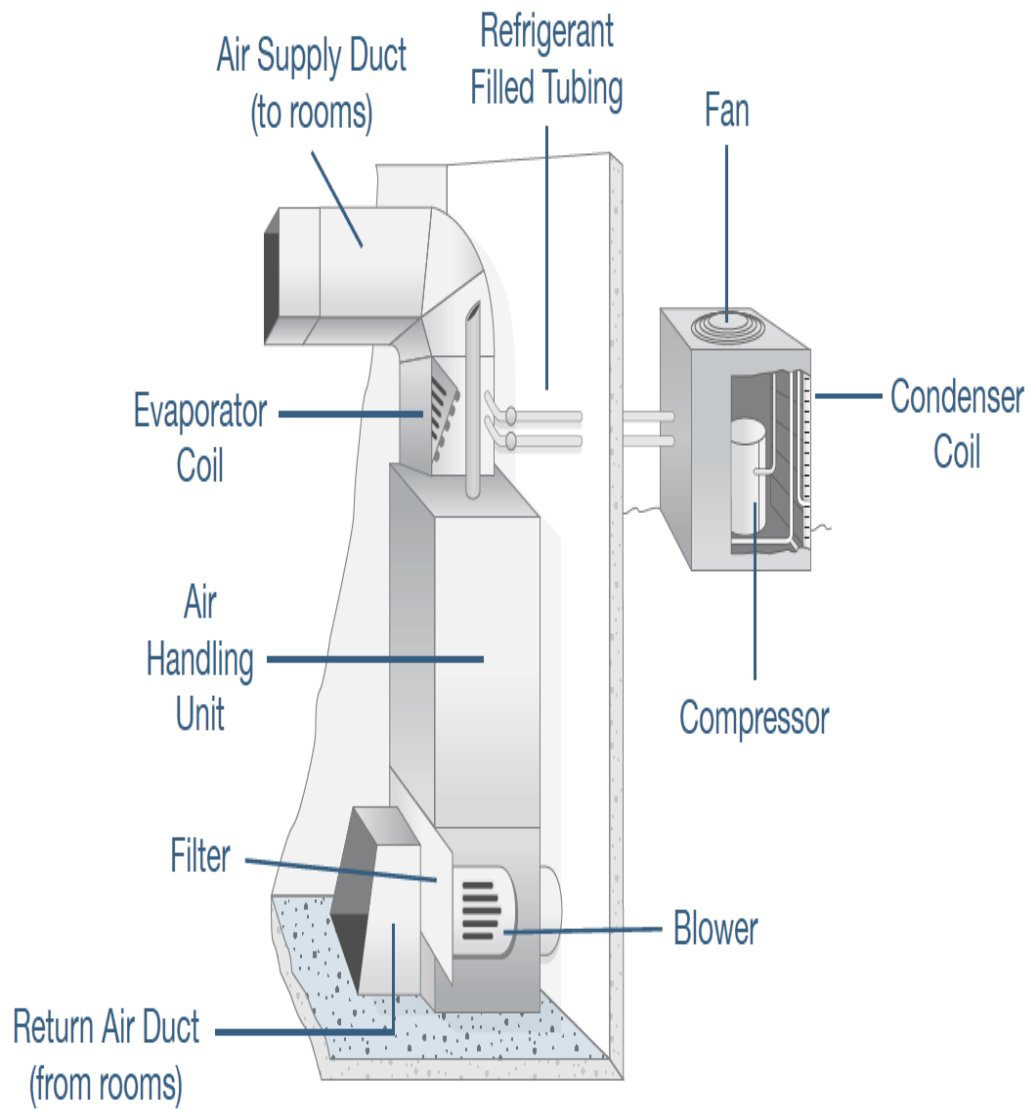
Whole Home Options

Duct AC Systems

- Central location/outside compressor
- Entire home
- Variable outside air
- Filters easily changed
- May not filter smoke

Ductless AC Systems

- Wall mounted/outside compressor
- Small areas or rooms
- No outside air
- Filter maintenance
- May not filter smoke



Cooling is Essential

- High ambient temperatures
- Managing windows and shades
- Cleaner air in the afternoon



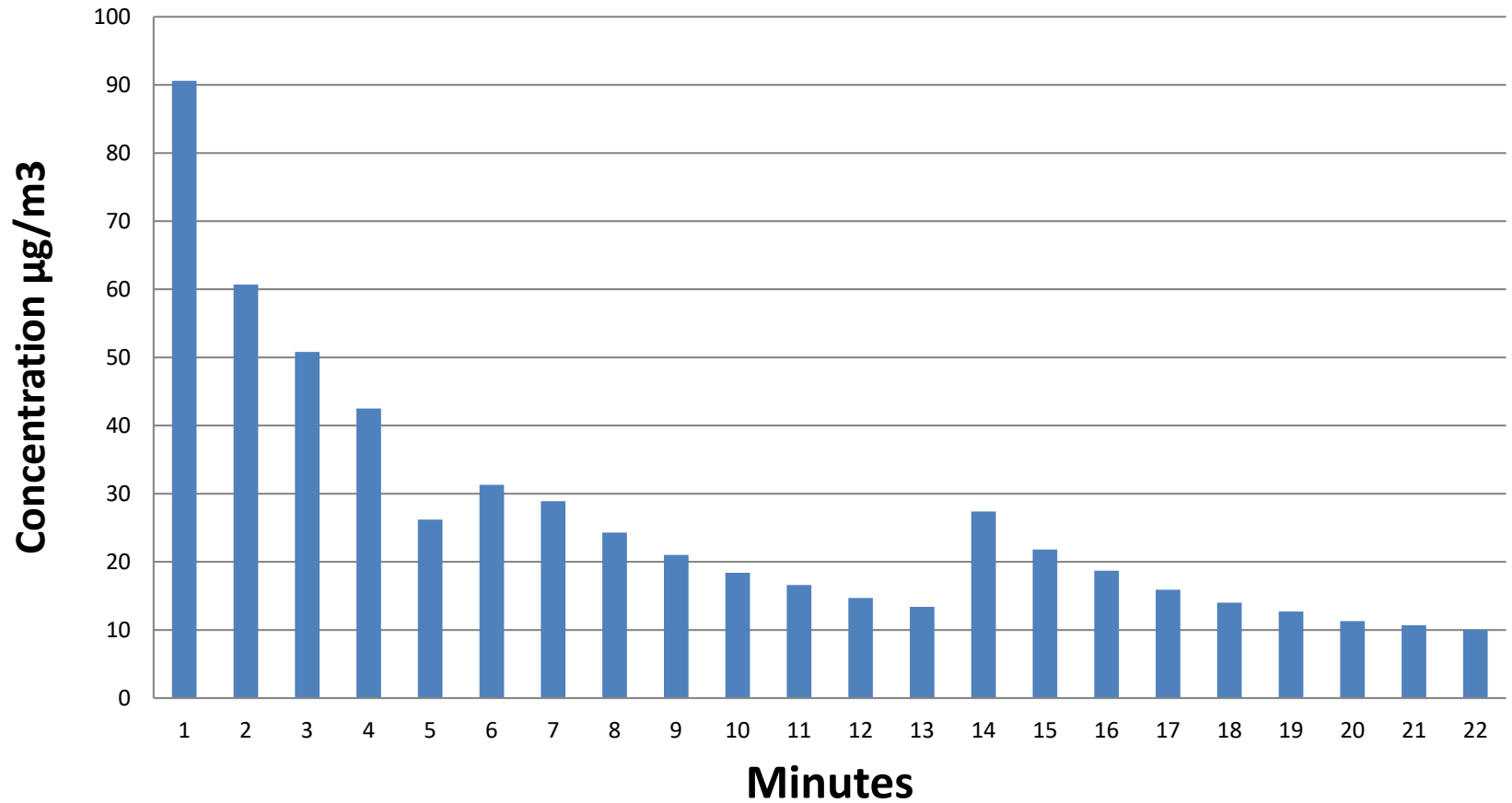


Vehicle Filters

- Always use recirculate option
- 75% reduction while parked in 15
- Less reduction when driving
- Replace filters between 25,000 and 35,000 miles

Vehicle Cab Filters

Vehicle AC



N-95 Masks

- Many people ask for them and few wear them
- Styles
- Works with beards
- **Needs to become acceptable to wear**



Next Steps

- Increase our knowledge of indoor smoke intrusion
 - Compile a checklist for evaluation of building
 - Develop technical guidance to evaluate building for intrusions
- Convene a two day workshop on Smoke Ready Communities to define and outline guidance

Conclusion

Protect your health by taking step to minimize your exposure to smoke during wildfire season and all year.

We have not reached the new normal

Learn how you and your community can
become

Smoke Ready

Contact

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