



The Air We Share: Air Quality Basics

Understanding Air Quality in Rockwood & Wilkes East

Department of Environmental Quality (DEQ)
and
Neighbors for Clean Air (NCA)

January 29, 2025
Community Air Action Planning (CAAP)

Welcome to CAAP!

Introducing Community Air Action Planning

- Collaborate to build community understanding of air quality
- Work together to pave the way for future action



Our Team



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CAAP Partners



Agenda

- Air Quality Basics
- Air Quality Monitoring
- Your Community & Monitoring



Glossary of Terms

- **µm:** micrometer or micron
- **AQ:** Air quality
- **AQI:** Air Quality Index
- **CAA:** Clean Air Act
- **CAO:** Cleaner Air Oregon
- **CO:** Carbon monoxide
- **DEQ:** Department of Environmental Quality
- **EPA:** Environmental Protection Agency
- **GHG:** Greenhouse Gases
- **HAP:** Hazardous air pollutants
- **LRAPA:** Lane Regional Air Protection Agency
- **NAAQS:** National Ambient Air Quality Standards
- **NCA:** Neighbors for Clean Air
- **NO:** Nitric Oxide
- **NO₂:** Nitrogen Dioxide
- **NO_x:** Nitrogen Oxides
- **O₃:** Ozone
- **PAHs:** Polycyclic aromatic hydrocarbons
- **Pb:** Lead
- **PM:** Particulate matter
- **PM₁₀:** Particulate matter with a diameter of 10µm or less
- **PM_{2.5}:** Particulate matter with a diameter of 2.5µm or less
- **SIP:** State Implementation Plan
- **VIP:** Vehicle Inspection Program
- **VOC:** Volatile Organic Compound

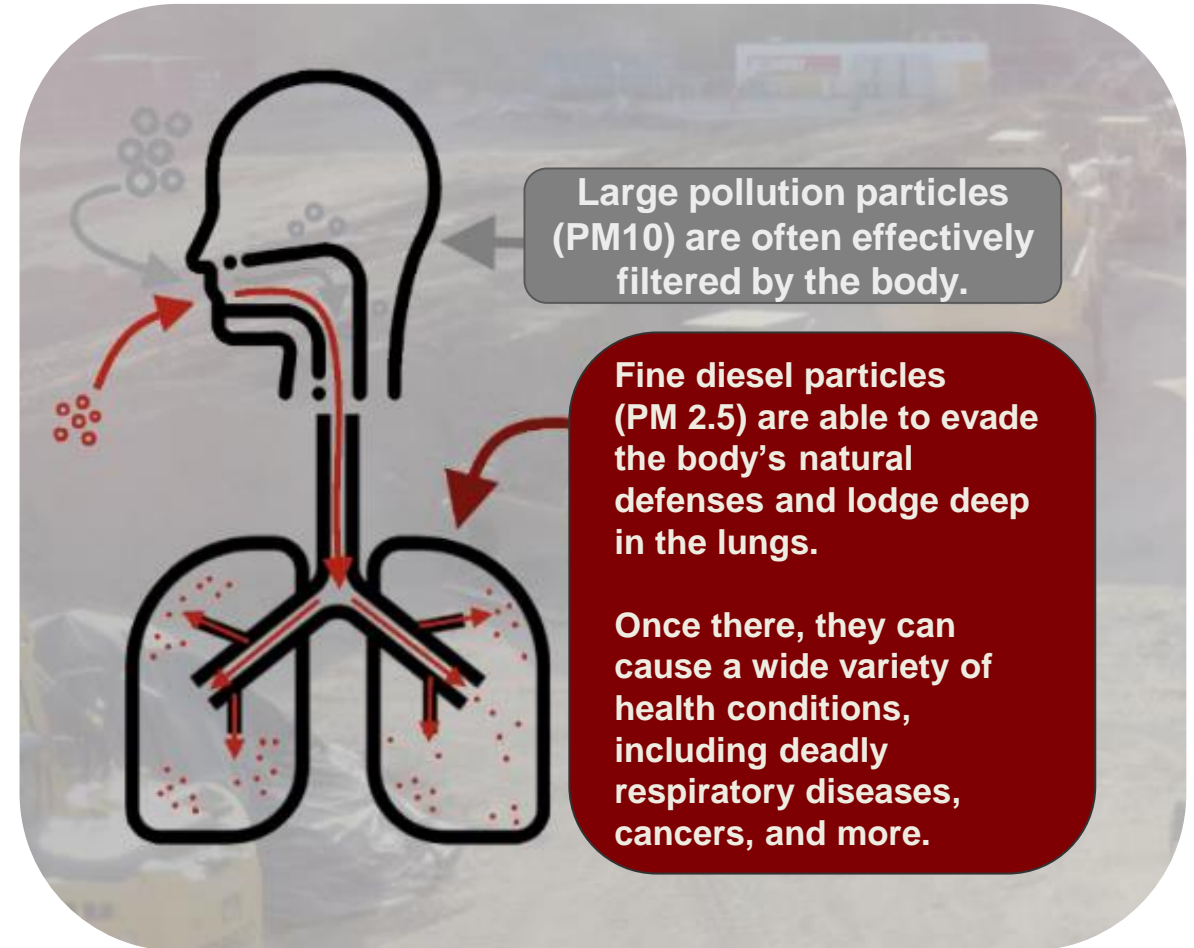
Why does air pollution matter?



Effects of Air Pollution

... On Human Health

- Nausea, dizziness, headaches
- Chest pain
- Irritated Airways
- Difficult to breathe
- Higher chance of heart attacks
- Increase in respiratory diseases
- Cancer with prolonged exposure



Effects of Air Pollution

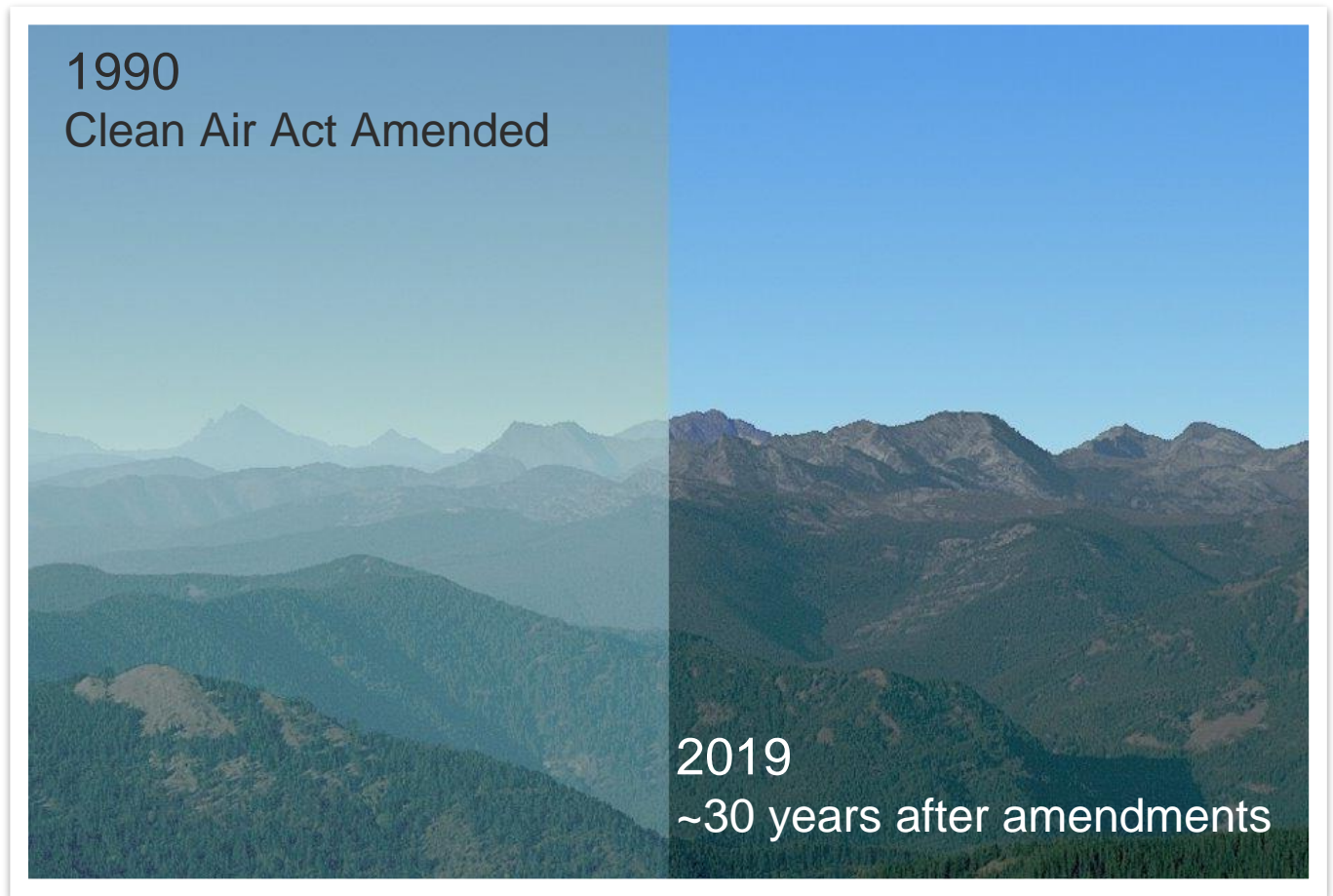


...On the Environment

- Reduced visibility
- Acid rain
- Harmful algal blooms
- Damage to crops and forests
- Depletion of the ozone layer
- Wildlife health decline
- Climate change

What is Air Quality?

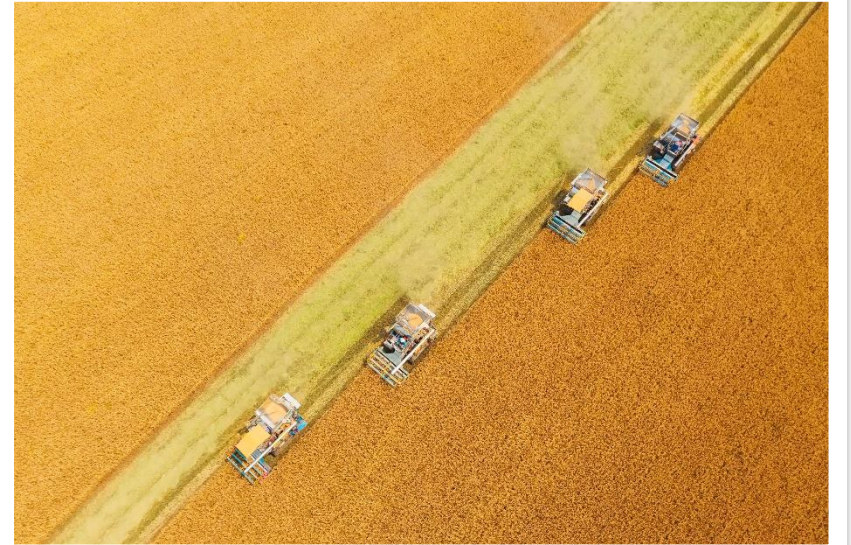
... it is a measurement of how much pollution is in the air.



Southern California Wilderness Area

What changes air quality?

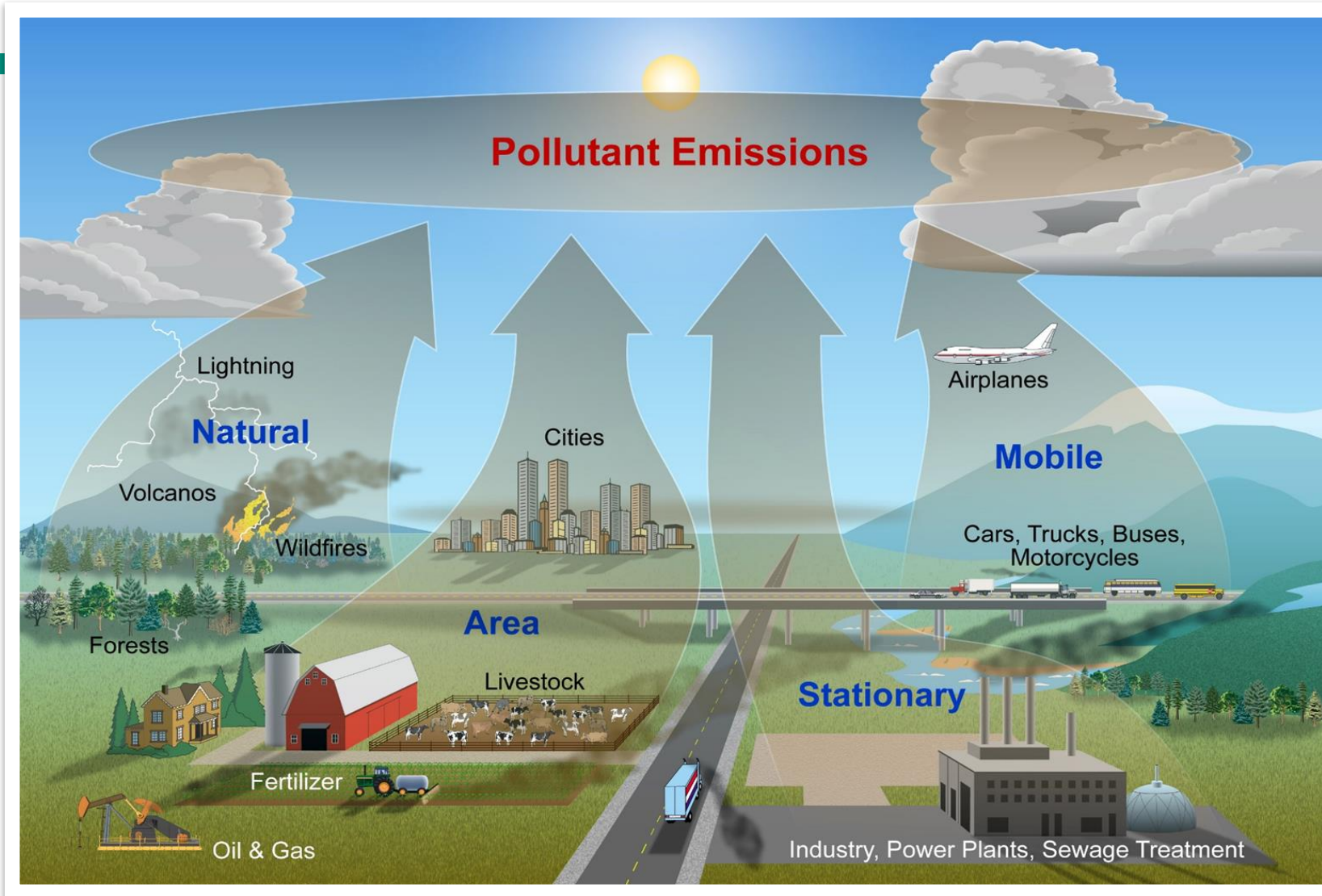
- Human activity
- Weather
- Location/geography



What is air pollution?



What Contributes to Pollution?



What are sources of pollution in your community?

- Transportation
- Wildfire
- Manufacturing



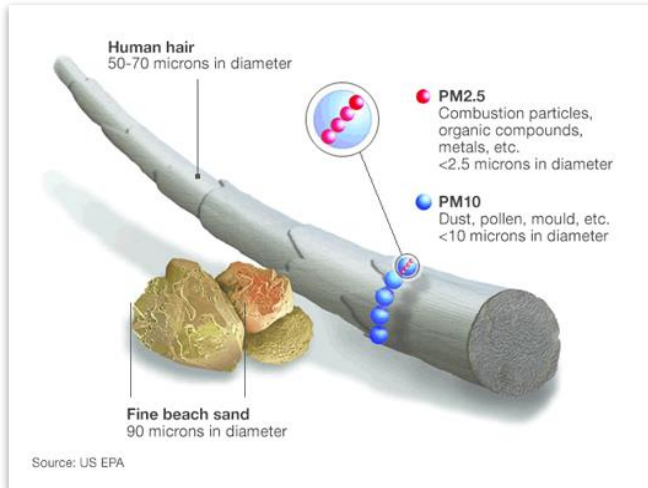
Air Pollutants

Categories of Pollutants

- Criteria Pollutants - 6 pollutants regulated by US EPA
- Hazardous Air Pollutants (HAPs) or Air Toxics
- Greenhouse Gases (GHGs)
- Emerging and Other Pollutants

Air Pollution – Criteria Pollutants

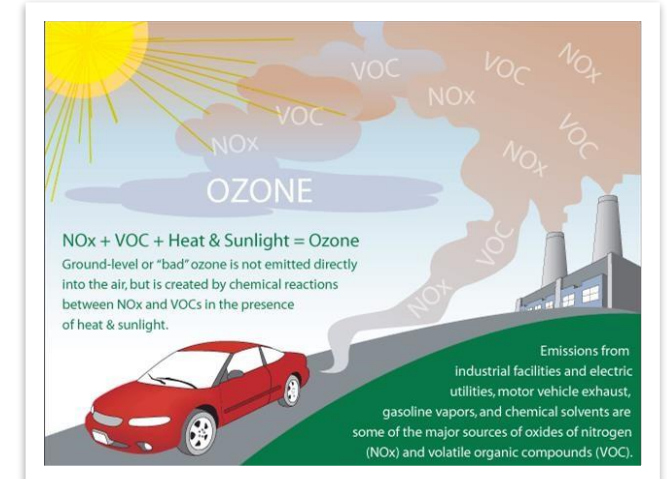
PM 2.5 and PM 10



Nitrogen dioxide (NO_2)



Ozone (O_3)



Sulfur dioxide (SO_2)



Lead (Pb)



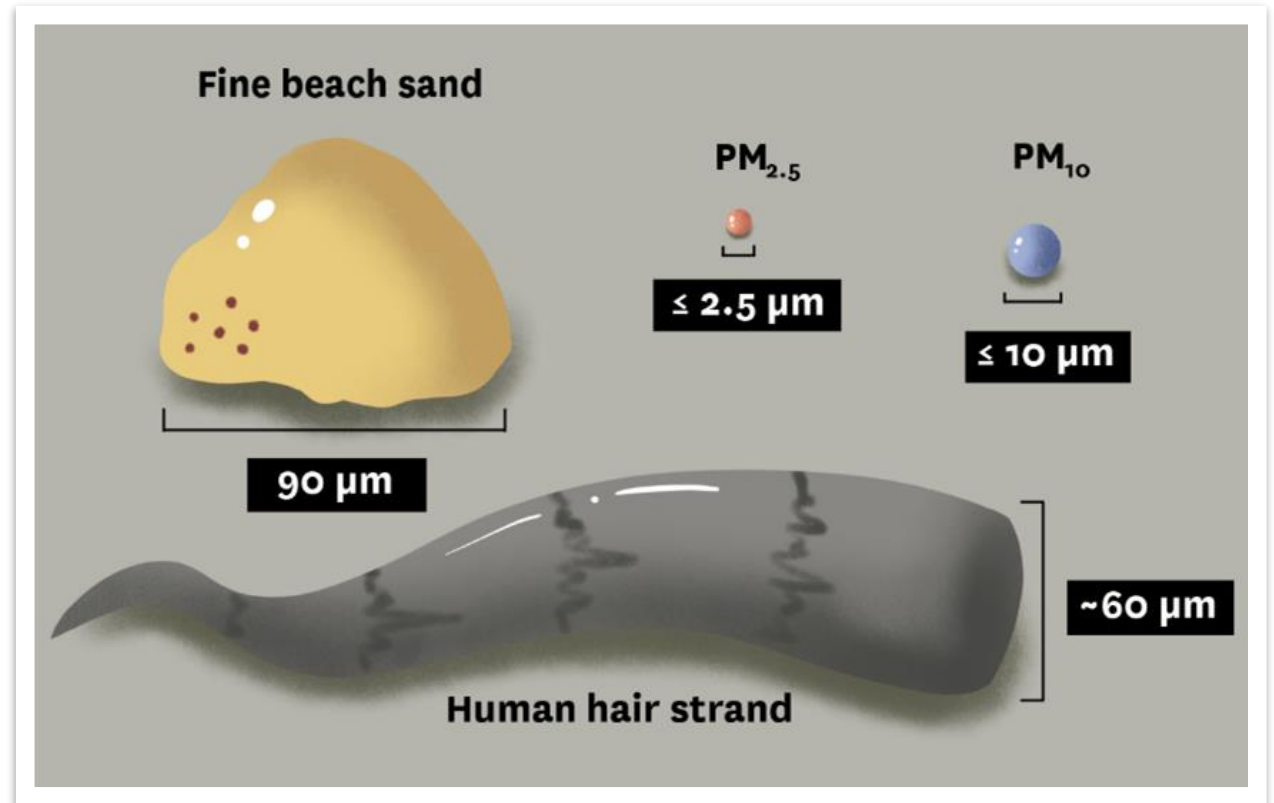
Carbon monoxide (CO)



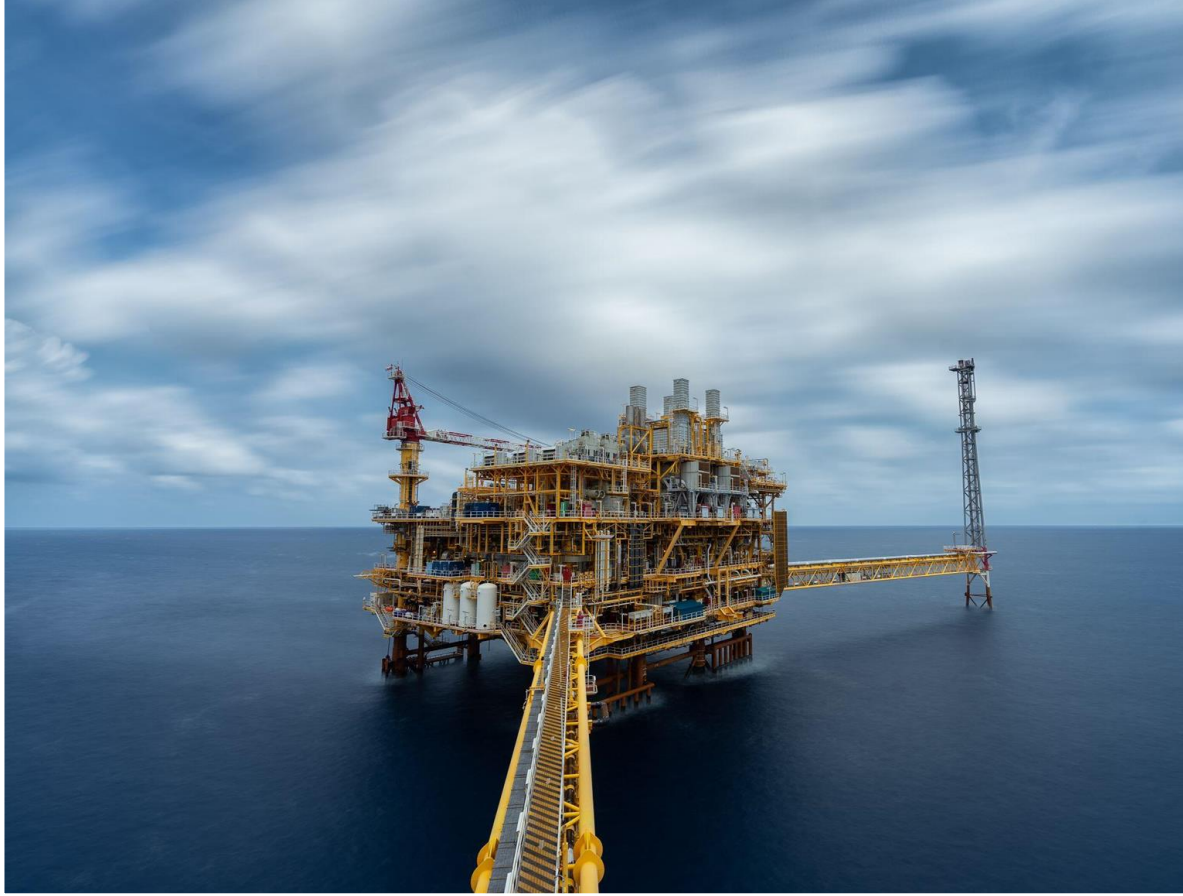
Particulate Matter Explained

Particulate Matter (PM)

- A mix of solid and liquid droplets in air.
- Includes acids, inorganic compounds, soot, metals, dust, pollen, and more.
- PM₁₀: 10 micrometers (μm) in diameter
- PM_{2.5}: 2.5 micrometers (μm) or smaller



Air Pollution – Air Toxics



Air Quality Regulations Work!



Who regulates Oregon's air?

Federal Agencies



Tribal Agencies

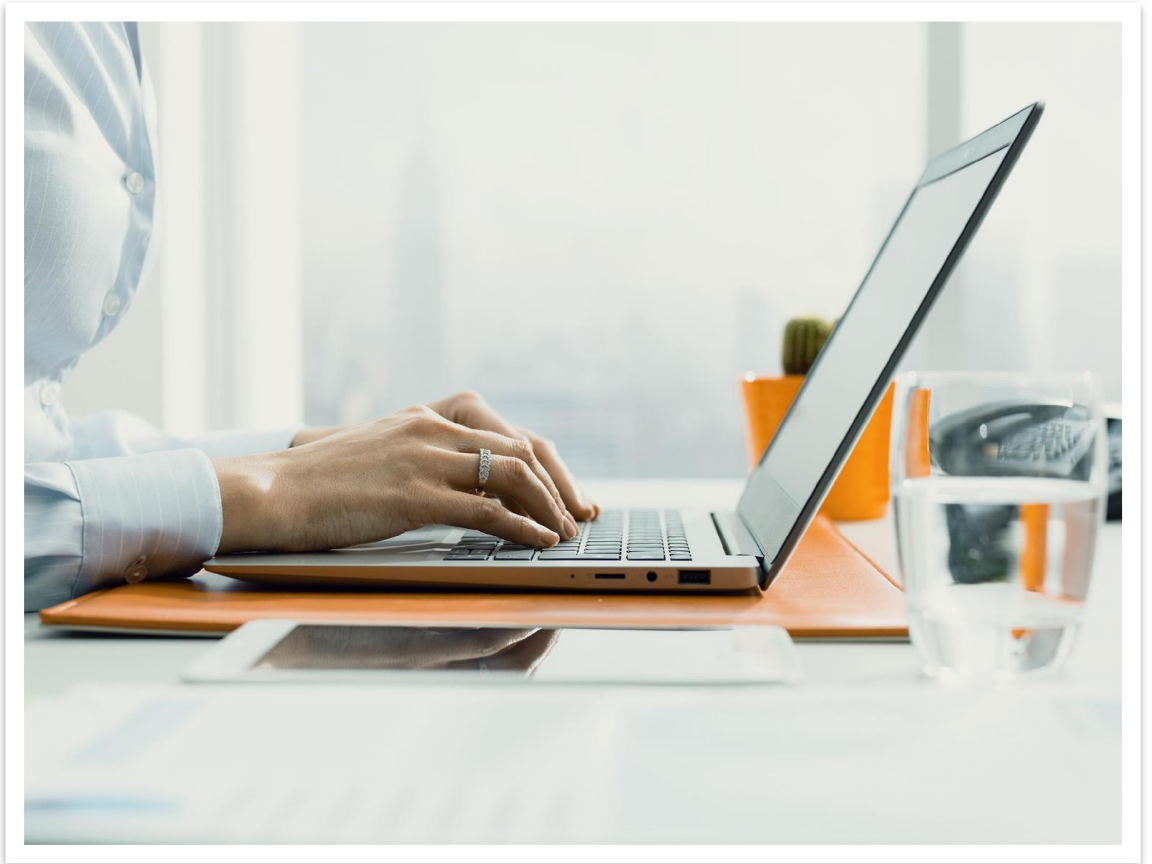


State/Local Agencies

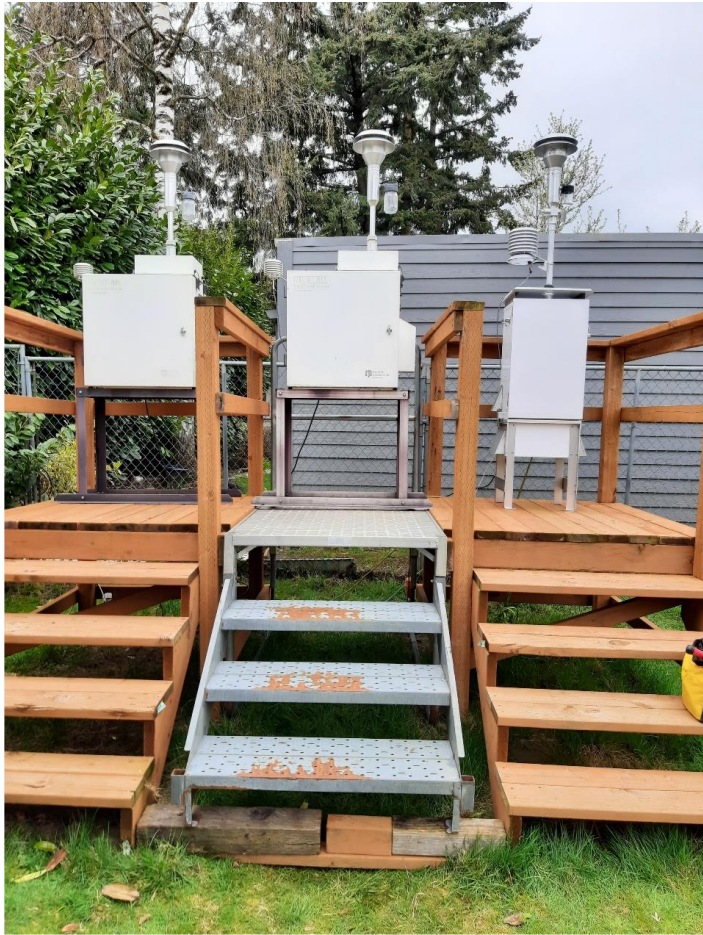


Air Quality Regulations

- Monitoring
- Planning
- Permitting
- Cleaner Air Oregon
- Vehicle Inspection Program
- Open Burning Program
- Climate Change Initiatives



Air Quality Monitoring



Air quality monitoring helps us understand the air we breathe!

Different monitoring tools serve different purposes.

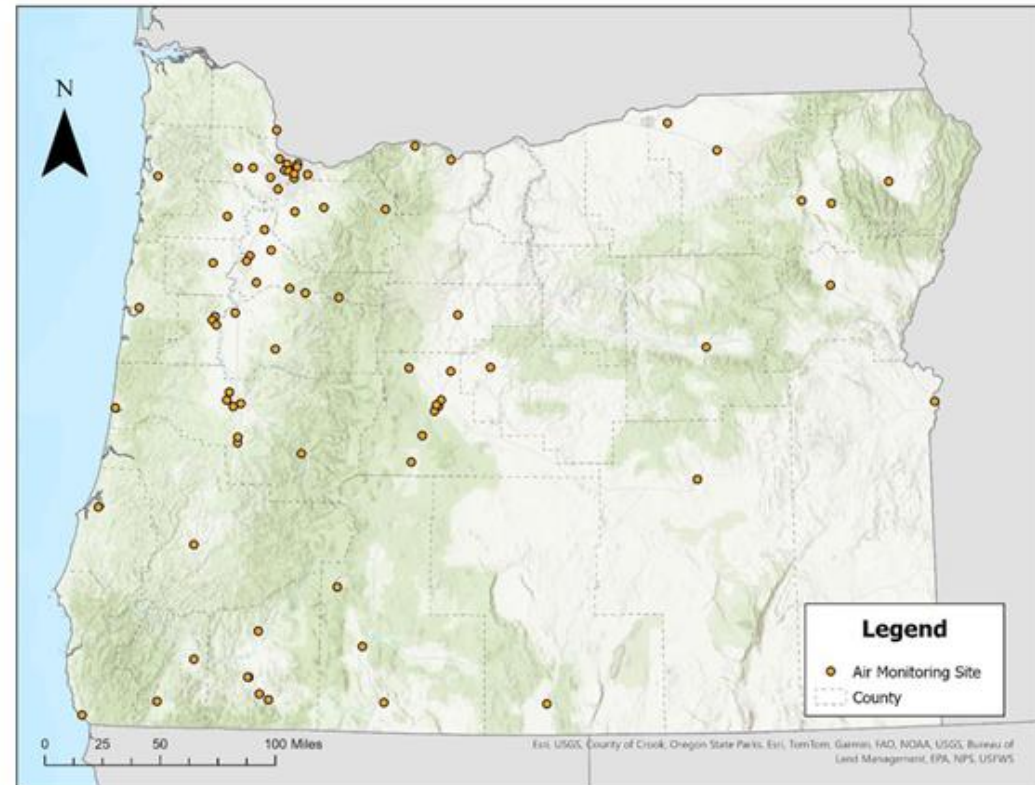
Key considerations:

- What pollutants are being measured?
- Where are the monitors located?
- What are the goals of monitoring?

DEQ Air Quality Monitoring

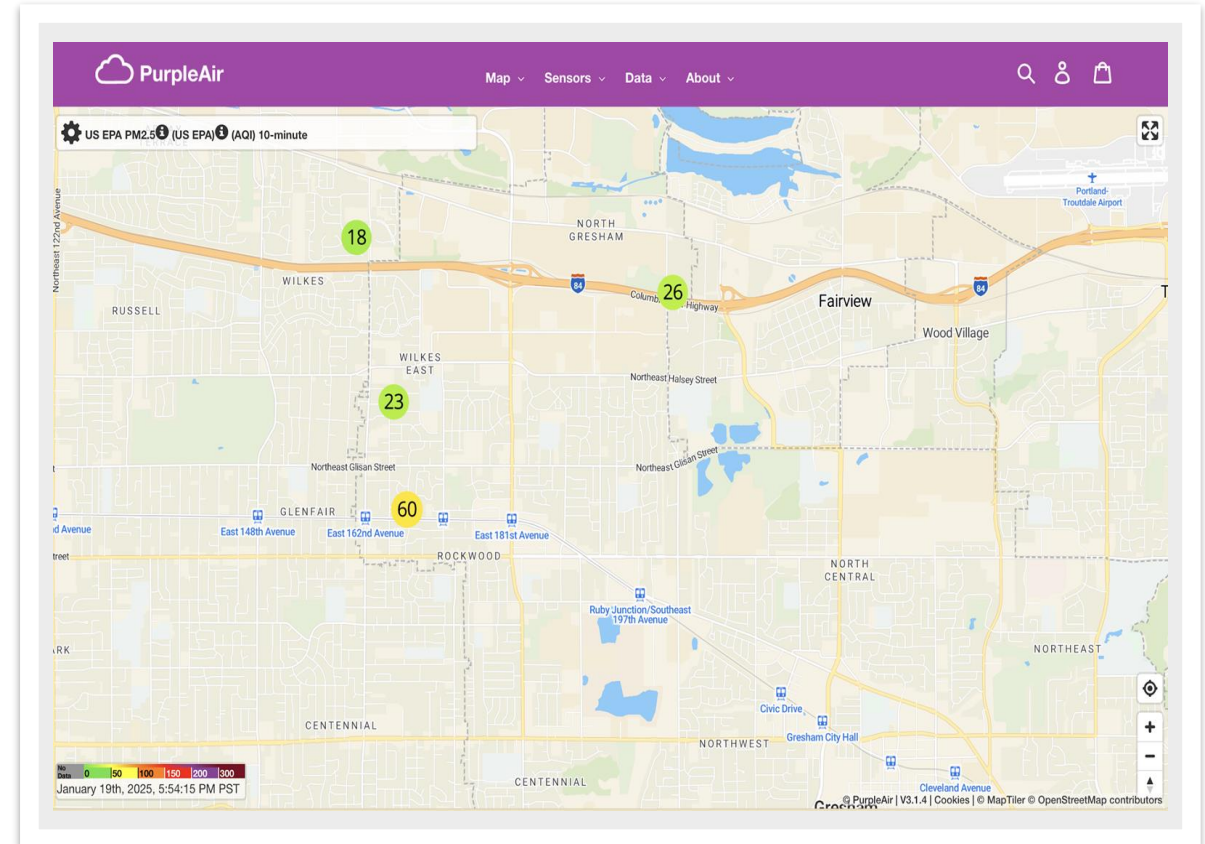
- Monitoring purposes
 - Provide information
 - Comply with laws
 - Make new laws
- Monitoring equipment
 - Pollutant specific
 - High cost
 - Strict operating rules

Figure 1: Ambient Air Monitoring in Oregon in 2022



CAAP Air Quality Monitoring

- Monitoring purpose
 - Investigate local air quality concerns
 - Community participation
 - Community action
- Monitoring equipment
 - Lower costs, fewer rules
 - Able to place more
 - Community members can host sensors

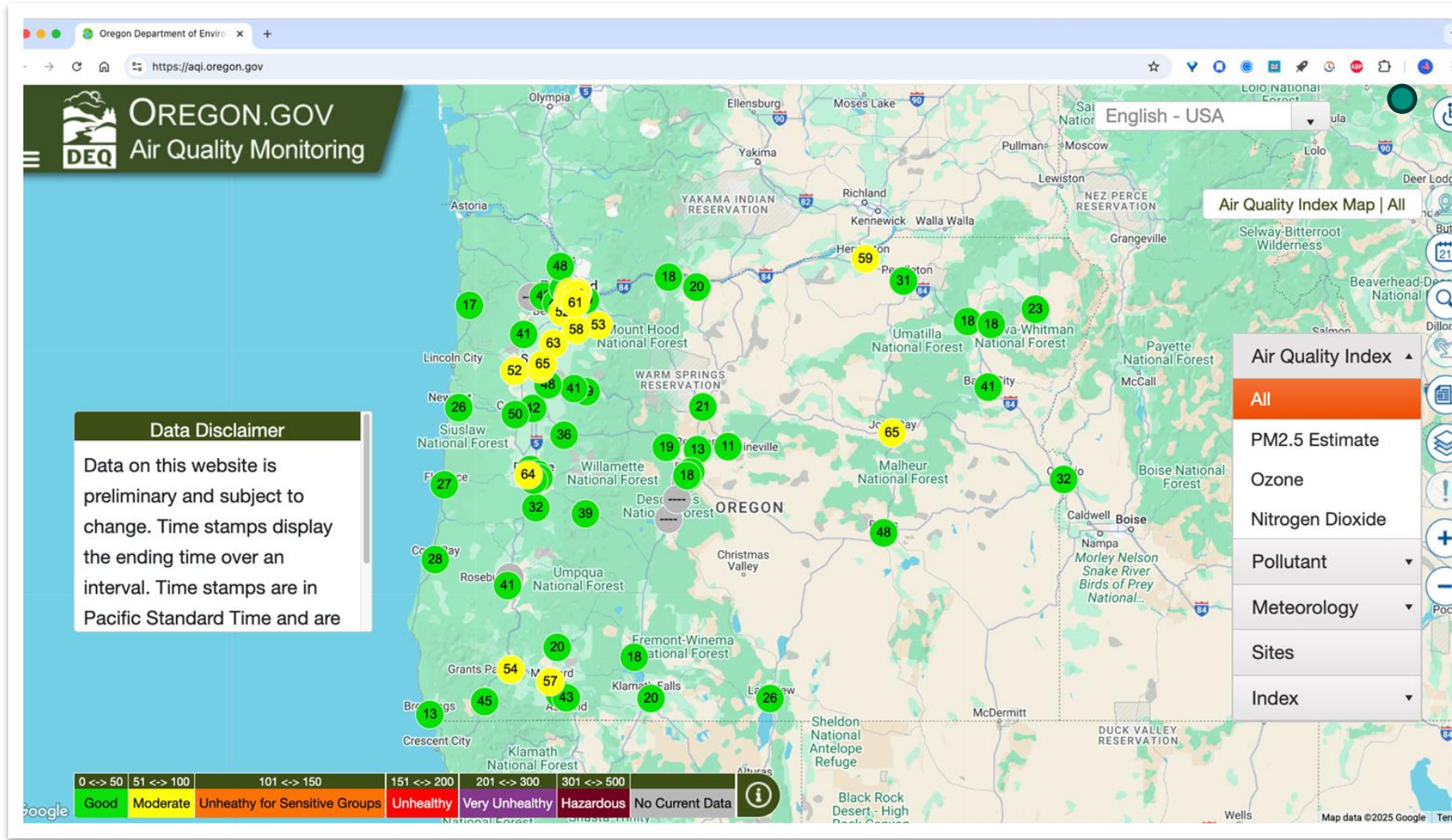


Air Quality Monitoring

- Multiple ways to measure air quality
 - Use one's own sense of smell and sight
 - Use monitoring equipment
 - Use satellites
 - Measurement method depends on how you want to use the data
 - Make individual decisions
 - Make regulatory decisions
 - Learn about environmental health
-



Oregon's AQI



<https://aqi.oregon.gov>

OregonAir App for iOS



OregonAir App for Android



Air Quality Index

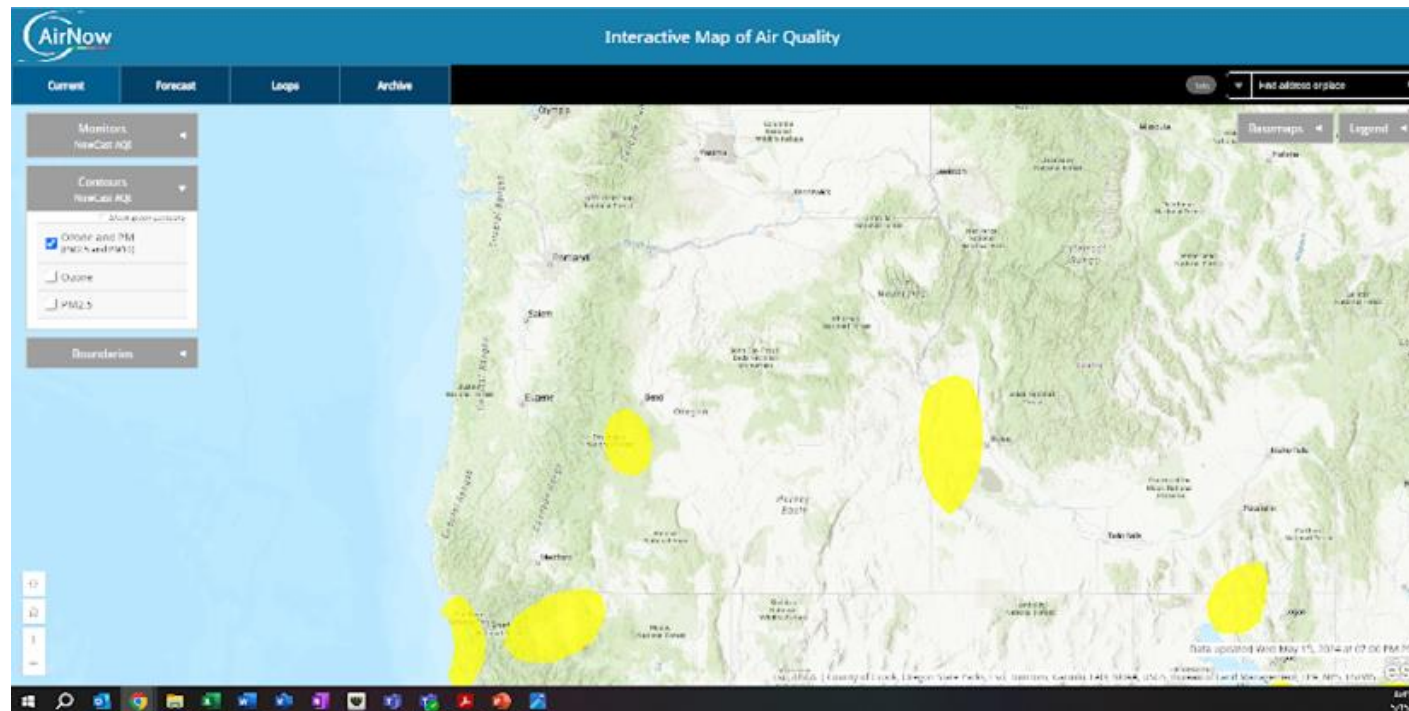
What is the AQI in
Rockwood and Wilkes
East today?



Air Quality Index		
AQI Category and Color	Index Value	Description of Air Quality
Good Green	0 - 50	Air quality is satisfactory, and air pollution poses no risk.
Moderate Yellow	51 - 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups Orange	101 - 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Unhealthy Red	151 - 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy Purple	201 - 300	Health alert: The risk of health effects is increased for everyone.
Hazardous Maroon	301+	Health warning of emergency conditions: everyone is more likely to be affected.

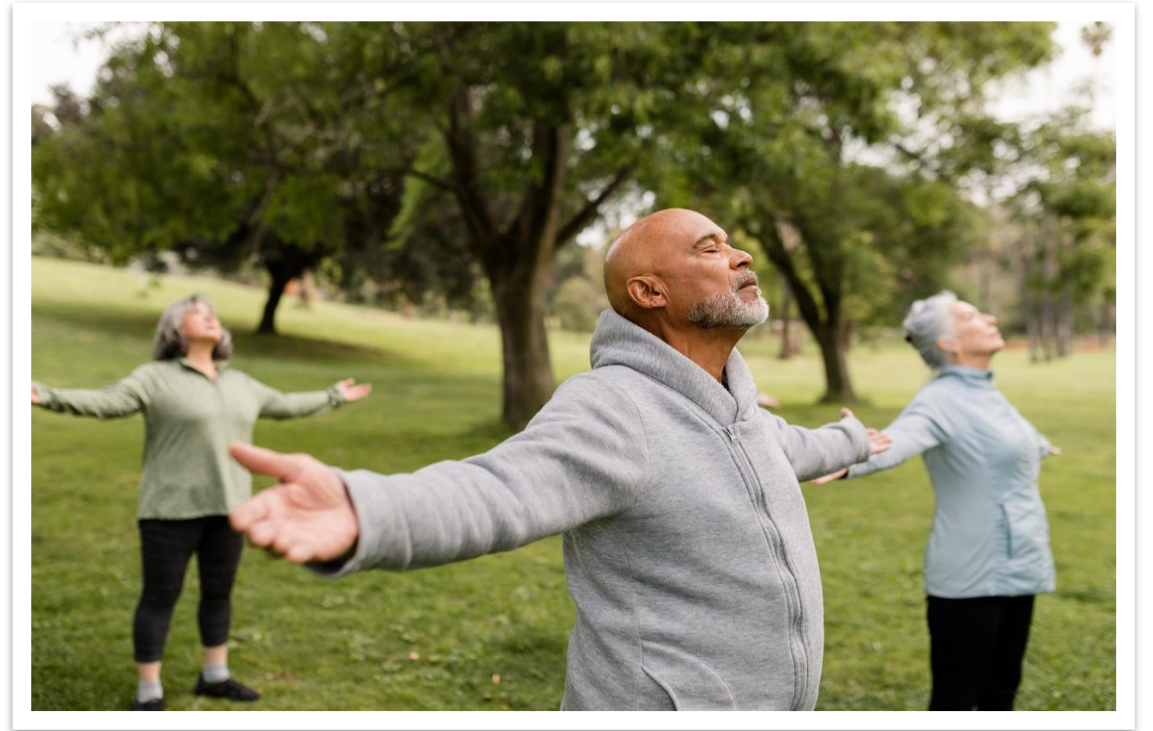
Other Reliable AQI Sources

- EPA AirNow: <https://www.airnow.gov/>
- Oregon Smoke Information: <https://www.oregonsmoke.org/>



Air Quality Matters!

Cleaner Air = Healthier Lives = Stronger Communities



How do you want to make a difference?

- Community Connections
- What do you want to learn?
 - Air Quality and Health
 - Taking Action for Cleaner Air
 - Climate Change
 - Indoor vs. Outdoor Air Quality
 - Wildfires
 - Transportation
- Empowering your community with funding



Questions?

Website:

www.ordeq.org/caap 

Email the DEQ team and NCA:

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