

# Oregon Air Quality Health Advisories Trigger Points



NW-AIRQUEST 2021 Annual Meeting  
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Oregon DEQ  
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# Air Quality Advisory Trigger Points For:

- Wildfire
- Ozone
- Winter stagnations and inversions
- Prescribed Burning

# Wildfire Smoke Health Advisory

- Follow Oregon Wildfire Protocol
- Collective advisory meeting w/ ODEQ, OHA, ODF, NWS, USFS, County Health, Tribes
- Meet as needed (about 2/3 times per week during events)



# Wildfire Smoke Advisory - Trigger Points

- PM2.5 over 35  $\mu\text{g}/\text{m}^3$  (USG) & expected to continue for over 8 hours  
**and/or**
- Ozone over 70 ppb (USG) & expected to continue for over 8 hours  
**and/or**
- Smoke expected to impact areas >USG & expected to continue for over 8 hours  
**and/or**
- Ozone triggers are close to USG outside of wildfires but smoke expected to contribute

# Wildfire forecasting resources

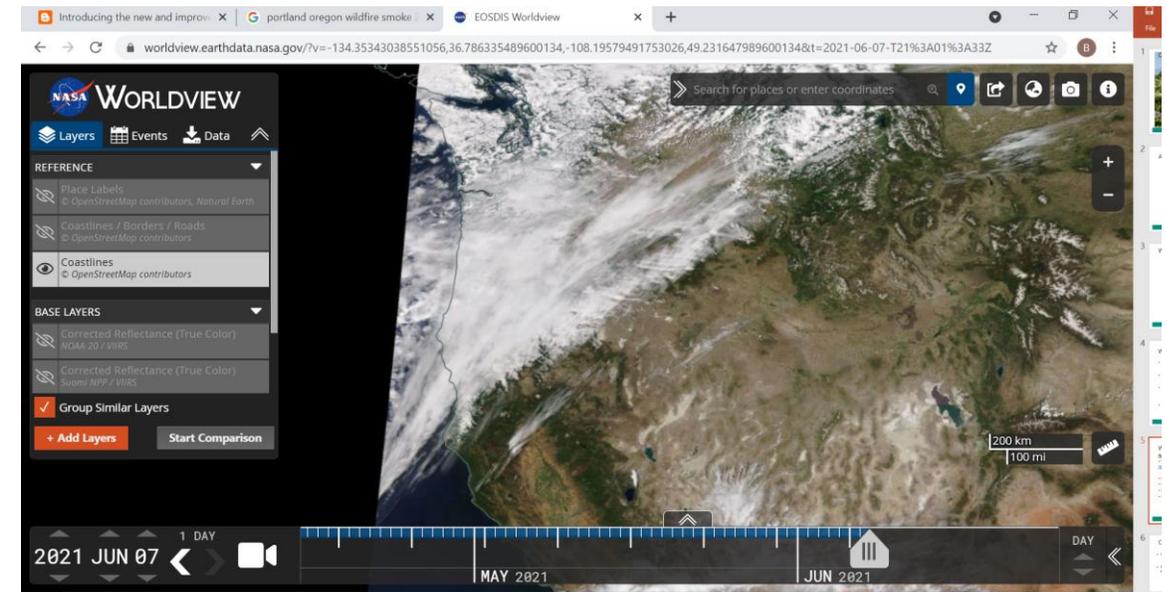
## Resources:

- Wildfire Smoke Protocol Discussions, as needed.

<https://www.oregon.gov/deq/FilterDocs/WFresponse.pdf>

- HRRR Model
- Blue Sky Model
- NOAA Satellite: Modis and GOES
- National Interagency Fire Center

<https://worldview.earthdata.nasa.gov/>



# Ozone Health Advisory – Trigger Points

- Ozone over 70 ppb (USG) & expected to continue for over 3 hours  
**and/or**
- NWS forecasts sunny or mostly sunny conditions, plus at least 3 of the following criteria:
  - High temperature  $\geq 90^{\circ}\text{F}$  ( $95^{\circ}\text{F}$  for smaller communities)
  - Daytime surface winds  $< 10$  MPH
  - Stagnation: High pressure ridge or stagnant weather pattern
  - Previous overnight 1-hour average  $\text{NO}_2 \geq 20$  PPB (N-Core site)
  - Current morning or day relative humidity  $\geq 75\%$
- $> 100^{\circ}\text{F}$ , Heat Advisory is in Effect and Ozone levels don't seem to go as high.

# Ozone forecasting resources

- Community Multiscale Air Quality Model-Forecasted Conditions (CMAQ)

[www.airnowtech.org](http://www.airnowtech.org)

- NWS forecast:
- AIRPACT
- WRF-GFS
- DEQ monitoring data:

## Air Quality Forecasting Training Videos

[Course Introduction](#)

[Speaker Introductions](#)

[Air Quality Overview](#)

[Why Forecast Air Quality](#)

[How to Forecast Air Quality](#)

[Meteorology — Temperature](#)

[Meteorology — Air Pressure](#)

[Meteorology — Water Vapor](#)

[Meteorology — Upper Air Pressure](#)

[Meteorology — Surface Pressure and Wind](#)

[Meteorology — Stability](#)

[Meteorology — Clouds, Fog, and Precipitation](#)

[Meteorology — Weather Cycles](#)

# PM2.5 Advisory (Woodstoves) - Trigger Points

- PM2.5 over  $35 \mu\text{g}/\text{m}^3$  (USG) & expected to continue for over 24 hours  
and/or
- NWS forecasts stagnation event < 48 hours (November to February):
  - Persistent surface inversions over the valleys
    - Warming to ~1,000 feet Above Ground, and then cooling.
  - Mixing height <1,000 ft. above ground
  - Transport winds < 5 knots
  - Surface winds < 5 mph
  - No precipitation
  - Conditions to persist > 48 hours



# PM2.5 (Woodstoves) Resources

## Resources:

- NOAA / NWS Weather Pages
- AIRPACT
- WRF-GFS
- Oregon DEQ AQI

# Prescribed Burning Advisory:

- Burn up drainage from a community
- Smoldering expected to occur
- Overnight inversions
- PM2.5 over  $35 \mu\text{g}/\text{m}^3$  (USG) & expected to continue for over 24 hours

