



Guidelines for Working in Smoky Conditions

Smoke from wildfires contains chemicals, gases, and fine particles that can harm health. Because the Pacific Crest Trail is in areas of high-risk for wildfire and smoke from wildfires – volunteers, partners, and staff are often presented with adverse conditions that demand specific safety considerations. Decision making is complicated by quickly shifting conditions that are often hard to identify and monitoring stations that are many miles from work sites. Field locations are often exposed and hot with crews maintaining high levels of physical exertion for prolonged periods of time, putting them at even higher risk.

The following guidelines are based on criteria from the AirNow Air Quality Index (AQI). The AQI is an index of particulate matter pollution (PM 2.5 and PM 10), and other hazardous chemicals like ozone. Crew leaders should use this guide to better recognize hazardous conditions and decide when mitigation or evacuation are prudent.

Pay attention to local air quality reports and the US Air Quality Index. When a wildfire occurs near you, watch for news or health warnings about smoke. If you can reschedule your trail maintenance activities to avoid unhealthy conditions, you should. Below are resources to help monitor conditions. There may be other region-specific resources available as well.

- Local AirNow AQI at your location: <https://www.airnow.gov/>
- AirNow Interactive Map: <https://gispub.epa.gov/airnow/>
- PCTA Interactive Map with AQI layers: <https://arcg.is/1WGr8L>
- PurpleAir Real Time Air Quality Map: <https://map.purpleair.com/1/mAQI/a10/p604800/cC0#5/40.29/-119.76>

Keep an eye on visibility. Prolonged periods in moderate categories (yellow) advise consideration of evacuation. Any amount of time in unhealthy categories (red) constitute evacuation criteria. **If the AQI is above 150, leave the field as soon as possible.**

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0-50	0-40
Yellow	Moderate	51 - 100	41-80
Orange	Unhealthy for Sensitive Groups	101 - 150	81-175
Red	Unhealthy	151 – 200	176-300
Purple	Very Unhealthy	201 – 300	301-500
Maroon	Hazardous	301 and higher	Over 500

From www.AirNow.gov US Air Quality Index (AQI) Basics



Avoid spending prolonged time in smoky environments. During exercise typical of trail crews, people can increase their air intake as much as 10 to 20 times over their resting level. Increased breathing rates bring more pollution deep into the lungs. If experiencing sporadically smoky conditions, consider resting the crew when smoke is present. If smoky conditions persist more than intermittently, leave the work site, and relocate to a different project if necessary.

Be aware of sensitive populations and watch for signs and symptoms of smoke exposure.

Assess your group. If there are sensitive populations present be extra vigilant in gauging conditions. Watch for signs of smoke exposure. If one person is showing symptoms, trail projects should be cancelled.

Signs and Symptoms:	Sensitive Groups Include:
<ul style="list-style-type: none">• Coughing• Trouble breathing normally• Stinging eyes• Scratchy throat• Runny nose• Irritated sinuses• Shortness of breath• Chest pain• Headaches• Asthma attack• Lingering fatigue• Fast heartbeat	<ul style="list-style-type: none">• People with lung diseases (asthma, COPD, bronchitis, emphysema)• People with respiratory infections• People with existing heart or circulatory problems• People with a prior history of heart attack or stroke• Older adults (over age 65)• Infants and children under 18• Pregnant women• People who smoke• People with diabetes• Persons with, or recovering from, COVID-19

Do not rely on dust masks for protection. For adults, NIOSH N95 or P100 masks, when worn correctly, have been shown to filter particles and improve the quality of the air being inhaled. During field season it may be prudent to keep these in your bag in case you encounter smoky conditions. However, this is only a single mitigation measure and should not be thought to render dangerous conditions safe.