













Opinion

What's with the haze?

BY TOM CARSTENS

Boy, this past summer was a doozy for haze, wasn't it? The cause, of course, has been all the wildfires burning just over the border in California. Every now and then, the weather conditions are just right for some of that smoke to reach our valley.

What's in that haze, anyway?

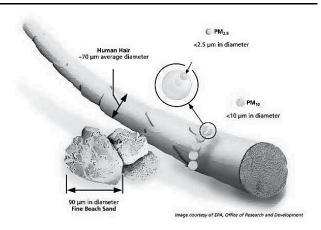
In rural areas like ours, haze almost always results from combustion of woody bio-mass—in summer, the culprit is wildfire, in winter it's usually slash pile burning or emissions from older woodstoves. An inversion air layer (i.e., colder air trapped beneath warmer air) develops in the valley, which prevents the air containing the smoke from rising up and dissipating. Dissipation also can be affected when the air is very calm, so wind doesn't get rid of the air, either. That's why, before we burn, we have to call the air ventilation index number in Jackson County at 541-776-7007, or in Josephine County at 541-476-9663. If the ventilation index is high enough (400 or above), then the valley won't get choked with smoke. This is also why both counties have had to adopt EPA standards for woodstoves and their operation. Newer woodstoves actually burn almost all of their own smoke, so particle emissions are very minimal.

Why all the concern with the smoke?

Besides cutting visibility, it can cause stinging eyes, runny noses, burning throats, coughing, and even bronchitis. But the health concerns are really much more serious, because the most dangerous aspects are those we may not even be aware of. The haze contains some very unhealthy stuff...stuff like carbon monoxide, which in the concentrations we experience, is an irritant to our respiratory systems. It also is full of suspended solid stuff, called particulate matter, abbreviated "PM." Ongoing scientific research has pinpointed the really small particulate matter as a serious health issue, because these microscopic particles can penetrate the lower reaches of the lungs, sometimes lodging in the small alveoli (air sacs) where oxygen enters the bloodstream and carbon dioxide is expelled. The worst of these particles are the really small ones, called PM 2.5 because they're only 2.5 microns in diameter. As you can see from the diagram, this is about 30 times smaller than the diameter of a human hair!

What's the problem?

PM 2.5 primarily affects the cardiovascular and pulmonary systems of all of us. But those most at risk are those with less than healthy hearts or lungs. Research suggests there is a higher risk of heart attack. Research has shown that children, asthmatics, and the elderly also suffer increased risk. Higher risk groups definitely should try to limit exposure to this poor quality air by staying inside if possible. All of us should try to limit our physical



activity outside.

Because of these health concerns, EPA has adopted stringent PM 2.5 air quality standards. The healthy air standard is 35 micrograms per cubic meter of air, which equates to an air quality index (AQI) of 50. A PM 2.5 air quality index over 150 is basically unhealthy for everyone.

Air quality is monitored all over the state; all of Oregon is currently in compliance. The monitoring station in the Applegate Valley is located at Provolt. It continually samples our air quality. You can access this information very easily by going to the DEQ website at www. deq. state.or.us/aqi. You can receive recent Applegate Valley daily readings by clicking on "Past AQI's" and up-to-the minute information by clicking on "Hourly Data." Or you can see hourly pollution indices for any region of Oregon by clicking on "Air Quality Index" at the Quick Link section of the DEQ home page.

So, if we're in compliance, why the fuss?

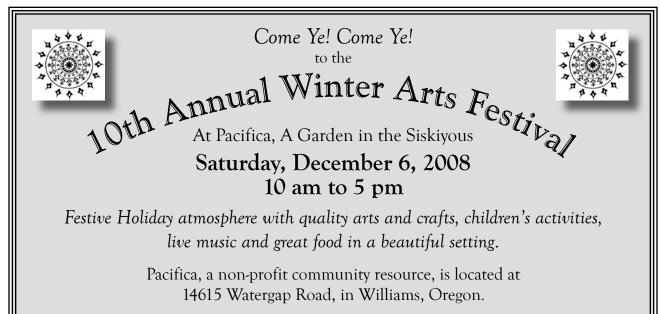
The problem is that air quality results are 24-hour rolling averages. Within any 24-hour period, the air quality can deteriorate rapidly and then improve just as quickly without making much of a dent in the overall averages. Additionally, local conditions can vary—the monitor might not pick up poor air quality in a side valley, for example, or wind direction can skew results.

What can we do to cut our risk?

When it gets thick out there, it's best to curtail outdoor physical activity. Put off mowing the lawn for another day. Settle indoors with your windows closed. If you have an air conditioner or air filter, turn it on. Try to think of something for the kids to do inside. For those of you who don't have the option of retreating indoors, you can purchase face masks that will help filter out the microscopic particles. Look for the PM 2.5 standard.

(Thanks to the Jackson County Office of Environmental Health for helping with this article.)

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