

Submitted by
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Council mtg 9/2/14
Bioscience
Committee

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ENVIRONMENT

Trees That Pollute

Some greenery makes smog levels worse

The next time you walk past a poplar or a black gum tree on a busy city street, think twice before taking a long, deep breath. Although these trees produce oxygen, they also release compounds that can react in the air to create lung-damaging ozone.

"It is kind of a surprise," says Galina Churkina, a senior fellow at the Institute for Advanced Sustainability Studies in Potsdam, Germany, who studies urban tree emissions. When certain trees dominate a street, they can raise the ozone level considerably. At around level. ozone is an oxv-

other respiratory illnesses.

Like vehicles and power plants, trees emit airborne chemicals called volatile organic compounds (VOCs), which in the presence of sunlight react with nitrogen oxides in vehicle fumes to form ozone, one of the components in smog that makes it a health threat. VOCs come out of tailpipes and smokestacks as a by-product of burning fossil fuels; the trees emit them in part to repel insects and to attract pollinators. Species such as birch, tulip and linden release very low levels of VOCs, but others such as black gum.

levels that can be eight times higher than those linked to the low-impact trees.

Churkina and her colleagues have not identified specific cities that contain too many of the top VOC emitters. That is up to urban planners. Because sunlight is needed to form ozone, and the reaction is more vigorous at higher temperatures, cold, cloudy cities have fewer worries than warm, sunny ones. Yet the problem could worsen because of climate change.

Does this mean cities should start cutting down the top emitters? No. Churkina

scattered on city streets. Understanding, however, that a linden tree is better than a poplar can help metropolitan areas avoid problems. For example, "plant a million trees" projects are becoming popular as a way to store carbon dioxide, slow heat rise and soak up storm water. "We want them to be careful about choosing the best species," Churkina says. She will be meeting with Berlin officials this summer, and Boulder, Colo., is examining the issue.

Of course, there is another solution. Reduce car emissions. and cities won't have to