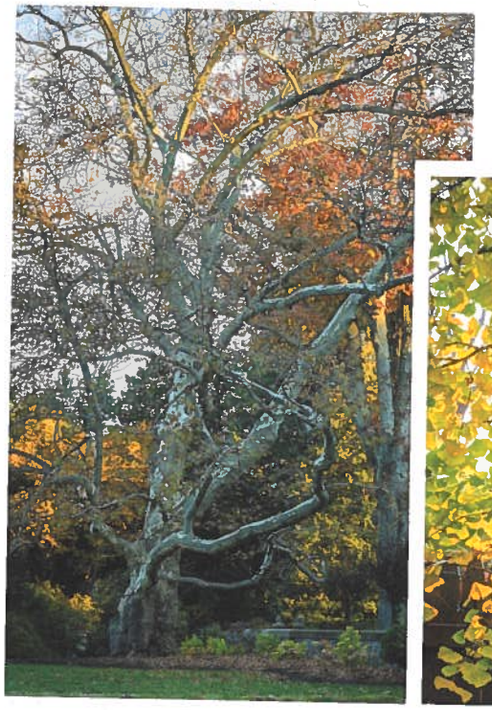

American sycamore (left) and ginkgo (below) are trees that will live for decades in densely populated areas.

ARBOREAL AIR CLEANERS

Q: What trees are best at thriving in urban air pollution, and can they help mitigate that pollution?

SHORT ANSWER: Long-lived trees with large canopies are better than small trees for removing pollutants from the air. But not all such trees thrive in urban conditions.

THE DETAILS: The question covers two different topics, says **Dana Dentice, a certified arborist and PHS urban forestry program manager**. "Trees that 'thrive' in highly polluted conditions aren't necessarily the ones that are best at removing air pollution, and vice versa," she explains. Species tolerant of air pollution include littleleaf linden (*Tilia cordata*), a non-native that is used as a street tree; male specimens of the very adaptable ginkgo (*Ginkgo biloba*), a tree that is considered a living fossil because its kin date back about 150 million years; London planetree (*Platanus* × *acerifolia*), an American sycamore (*P. occidentalis*) and Oriental planetree (*P. orientalis*) cross that can be seen in some older parts of Philadelphia, where it has been used as a street tree; and Kentucky coffeetree (*Gymnocladus dioica*), a native that thrives in poor soils, drought, and most urban conditions.

In general, larger trees are better than smaller trees at removing pollution because they have a greater leaf area to intercept and absorb chemicals and particulates in the air, Dentice says. And trees with hairy leaves capture more particulate matter on leaf surfaces than those with smooth ones. Smaller trees such as Japanese tree lilac (*Syringa reticulata*) and Kanzan (formerly "Kwanzan") cherry (*Prunus* 'Kanzan') can do well in urban environments, but they will not be workhorses in reducing air pollution as they lack adequate leaf surface. "The U.S. Forest Service has a new online tool, i-Tree Species (species.itreetools.org), that tells you which trees are good for removing air pollution and offering other environmental services," Dentice says.

ROB CARDILLO (TREES); RODIMOV/SHUTTERSTOCK (ONIONS)