

# OUR FLORIDA URBAN FORESTS DO REDUCE AIR POLLUTION

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By Ralph E. Mitchell

Good news - trees are truly good for our urban areas in Florida! Trees help our Florida environment by removing air pollution thus affecting air quality as well as conserving energy earmarked for cooling and heating needs. As you begin 2008 and may be planning to plant a tree or two, consider the benefits that such an effort can make.

Studies have shown that trees in our urban areas remove air pollution. Pollution particles, influenced by wind and gravity, drop on tree leaves and actually stick to the leaf surface. While some particles may be picked back up by the wind, some are washed off by rain, or even end up on the ground with fallen leaves and twigs. If air pollution in a gaseous form ends up on a tree leaf, it is absorbed or enters into the leaf through the tiny openings called stomata. The USDA Forest Service used a computer model to estimate how pollution in three cities - Jacksonville, Tampa, and Miami - fared in using their urban forests for removing air pollution. The air pollutants that were removed included ozone, nitrogen dioxide, sulfur dioxide, and carbon monoxide. With a wide range of tree coverage in each city, and a pollution removal rate measured in pounds per acre of tree coverage, Tampa showed the best removal, followed by Miami with Jacksonville coming in third. The pounds per acre of tree cover went from a high of 127 pounds per acre to a low of ninety-five. It was found that dense evergreen tree plantings were better for pollution particle removal than scattered deciduous tree plantings.

Trees also improve the environment by moderating temperatures, or in other words, creating microclimates. Microclimates influence pollution production when trees shade buildings and assist with cooling needs. This natural

cooling in turn reduces energy needs and, of course, potential pollution. Trees can also act as a windbreak and block cold air. In either case, less energy is needed and potential power plant emissions were reduced accordingly. Poorly placed trees may have the opposite effect. Scattered trees were found to cause more ground heating and wind reduction. In this case, cooling does not take place and pollution can be trapped under the urban forest canopy.



When planting urban trees keep in mind to select types that are resistant to pollution and can tolerate urban sites. Also, select trees that require little maintenance as low maintenance trees demand less in the form of leaf blowers, chippers and chainsaws and subsequent pollution issues. Longer-lived trees also make better selections as they live longer and, accordingly, provide pollution removal benefit for a longer time.

Overall, planting trees pays big dividends in air quality and energy savings for the long run. For tree selection, you may consider checking out

the UF/IFAS Florida-Friendly Plant List for some ideas:

<http://fyn.ifas.ufl.edu/materials/list.pdf>.

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For more information on all types of trees suitable for area, please contact our Master Gardeners on the Plant Lifeline at 941.764.4340 from 1:00pm-4:00pm Mondays, Wednesdays, and Fridays. Our office is located at 25550 Harbor View Road, Suite 3, in Port Charlotte. Our **Plant Clinics** are available across the county:

- **Demonstration Garden (6900 Florida Street, PG)** Thursdays 9:00am-11:00am.
- **Englewood/Charlotte Public Library** Thursdays 10:00am-1:00pm.
- **Mid-County Regional Library** 1<sup>st</sup> and 3<sup>rd</sup> Thursday of month 1:00pm-3:00pm.
- **Edison College Learning Resources Library** 3<sup>rd</sup> Tuesday of month 1:00pm-4:00pm.
- **South Gulf Cove Learning Garden** 3<sup>rd</sup> Wednesday of month 9:00am-12:00pm.

Monthly **Plant Clinics** are Saturdays 9:00am-12:00pm at the following locations:

- **Peachland Promenades Publix** 2<sup>nd</sup> Saturday of month.
- **Home Depot Murdock & Home Depot Punta Gorda** 3<sup>rd</sup> Saturday of month.
- **Lowe's Garden Center Murdock** 4<sup>th</sup> Saturday of month.

Ralph Mitchell is the County Extension Director/Horticulture Agent for the Charlotte County Cooperative Extension Service. You may contact him by email ([Ralph.Mitchell@charlottefl.com](mailto:Ralph.Mitchell@charlottefl.com)). You may also contact a volunteer Master Gardener 1:00pm-4:00pm Monday, Wednesday, and Friday at 941.764.4340 or by email ([Master.Gardener@charlottefl.com](mailto:Master.Gardener@charlottefl.com)).

For more information about our Florida Yards and Neighborhoods Program, please contact our FYN Horticulture Program Assistant, Allison Steele, at 941.764.4340. Allison can help educate you about the Florida Yards & Neighborhoods Program so that you can create a beautiful, Florida-Friendly landscape that saves you time and money while conserving precious water resources and reducing pollution.

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*Resource:*

*Escobedo, F. (2007) Urban Forests in Florida: Do They Reduce Air Pollution? University of Florida/IFAS Extension Services.*