

Ozone Garden network grows nationwide

Written by Sarah Witman, July 30, 2013

As the sun sets on July's last remaining days, the founders of the St. Louis Ozone Garden look back on several successes from the garden's second season.

The garden first opened in May 2012, as a way to visibly demonstrate the effects of air pollution on living things. Supported by St. Louis University's Center for Environmental Sciences, the Saint Louis Science Center, the Missouri Botanical Garden, and NASA Air Quality Applied Sciences Team, it is located in St. Louis' well-trafficked Forest Park, near the entrance to the McDonnell Planetarium: Essentially, a hub for science education and public outreach.

With improved plant growth, added community involvement, and even a few new ozone-indicator gardens springing up in the area, St. Louis University Professor Jack Fishman and Project Manager Kelley Belina are now seeing what a difference a year can make.

The plants in the St. Louis Ozone Garden, which include ozone-sensitive perennials from last season like common milkweed and cutleaf coneflower, have been growing better this summer. So much better that Fishman and Belina hope to collect seeds from them for the first time.

"Now in its second year, the plants here are thriving and the garden looks quite different," Fishman and Belina say in their latest progress report. "The milkweed and coneflower are tall and flowering, and many bees and other pollinating insects are visiting the garden."

These plants as well as the newly-planted species, like ozone-sensitive soybeans and La Chipper potatoes, have been showing visible signs of ozone damage — this is positive, since the main purpose of an ozone garden is to show the effects of air pollution through leaf damage.

Somewhat surprisingly, this damage is happening despite "relatively clean air" in St. Louis compared to last summer. Days that experience air quality posing a health risk to sensitive individuals, called "code orange" days, have been nonexistent in the St. Louis region so far this year, whereas in 2012 there were 19 of these days in June and July alone.

"Despite the relatively clean air this year, the ozone concentrations are still significantly above 40 ppb (parts per billion) much of the time, which has provided the mechanism to damage the plants," Fishman and Belina explain in the report.

At this time last year, Fishman and Belina said they hoped to expand the outreach and involvement component of the garden. Since then, they have been asked to speak at events like the St. Louis Earth Day Symposium, the St. Louis area East-West Gateway Council of Governments Air Quality Committee meeting, and a local radio show called "Earthworms." Summer campers have been regular visitors to the garden, as well as a high school environmental studies class. Like last summer, two high school students have been collecting data in the garden, through the St. Louis Science Center's Youth Exploring Science (YES) program. The students are helping to collect data on leaf damage due to ozone, information that is then uploaded to an online database.

"This is a promising step," Fishman and Belina write. "We look forward, after the garden network is established, to focusing more on the project's future goals of directed educational activities with schools and classes."

With this kind of progress at the garden, and room for even more, the establishment of additional ozone-indicator garden sites nearby and around country has just been icing on the cake. Fishman always intended the St. Louis Ozone Garden to be the first of many in a larger, nationwide network, a vision that is starting to come together with the recent completion of gardens at Harvard University in Cambridge, Mass., Goddard Space Flight Center in Greenbelt, Md. and the Virginia Living Museum in Newport News, Va.

More locally, gardens inspired by the St. Louis Ozone Garden were created this year at Grant's Farm in St. Louis County and at Southwestern Illinois College (SWIC), creating a tri-force of environmental education resources for the St. Louis area. Photos of all three gardens may be seen below.



A high school student collects data on foliar ozone damage as part of the St. Louis Science Center's Youth Exploring Science (YES) program at the original St. Louis Ozone Garden.



The Grant's Farm ozone garden in mid-July, 2013.



Planting the Southwestern Illinois College (SWIC) ozone garden in mid-June, 2013.