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# Urban Trees Face “Survivor” Style Challenges

*SIMPLY TREES for March 2015 by Graham Herbst, Community Forestry Specialist for Eastern Nebraska*

Street trees face some tough challenges. They might best be compared to contestants on reality shows like “Survivor” where an average American, happy in the life they lead, is plucked out of a life of comfort, companionship and opportunity. For our viewing pleasure they are moved to a deserted island, along with a handful of strangers, and forced to scrape out an existence far away from the civilization they are accustomed to.

In a similar manner, urban trees also are taken away from their usual circumstances and placed in an unfamiliar and challenging environment. Recent studies have been undertaken with the hope that understanding that disparity, and incorporating as much of their natural habitat as possible in this new environment, might help us more successfully integrate trees into heavily populated areas.

Last summer the city of Omaha evaluated some of the factors affecting the health and longevity of street trees. Not surprisingly, surrounding buildings and roads have a huge impact on trees. The heavy equipment needed for hardscaping compresses soil and cuts the space for air and water infiltration in half. This compaction limits tree root growth and suppresses the buildup of organic matter. Add a few other stress factors, like de-icing salts, reflected heat and poor air quality, and it’s obvious how different these street corridors are from the forests where these trees originated.

Curbs, driveways and street medians are particularly challenging for trees, and therefore ideal places to experiment with the different factors in these settings. In the Omaha study, trees surrounded by concrete on all sides were half as likely to be in “excellent” or “good” condition as those with pavement on just one side. Those surrounded by turfgrass, and subject to damage from mowers and weed-whackers, were far less healthy than those surrounded by mulch or plants that don’t require mowing or trimming. Supplemental drip irrigation and higher organic matter also greatly improved health and the possibility of long-term health.

Another site category referred to as legacy plantings—undisturbed settings with a diversity of trees at different stages of maturity—proved even healthier. Though damage from mowing equipment was still fairly common, the improved soil quality and existing canopy cover made a difference. The slower and more deliberate pace of planting by volunteer groups could further explain why the trees were less likely to be planted too deep than in traditional plantings by contractors.

The study confirmed one of our assumptions about tree health in urban settings: that the further trees are taken from the context in which they are found, the more difficult it is for them to establish and thrive.

Trees do much more than provide character and a sense of place. They store carbon, remove pollutants, provide energy savings winter and summer and absorb and filter noise, stormwater and air pollution. These are tangible, real-world benefits that are worth protecting and improving as we plant trees in difficult urban settings.