The U.S. Forest Service's National Urban and Community Forestry Advisory Council (NUCFAC) funded the Bloomington Urban Forestry Research Group (BUFRG) to study tree planting projects supported by nonprofit organizations, including Trees Atlanta.

This brochure presents the results of part of the project: a re-inventory of trees planted by Trees Atlanta from 2009 to 2011 and benefit estimates from i-Tree Streets.
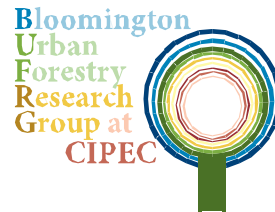
Trees Atlanta planted more than 4,700 trees from 2009 to 2011. In June and July of 2014, teams of volunteers, supervised by Trees Atlanta, re-inventoried 577 of those trees. In our analysis of the re-inventory data we found:

- Survival rate was 78%.
- 62% of trees were in good condition.
- Average DBH (diameter at breast height) was 2.9 inches.
- Nuttall's oaks were the largest, with an average DBH of 5.9 inches.
- The estimated total replacement value of the trees is $147,000.
- Estimated total annual benefits of the trees are $6,600.

If all trees planted from 2009 to 2011 had the same species composition, average DBH, and mortality rates as the re-inventoried trees, they would provide around $55,500 in total annual benefits.

For more information, visit:

www.treesatlanta.org
http://www.indiana.edu/~cipec/research/bufrg_about.php
www.iTreetools.org

TREES ATLANTA

Bloomington Urban Forestry Research Group at CIPEC

ACTrees
Tree by Tree • Street by Street
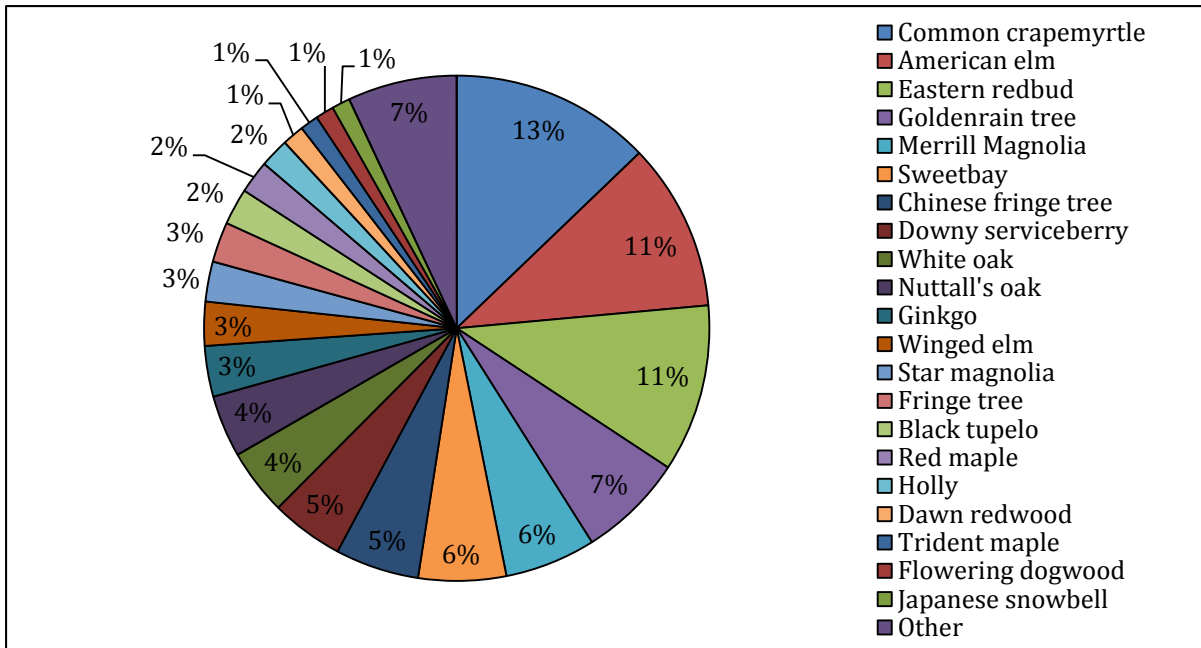Alliance for Community Trees

Urban & Community Forestry

Trees Atlanta

Planted Tree Re-Inventory:
Survival and Benefits of Recently Planted Trees

Prepared by Sarah Widney
Bloomington Urban Forestry Research Group at CIPEC
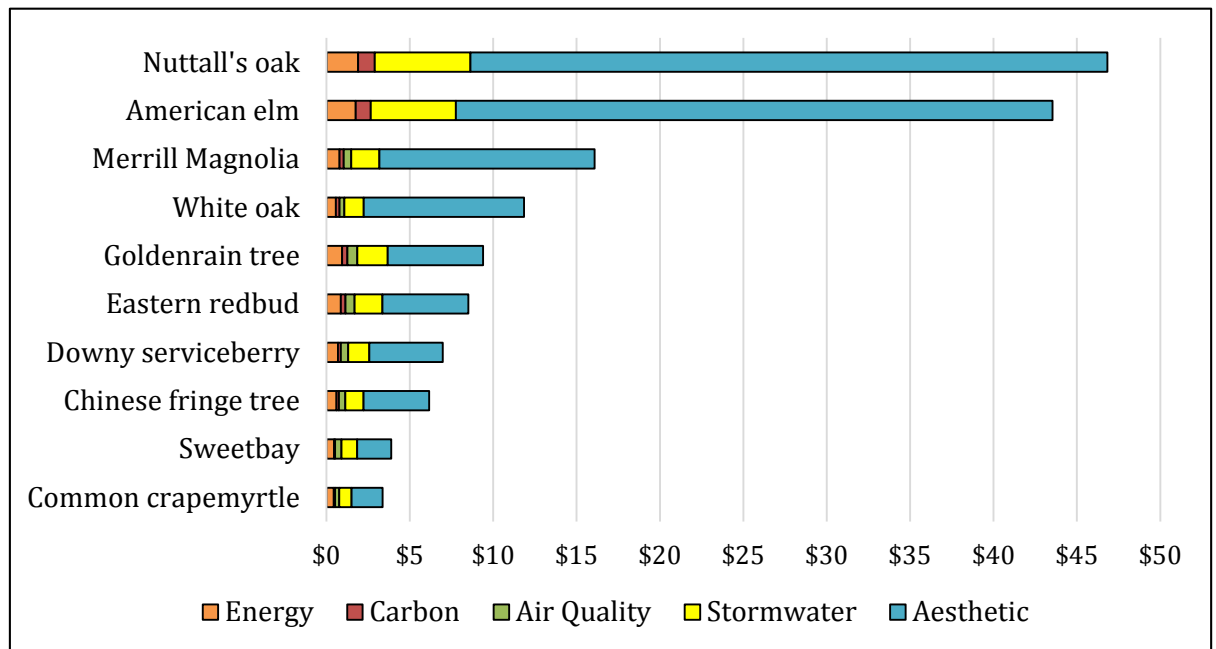Indiana University – Bloomington
February 2015

Above: Species distribution of surviving re-inventoried trees. Crape myrtles make up 13% of surviving re-inventoried trees, while magnolias account for 14% of surviving re-inventoried trees.

Tree Benefits

We used i-Tree Streets to estimate the energy, carbon, air quality, stormwater, and aesthetic benefits and canopy cover provided by the re-inventoried trees. i-Tree takes into account the species and size class of each tree in calculating canopy cover and incorporates energy costs and climate in calculating benefits.

Most (77%) of the current annual benefits are aesthetic; we expect aesthetic benefits to become relatively less important over time as the trees grow larger and contribute more stormwater benefits.

The re-inventoried trees . . .

- Provide $6,600 in total estimated annual benefits.
- Provide $380 in annual energy benefits, corresponding to 43 GJ of reduced energy usage.
- Sequester or avoid 8,600 kg of CO_2 each year.
- Take up or avoid 4 kg of ozone, 6 kg of nitrogen dioxide, 5 kg of particulate matter, and 10 kg of sulfur dioxide each year.
- Intercept almost 90,000 gallons of rainfall each year.
- Provide $5,000 in increased property value (aesthetic benefits).
- Provide 43,000 ft^2 of canopy cover.

Below: Estimated annual benefits per tree, by type, provided by the ten most common surviving tree species.