

CASE STUDY

FAIRFAX RELEAF

CATEGORY Urban Forestry
Stormwater Management
Water Quality

LOCATION Northern Virginia

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SYNOPSIS Fairfax ReLeaf is a nonprofit volunteer organization dedicated to planting and preserving trees, restoring habitat, and improving community appearance on public lands in Northern Virginia. Fairfax ReLeaf aims to improve degraded landscapes and reforest urban areas of Virginia through various programs and community involvement. The organization takes advantage of the many economic and environmental benefits that trees provide.

SITUATION According to the USDA Forest Service, more than one-third of Northern Virginia's urban forest has been lost in just the last twenty years, due to increased population pressure. The impacts of decreased urban canopy include higher temperatures, increased stormwater runoff, and worsened water quality, among others. The challenge is to calculate the economic and environmental benefits of trees, both individually and as entire urban canopies. Fairfax ReLeaf began in 1991 as a local activity and an outgrowth of the Global ReLeaf project of the American Forests, and is working to reverse the trend of tree loss, changing the direction towards urban forest gain.

PROJECT APPROACH Fairfax ReLeaf first conducted studies on the existing canopy in Fairfax County, in order to gather the information needed to implement a successful urban forestry program. By utilizing aerial photography and sample plots, the organization computed an estimate of tree quantity: 57 million trees growing on approximately 240,000 acres in the county, including the cities. Using a computer program called Quantitree, ReLeaf then quantified the value of trees by assigning dollar values to the benefits of community trees based on published scientific research. The annual benefits computed represent what the community would have to pay to achieve the same level of air pollution control, atmospheric carbon removal, storm water runoff reduction, and energy conservation if the trees were not present.

Using all the information from the studies, Fairfax ReLeaf completed a tree benefits analysis in 1995 and implemented its community landscaping effort. The program aims to restore wildlife habitat, create "mini woodlands" and improve degraded landscapes. A diverse group of approximately 200 volunteers plant donated native trees, saplings and seedlings in financially limited locations, such as public parks, schools, retirement homes, day care centers, libraries, and even along roadsides. The group also conducts Earth Day and Arbor Day events, sponsors tree-awareness "teach-ins" at elementary schools, and encourages tree conservation.

RESULTS/ IMPACTS

The tree benefits analysis shows that even though much of the area's natural forest has been removed, the remaining urban forest is relatively young and healthy with an average age per tree of 18 years. Other results from the study include:

- An average tree in Fairfax County has an appraised value of about \$230 and provides about \$7 in benefits annually,
- Over its expected lifetime, which can last 100 or more years, each tree can yield upwards of \$1000 in benefits,
- Fairfax County trees alone deliver \$400 million in environmental benefits each year,
- The appraised value of the trees themselves is nearly \$13 billion,
- Trees provide numerous economic and environmental benefits, including lowering air pollution levels, removing carbon dioxide from the air, reducing stormwater runoff energy costs, providing shade, creating shelter and food for wildlife, act as a buffer from glare, noise, and traffic fumes, and raise property values.

The Islands of Green program creates "islands of green" in an otherwise urban environment by planting trees amidst buildings, roads and other facilities. The trees reduce energy costs for cooling and heating, mitigate erosion and siltation, allow fewer stormwater structures, and reduce the need for roadside mowing. The Tree Rescue Program transplants trees from a site slated for development. In 1992, 250 trees were saved from a site being developed as a golf course. In addition Fairfax ReLeaf donated a new tree for every mature tree removed for safety reasons from all county parks, ensuring no net loss of park trees. Overall, Fairfax ReLeaf programs have realized major success:

- More than 100,000 trees were planted by Fairfax ReLeaf from 1993 to present.
- 100's of highway tree planting and woodland projects were begun over the last 10 years.
- Several dozen tree planting projects in county parks, schools and residential communities were launched over the past five years.

PARTNERS

The major partners for this project include United Way, Combined Federal Campaign, and Virginia Department of Forestry.

FUNDING

United Way and the Combined Federal Campaign are the main source of unrestricted funds. The economic benefits are listed above in the results section.

KEYS TO SUCCESS

The program was successful because of a focused community response that involved a broad base of volunteers from civic groups, Scout troops, local businesses, churches, and schools. At a time when county governments are scaling back spending on tree planting and tree maintenance, Fairfax ReLeaf's efforts are particularly valuable. The program was able to overcome the county's bureaucratic limitations and a shortage of funds for trees. It fostered cooperation between public and private groups and found necessary practical solutions for citizens' concerns. "It's nice," said Rose Jennings, a Fairfax ReLeaf volunteer, "you're doing something for the environment, for Fairfax, for the animals, for everything." Fairfax ReLeaf also serves as a practical laboratory for assessing techniques to lessen the impact of development on the environment in a rapidly changing urban-rural interface. The lessons learned with its research will continue to help other communities in the future.

SOURCES

- U.S. Department of Energy, Energy Efficiency and Renewable Energy, *Smart Communities Network: Creating Energy Smart Communities*
http://www.sustainable.doe.gov/success/birthing_tree.shtml
- NBC4.com, Envirocast, Watersheds, *Forests Matter: Trees in the City*
http://wrc.iewatershed.com/index.php?pagename=education_forest_04
- For additional information: <http://www.fairfaxreleaf.org>