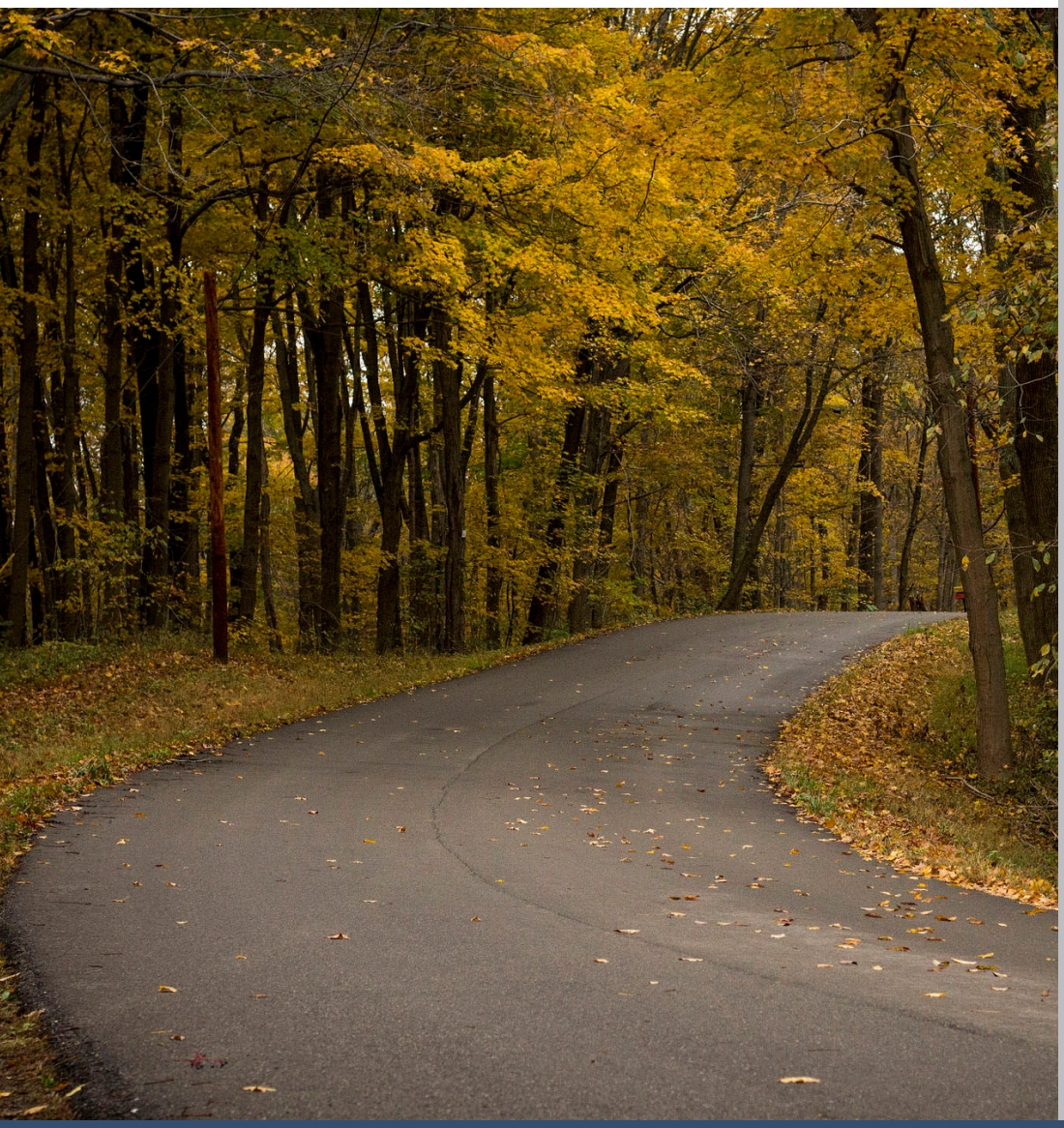
Urban Forests & Energy

Forests are fundamental to the region's sustainable energy future



Energy Reduction

Trees provide shade cover that, when used best, can reduce energy consumption (and energy bills) by 10%.

Forest Products

The loblolly pine forests of the Triad are projected to be a huge economic resource in the future. Their potential to produce energy pellets and biofuels are thought to be fairly untapped.

Household Energy Use

An increase in tree cover throughout the Triad will have large impacts. With less household energy use, water will be conserved and greenhouse gas emissions will be reduced, making the region a healthier and cleaner place to live, work, and play.

NORTH CAROLINA FOREST SERVICE NC

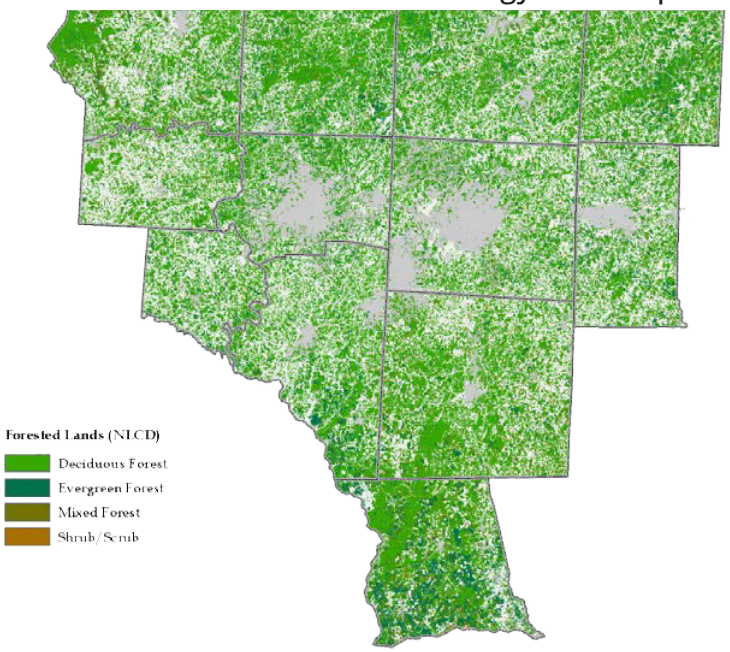
The NC Triad is home to 1.6 million people and will grow to 2 million in the next 25 years. To prevent brownouts and minimize greenhouse gas emissions, it is necessary to seek out new energy solutions. Trees can reduce energy consumption and offer numerous forest products that are "cleaner" alternatives to fossil fuels.

Using Forests to Build a Sustainable Future in the Triad

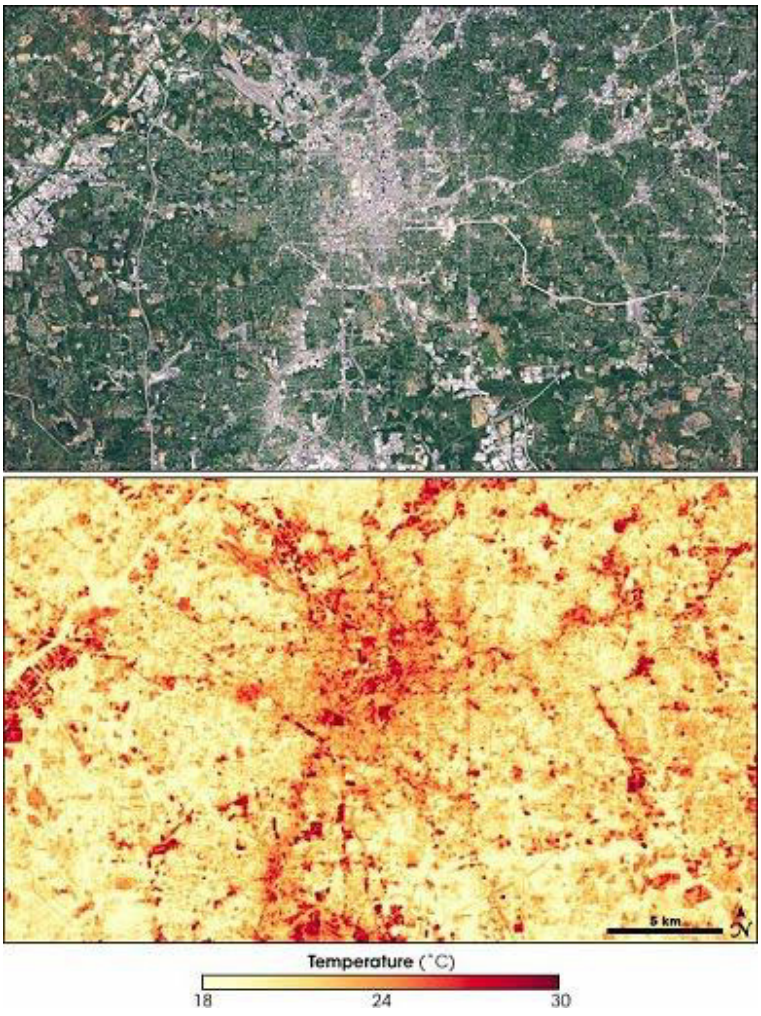
The Triad is growing quickly. It can reduce its greenhouse gas emissions through the strategic use of shade trees and through investments in biomass fuels.

The Piedmont Triad is expected to grow from about 1.6 million in 2010 to 2.0 million in 2040. With this unprecedented growth will come 400,000 people and nonresidential work space that will need to accommodate 350,000 new jobs (Nelson 2012). The market studies show that most of these new families will want to move into the region's towns and cities, straying from the historic trends in suburban lifestyles that made the Triad the most sprawling development are of North Carolina. This is great news for our forests and farms, but it makes the need to develop sustainable energy policies and practices imperative.

The Triad's energy largely comes from natural gas, coal, and nuclear sources. It is a region with persistent air quality concerns related to greenhouse gas (GHG) emissions, namely ground-level ozone and fine particulate materials. It has an immediate need to reduce GHG emissions as well as a vested interest in its future to do so. The region's urban heat island effect is already creating disproportionate literal hot spots in urban centers, where older adults and children are vulnerable to extreme heat conditions. The use of shade trees can reduce energy consumption, provide relief for urban residents, and absorb many of these air pollutants. Shade trees also benefit rural residents who mostly live in older homes with poor insulation – this half of the region's population is generally and disconnected from the region's health care system. Trees also offer an opportunity to invest in alternative fuels that may burn cleaner than fossil-based fuels. Biomass fuels are derived from – among other matter – trees and the byproducts of timber operations. With global demand for inexpensive lumber such as that produced by loblolly pines, this could be a large emerging market for the Triad's rural communities that will reduce global GHGs and deliver global revenues to local businesses.

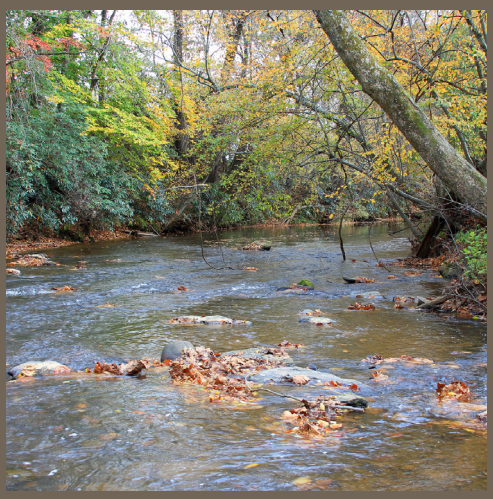


THE TRIAD'S FORESTS GENERATE >$60 MILLION IN DIRECT AND INDIRECT REVENUES ANNUALLY. MOST OF THE REGION'S CITIES HAVE SLIM TO NO CANOPIES.



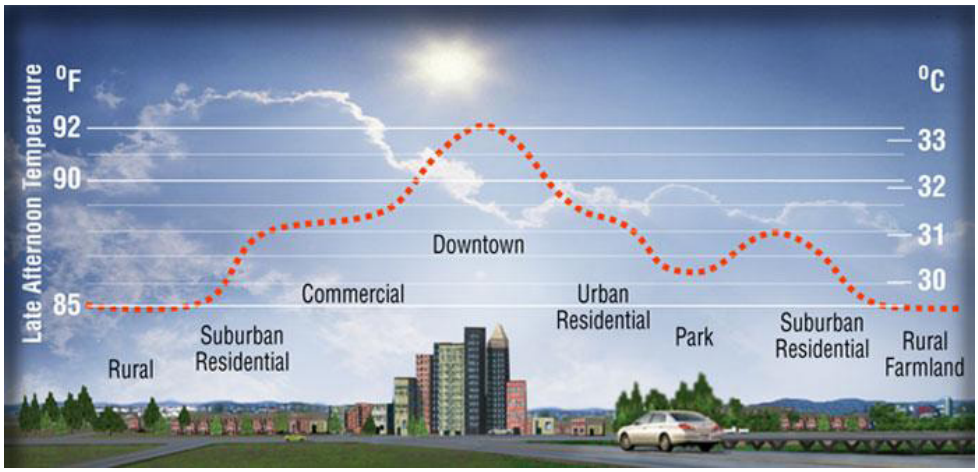
INCREASED TREE COVER CAN HELP REDUCE THE URBAN HEAT ISLAND EFFECT, DECREASE DEPENDENCY ON FOSSIL FUELS, IMPROVE HEALTH, AND DECREASE ELECTRICITY BILLS.

Using shade trees to reduce energy consumption will better ensure sustainable water supplies.



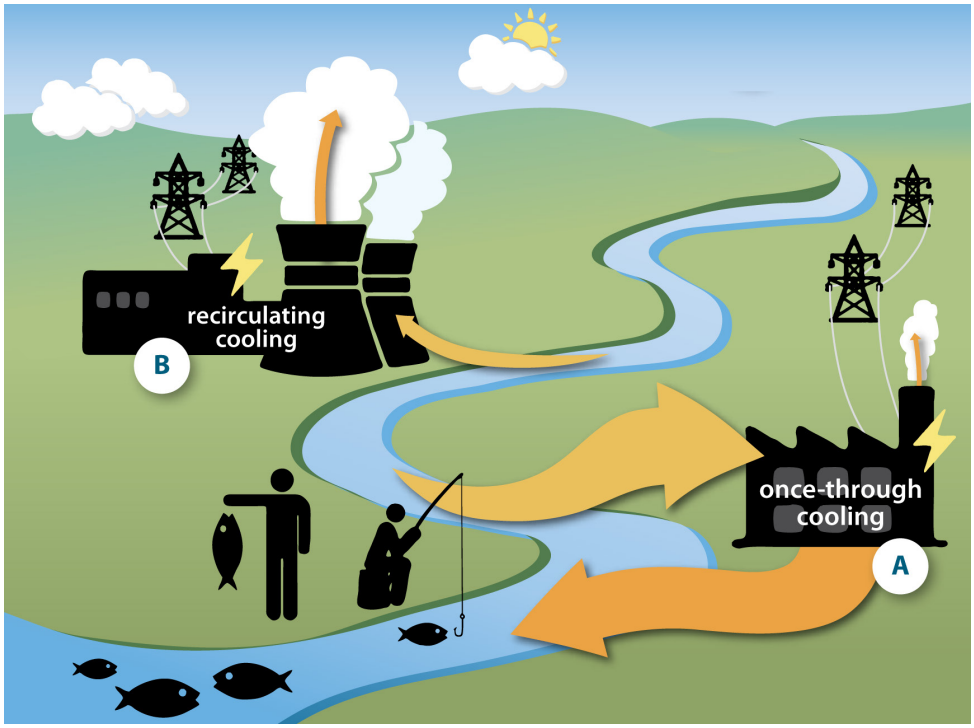
Forested buffers of all sizes provide enormous value for streams and rivers.

Urban trees reduce air and water pollution, as well as cool cities and increase property values. Charlotte's most valuable urban trees return $150 in services for every $1 spent.



URBAN HEAT ISLAND EFFECT, US DEPARTMENT OF ENERGY

The urban heat island effect is one of the biggest challenges for city and town residents. It amplifies heat and humidity, posing a risk especially for seniors and children.



THE ENERGY-WATER NEXUS, EWWWI, 2011.

Strategic use of shade trees can reduce energy demand in our houses and office buildings. Not only do shade trees mean lower energy bills, they improve power plant demand on our water resources.

Top Recommendations:

Address the Triad urban heat island concerns with forest canopies of at least 40% in every town and city of the Triad.

Pursue site design standards that optimize shade cover on the southwest facing sides of buildings.

PIEDMONT together

Community Choices. Regional Solutions.

Using Trees to Reduce Energy Demand

The Piedmont Triad has many tools with which it can solve its current and future challenges. North Carolina is one of the fastest-growing states in the country, and the growth is only anticipated to get faster. The Triad is wealthy in water, but we must protect and manage it so there is plenty for business, residents, and the environment tomorrow. Forests can protect drinking watersheds more efficiently and effectively than any engineering solution; stream buffers are the most cost-effective pollutant management system; and trees only increase in value to absorb stormwater and protect fragile urban streams. Trees are necessary for our waters' future, but we need to include them in our plans, policies, and communities.

In 2011, the Piedmont Triad Regional Council and the Piedmont Authority for Regional Transportation received a $1.6 million grant from the US Department of Housing and Urban Development. Together they produced Piedmont Together, a sustainable communities plan for the entire Triad region. It features all of the information in this booklet and more. Please visit us at www.piedmonttogether.org.

Funding for this project was provided in part through the Urban & Community Forestry Program of the North Carolina Forest Service, Department of Agriculture and Consumer Services, in cooperation with the USDA Forest Service, Southern Region.

PIEDMONT TRIAD REGIONAL COUNCIL