



WINTER 2012

GUFC FIRST QUARTERLY PROGRAM

TREES AND HEALTH

Getting Kids Outdoors!

February 22, 2012

10 a.m. to 2 p.m.

Location: The Jefferson Civic Center
65 Kissam Street, Jefferson, GA 30549

\$35 members, \$45 non-members

Lunch included. CEUs available.

Register at www.gufc.org.

How do we get youngsters outdoors among the trees? Why is this an issue? What health benefits does activity in greenspace bring to children? What opportunities are out there to introduce the marvels and benefits of nature to kids? Join us as we discuss these challenges.



City Trees, Nature and Physical Activity: A Research Review

By: Kathleen L. Wolf, Ph.D.

Originally published in Arborist News, February 2008

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The purpose of this article is to provide an overview of research concerning trees and their impact on public health. It focuses on the role that trees and other elements in nature play in encouraging physical activity.

A Health Crisis!

In the past 30 years, the number of overweight and obese people has increased sharply for adults and children alike. According to the U.S. Centers for Disease Control and Prevention (CDC), 65 percent of U.S. adults are overweight. One in three is considered obese. Being overweight boosts risk of chronic diseases such as heart disease, high blood pressure, stroke, Type II diabetes, arthritis and certain kinds of cancer.

The prolonged illnesses and disabilities associated with chronic diseases decrease the quality of life for millions of people in the United States. Chronic diseases account for 300,000 premature deaths annually, and contribute to five of the six leading causes of death in the United States. The CDC estimates that U.S. obesity-related medical costs were \$75 billion in 2003.

The Solution?^{ii iii iv}

Much of the chronic disease burden is preventable. Regular physical activity and healthy eating are essential. Physical activity need not be strenuous to be beneficial. Adults benefit from moderately intense physical activity, such as 30 minutes of brisk walking most days of the week. Yet more than 50 percent of U.S. adults do not get enough physical activity to provide health benefits; 24 percent are not active at all in their leisure time. Activity decreases with age, and sufficient activity is less common among women than men, and among those with lower incomes and less education.

Earlier studies to explain low levels of physical activity emphasized demographic and household choice factors, but recent efforts show that the built environment influences behaviors. Certain elements within the outdoor environment generally encourage good choices. Table I lists the urban conditions that support greater activity. *Continued on page 10*

President's Letter



I never would have thought when I planted my first tree on Arbor Day in the third grade that I would be here. Even though my last name, Woodson, should have given me a clue about my destiny, I am so honored to be the incoming 2012 president of the Georgia Urban Forest Council. Ten years ago I had never heard of this wonderful organization; I only had the extreme desire to save, plant and manage trees in my county better. Now my job as a county arborist and my love of urban forestry are bringing my dreams to fruition. I, like so many other past presidents, was asked to serve on the GUFUC board of directors several years ago by fellow board member Dan Whitehead. His confidence in me even then was overwhelming, but he saw my passion for my community trees. My

vision for GUFUC in 2012 is for the organization to get more involved in community events that will help our youth get off the couch and more active in the great outdoors, and also, to help our local governments keep focused on updating ordinances and providing educational programming to our "citizen foresters." During these downed economic times, our members all across the state - colleges, for example - are being asked to do more with a lot less and our urban landscapes are suffering.

We have many innovative and fresh educational opportunities for the upcoming year and I can't wait to share them with you. Join us for our First Quarterly Program, "Trees and Health," on February 22 in Jefferson and for the "All Things Live Oak" workshop and tour, scheduled for May in Savannah. Stay tuned for more information on both. Hope to see you there!

India Woodson

Funds for this project were provided by the Urban and Community Forestry Assistance Program administered by the Georgia Forestry Commission. The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political belief, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communications of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-A, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410.

From the Executive Director

In this issue of Tree Talks, we're pleased to offer two noteworthy articles about the proven benefits of trees and greenspace to the physical and mental health of adults and children. Dr. Kathleen Wolf (page 1), Dr. Frances Kuo, and Andrea Faber Taylor (page 3) each do outstanding work researching why it is so important for people of all ages to have access to nature, and we hope you'll share their information with others in your community. We'll talk more about this topic, specifically getting kids outdoors in nature, at our first quarterly program on February 22 in historic Jefferson, Georgia. Join us as we hear not only from noted professionals but also from each other, as we discuss opportunities and success stories of connecting young people to trees and nature. After the program, we'll spotlight yet another excellent urban forestry program, as we don our jackets and take a walking tour (weather permitting) of this historic small town and view Jefferson's recent tree plantings.

Mary Lynne Beckley



Congratulations to GUFUC Board Member Sarah Visser, who received this year's Georgia Urban Forest Council President's award for outstanding leadership in urban forestry. Sarah has been a GUFUC member since 2000 and a strong leader in the organization, including a stint as President. This year, Sarah became the first Executive Director for the Keep Georgia Beautiful Foundation. *Pictured: 2011 GUFUC President Rusty Lee, Sarah Visser, Georgia Forestry Commission Management Director James Johnson, and Georgia Forestry Commission Board Member Earl Smith.*

For kids with ADHD, regular 'green time' is linked to milder symptoms

CHAMPAIGN, Ill. — A study of more than 400 children diagnosed with Attention Deficit Hyperactivity Disorder has found a link between the children's routine play settings and the severity of their symptoms, researchers report. Those who regularly play in outdoor settings with lots of green (grass and trees, for example) have milder ADHD symptoms than those who play indoors or in built outdoor environments, the researchers found. The association holds even when the researchers controlled for income and other variables.

The study appears in the journal *Applied Psychology: Health and Well-Being*.

According to the Centers for Disease Control and Prevention, about 9.5 percent of children aged 4-17 had been diagnosed with ADHD as of 2007. Symptoms include severe difficulty concentrating, hyperactivity and poor impulse control.

Although many children with ADHD are medicated, most "would benefit from a low-cost, side-effect-free way of managing their symptoms," wrote University of Illinois crop sciences visiting teaching associate Andrea Faber Taylor and natural resources and environmental sciences professor Frances (Ming) Kuo, the authors of the study.



A new study adds to the evidence that time spent in green outdoor settings benefits children with ADHD. Photo: Public domain photo courtesy of LEAF



University of Illinois natural resources and environmental sciences professor Frances (Ming) Kuo (left) and crop sciences visiting teaching associate Andrea Faber Taylor found that children with ADHD who routinely spent time outdoors in green settings had milder symptoms than those who regularly played indoors or outdoors in built environments. Photo: L. Brian Stauffer

Previous research has shown that brief exposure to green outdoor spaces – and in one study, to photos of green settings – can improve concentration and impulse control in children and adults in the general population – individuals without ADHD.

These findings led Taylor and Kuo to examine whether children diagnosed with ADHD, which is characterized by deficits in concentration and impulse control, might also benefit from "green time." In a study published in 2004, they analyzed data from a national Internet-based survey of parents of children formally diagnosed with ADHD and found that activities conducted in greener outdoor settings did correlate with milder symptoms immediately afterward, compared to activities in other settings.

The new study explores other data from the same survey to determine whether the effect also is true for green play settings that are routinely experienced – the park, playground or backyard that a child visits daily or several times a week.

"Before the current study, we were confident that acute exposures to nature – sort of one-time doses – have short-term impacts on ADHD symptoms," Kuo said. "The question is, if you're getting chronic exposure, but it's the same old

stuff because it's in your backyard or it's the playground at your school, then does that help?"

To address this question, the researchers examined parents' descriptions of their child's daily play setting and overall symptom severity. They also looked at the children's age, sex, formal diagnosis (ADD or ADHD) and total household income.

The analyses revealed an association between routine play in green, outdoor settings and milder ADHD symptoms.

"On the whole, the green settings were related to milder overall symptoms than either the 'built outdoors' or 'indoors' settings," Taylor said.

Continued on next page

The researchers also found that children who were high in hyperactivity (diagnosed with ADHD rather than ADD) tended to have milder symptoms if they regularly played in a green and open environment (such as a soccer field or expansive lawn) rather than in a green space with lots of trees or an indoor or built outdoor setting.

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The researchers found no significant differences between boys and girls or income groups in terms of the relationship between the greenness of play settings and overall symptom severity.

Kuo noted that the findings don't by themselves prove that routine playtime in green space reduces symptom severity in children with ADHD. But in light of all the previous studies showing a cause-and-effect relationship between exposure to nature and improved concentration and impulse control, she said, "it is reasonably safe to guess that that's true here as well."

The study was performed with Hatch Act funds, and with support from the USDA CSREES National Research Initiative with a recommendation from the National Urban and Community Forestry Advisory Council. The paper, "Could Exposure to Everyday Green Space Help Treat ADHD? Evidence From Children's Play Settings," is available online or from the U. of I. News Bureau.



Numerous studies have found that short-term exposures to natural environments improve concentration and impulse control in children and adults immediately afterward. A new study indicates that even a routinely experienced greenspace is beneficial to children with ADHD.
Photo: Andrea Faber Taylor

Request for Proposals for Consulting Services Consulting Arborist Services

The City of Thomaston is looking for an individual to **provide consulting arborist services** for the city. The City of Thomaston has an urban forest of just over 2,000 trees spanning mostly in the Silvertown Village section of Thomaston. The city has expended approximately \$67,000 per year on City Tree Board activities. Such activities include tree removal, tree trimming, and tree planting. The consulting arborist works with the tree board to develop an annual tree plan that incorporates said activities including the holding of an annual Arbor Day celebration each February. The consulting arborist also insures work quality and completion on all tree related contracts. The tree board meets monthly and the arborist typically attends or joins the meeting by conference call. The previous arborist worked approximately 125-150 hours annually for the city.

In 2012, the arborist will conduct the 10 year inventory of the city forest. This will include evaluating and logging each tree in the public spaces. The city has had the first inventory performed in 1992 and the second in 2002. Each inventory audit identified just over 2,000 trees.

Anyone interested in serving as the consulting arborist should send a resume with a list of references to the city manager's office at **PO Box 672, 106 E. Lee Street, Thomaston, GA, 30286**. The resume should be accompanied with a letter of interest and the anticipated rate of compensation. Resumes should be submitted by **Thursday, January 26th at 2:00 p.m.** A copy of the proposal document is available on the city website or at the city manager's office. Anyone with a need for a reasonable accommodation should contact the city manager at **706-647-4242**.

2011 Excellence in Urban Forestry Awards

On November 3, 2011, at the James Madison Conference Center in Madison, The Georgia Urban Forest Council presented its annual awards to individuals and organizations demonstrating outstanding service toward the preservation and enhancement of our urban forests. Congratulations to this year's recipients, who each received a framed, limited edition print of a Madison magnolia tree painting by artist Barry Nehr.

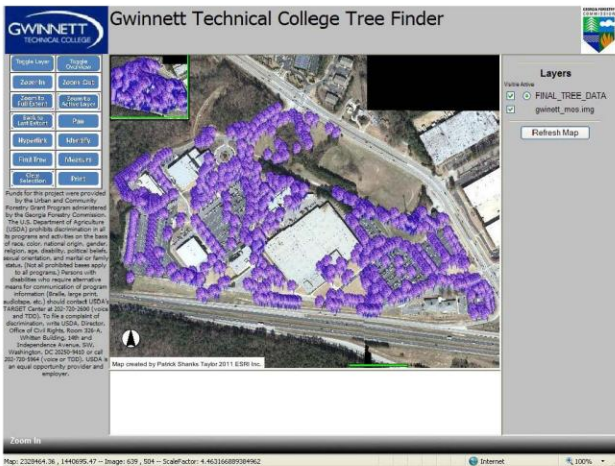


Outstanding Civic Organization Grand Award: The City of Atlanta Tree Conservation Commission

A dedicated citizen board appointed by the Mayor and City Council, the City of Atlanta Tree Conservation Commission is tasked with promoting the “protection, maintenance, and regeneration of the trees and forest resources of the City of Atlanta.” Recent accomplishments for this hardworking group include the establishment of a 10,000 Tree Planting Campaign, the completion of a downtown tree inventory, assisting with the update of the City’s tree protection ordinance, organizing tree maintenance workshops for city crews, and planning for a city-wide tree canopy analysis.

Outstanding Individual Achievement Grand Award: Robby Astrove

A champion for urban forestry, Robby Astrove is an arborist, fundraiser, educator, organizer, spokesperson, and organizational leader, all in the name of trees. An emerging leader in Atlanta’s fruit tree revolution, he is Chief Foraging Officer for Concrete Jungle and works with Trees Atlanta, Georgia Organics, and the Fruit Tree Planting Foundation to plant and advocate for fruit trees and forests. His recent accomplishments include planting 16 orchards in schools, parks, and community gardens (the first orchard in Atlanta Public Schools); increasing operations for Concrete Jungle; securing over \$40,000 in grants, sponsorships, and funding to create new programs; and advising on the Atlanta Local Food Initiative.



Outstanding Education Grand Award: Gwinnett Technical College for the Gwinnett Trees Count Website

Serving as a resource for community residents and Gwinnett Tech students, the Gwinnett Trees Count website provides an online inventory of over 800 trees on the 87-acre college campus. Funded by an Urban and Community Forestry Grant from the Georgia Forestry Commission, the site will also be a teaching tool for the school’s horticulture program.

http://gisweb.gsc.edu/website/Gwinnett_Tech_Tree_Finder/viewer.htm

Outstanding Business Grand Award: The Asbury Automotive Group for the Nalley Tree Campaign

The Nalley Tree Campaign was created by the Asbury Automotive group in partnership with the City of Decatur, Dekalb County, Trees Atlanta, Park Pride and Keep DeKalb Beautiful. The campaign’s first tree planting season in 2010-11 included the planting of over 2500 trees, the distribution of seedlings at the Nalley Tree Nursery located at Nalley Nissan in Decatur, and a fun community tree festival.





Outstanding Urban Arboriculture Grand Award: The City of Rome for its Crape Myrtle Transplant and Sale

Since safety had become an issue, the Rome Public Works department knew it needed to remove overgrown crape myrtles in the median of a highway bypass. They also worked with the City of Rome Tree Board's creative idea not just to remove 275 of the 400 mature trees, but to then transplant them in public spaces and also make them available to private citizens for planting. The project was a success!

Outstanding Elected Official Grand Award: The Honorable William Cocchi, Mayor of Mansfield, Georgia

Trees are important to Mayor Cocchi. In 2007, he formed the Mansfield Tree Board, adopted a tree ordinance, and helped Mansfield meet the requirements for Tree City USA certification. Under his leadership, this small, rural community has developed a strong urban forestry program, including adopting a ten-year comprehensive plan with a strong emphasis on tree planting and receiving a 2011 Urban Forestry Grant for a street tree inventory, management plan, and future plan for tree restoration.



Outstanding Community Grand Award: City of Atlanta Arborist Division and Office of Parks

Society of Municipal Arborist accreditation is the highest honor for municipal urban forestry programs, and in 2010, the City of Atlanta became the first municipality to be accredited in the state of Georgia and the fifth nationwide. GUFCA commends them for their commitment to high urban forestry standards and valuing trees and greenspace in their community.

Pictured: 2011 GUFCA President Rusty Lee, City of Atlanta Arboriculture Manager Ainsley Caldwell, City of Atlanta Arborist Brent Beamon, Georgia Forestry Commission Management Director James Johnson, and Georgia Forestry Commission Board Member Earl Smith.

Outstanding New Initiative Grand Award: The Hemlock Woolly Adelgid Project of the Sautee-Nacoochee Community Association Environment Group

This proactive community organization recognized the threat of the Hemlock Woolly Adelgid, an aphid-like insect native to China, to the hemlocks of northeast Georgia and decided to purchase and make available the Kioritz soil injector system to control the spread of this exotic pest. They also sponsored workshops for the public to provide them with the information needed to save their hemlocks.

Pictured: 2011 GUFCA President Rusty Lee, Ted Doll of the Sautee-Nacoochee Community Association, Georgia Forestry Commission Management Director James Johnson, and Georgia Forestry Commission Board Member Earl Smith.





Outstanding Greenspace Grand Award: Keep Cobb Beautiful for the Kennesaw Mountain Tree Planting Program

This program is designed to plant certain areas of the park so that it will have the canopy that existed there before the Civil War. Volunteers will plant 8,000 new trees over three years, with the only cost being the purchase of the seedlings. Because the trees are being planted in a national park, Keep Cobb Beautiful helps ensure their protection from future development and allows the public to enjoy them.

Outstanding Streetscape Revitalization Award: Keep Warner Robins Beautiful for the Warner Robins Crape Myrtle Program

Working with community business leaders and the Georgia Department of Transportation, Keep Warner Robins Beautiful's Crape Myrtle Program was designed to revitalize State Road 247C, known as Watson Boulevard. This program is an outstanding example of community alliance! With the support of 46 businesses, 3 worship centers, 6 civic organizations, and 61 individuals, 571 trees line each side of 8 miles of SR 247C and three miles of median. *Pictured: 2011 GUFCC President Rusty Lee, Keep Warner Robins Beautiful's Regina Palladeno and Debra Jones, Georgia Forestry Commission Management Director James Johnson, and Georgia Forestry Commission Board Member Earl Smith.*



Outstanding Media Grand Award: JAM Communications for SHADE Magazine

Going above and beyond is an understatement when describing the team that produces the four-color magazine SHADE each year for GUFCC and the Georgia Forestry Commission. JAM Communications, directed by Berylann Strada with graphic artist Corki Bienenfeld and writer Martha McKenzie, works diligently to produce a stellar publication that helps GUFCC educate and inspire readers who care about the urban forest. *Pictured: 2011 GUFCC President Rusty Lee, writer Martha McKenzie, Georgia Forestry Commission Management Director James Johnson, and Georgia Forestry Commission Board Member Earl Smith.*

The Mary Helen Ray Legacy Award for Lifetime Achievement: Marcia Bansley

Marcia Bansley became Trees Atlanta's director in 1985 and was its leader for 26 years. Under her leadership, Trees Atlanta planted Centennial Olympic Park, designed the 22 mile Beltline Arboretum, saved 60 acres of urban forest, raised over \$9 million for planting trees, and completed a \$5.5 million capital campaign which built the new Trees Atlanta Kendeda Center headquarters, a Platinum LEED building and a demonstration site for urban forestry. Marcia co-founded the national Alliance for Community Trees and was a founding member of the Georgia Urban Forest Council. Among her many awards, Marcia has received the National Arbor Day Award and the National Stafford Award for working to preserve trees along Georgia highways. *Pictured is Marcia Bansley (left) with Nobel Peace Prize winner Wangari Maathai.*



URBAN FORESTRY NEWS

Tree City USA – Applications Due December 31, 2011

Again this year there are two options to complete a renewal application - the online application or the paper application. Please visit www.arborday.org/treecity to preview the online application and participate in training sessions at your leisure.

While you are encouraged to submit your application electronically, paper applications will still be accepted. You should have received the following items by mail from the Arbor Day Foundation:

- Instructions for submitting your application online
- 2011 Tree City USA Recertification Application
- Tree City USA Growth Award Application – report how your community is taking its forestry plan to the next level with the Tree City USA Growth Award. This award is designed to recognize environmental improvement and encourage higher levels of tree care in communities throughout the United States.

Please submit your application in advance of the **December 31, 2011**, deadline. This allows applications to be processed efficiently so that materials are distributed in time for your Arbor Day celebration on February 17, 2012. Cities that send applications in late are not guaranteed to receive their materials on time.

If you have any questions, contact the Arbor Day Foundation at treecity@arborday.org or call 1-888-448-7337 or contact **Susan Granbery**, Urban & Community Forestry Coordinator, Georgia Forestry Commission, 678-476-6227, sgranbery@gfc.state.ga.us.

The deadline also applies to the **Tree Campus USA** and **Tree Line USA** programs.

If you are a registered forester in Georgia, your license will expire at the end of December.

The Secretary of State's office sent e-mail notices of the need for renewal (and new requirement to prove citizenship if you let it lapse!) in early October. Please take note and act accordingly. If you didn't receive the notice via e-mail, it also means that you either don't have an e-mail on file with SOS or it is incorrect.

You will be asked if you've met the continuing education requirements. Keep in mind the 1 hour of ethics training requirement is no longer in place and 12 hours are needed.

New Grant Program for ACTrees Member Organizations



Alliance for Community Trees is pleased to announce the **Alliance for Community Trees People's Garden Grants**, a new program designed to explore and deepen the connections between community trees and urban agriculture. Now in their pilot year, the ACTrees People's Garden Grants will promote the connections between trees and urban agriculture by supporting the planting of shade trees to shelter and protect community gardens, and fruit and nut trees to serve as food resources for surrounding communities. The total sum of grant awards is \$125,000, which will be distributed in grants of up to \$5,000 each to awardees. Applications are due **January 31, 2012**.

Inquiries may be directed to Programs@ACTrees.org. An **informational webcast** on December 15 at 1pm EST will feature additional background and details about the Grants, as well as time for Q&A.

For further information and to register for the webcast, go to http://actrees.org/site/resources/events/actrees_peoples_garden_grants.php?tag=news.

2011-2012 Urban & Community Forestry Grant Program

During June, the Grant Review Committee met to review the 30 applications that the Georgia Forestry Commission had received for the Urban & Community Forestry Grant Program. With requests totaling over \$306,000 the committee selected 13 projects to receive the \$108,702 that was available in funding from the U.S. Forest Service.

Organization	City	Description
Athens Land Trust	Athens	Conduct a tree inventory, create a management plan, quantify the environmental benefits, and educate neighborhood residents and local government officials about the value of a small in-town forest.
City of Decatur	Decatur	Develop an Urban Forest Management Plan to assess existing tree canopy, recommend strategies for maintenance, and suggest revisions to the current tree ordinance.
City of Doraville	Doraville	Develop an Urban Forest Management Plan including a survey, health assessment, and long term objectives
Georgia Piedmont Land Trust	Suwanee	Employ an certified arborist/urban forester to assist in managing the natural resources of 17 fee tracts and one historic cemetery
City of Jefferson	Jefferson	Contract with a certified arborist/urban forester to guide the city's urban forestry management program
Mansfield Tree Board	Mansfield	Develop a management and long-term planting plan to maximize the future urban canopy of Mansfield, Georgia
City of Milton	Milton	Conduct a tree assessment and develop a comprehensive Community Forest Management Plan
Trees Atlanta	Atlanta	Create an iPhone app about Atlanta's Champion Trees
University of Georgia	Athens	Develop a guidebook showing county tax assessors how to properly value land encumbered by a conservation easement and training sessions based on the guidebook.
Creekside Christian Academy	McDonough	Plant 10 shade trees on playground area to create an healthier, more energy efficient environment
Eagle Ridge Elementary School	Milledgeville	Plant 85 shade trees around the Eagle Ridge Elementary School campus to create an healthier, more energy efficient environment
Guyton Elementary School	Guyton	Plant shade trees on the school campus to create an healthier, more energy efficient environment
West Newton Elementary School	Covington	Plant 48 shade trees on the school campus to create an healthier, more energy efficient environment

City Trees, Nature, and Physical Activity: A Research Review, Kathleen L. Wolf, Ph.D.

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Trees and nature are an important element of outdoor environments that support activity.^{v vi} Research shows positive relationships between natural environments and psychological or social benefits. This article will highlight the epidemiological studies that relate urban greenspace to activity and physiological health.

	Positive Elements
Physical Environment	higher population density (city core rather than suburbs) higher housing density mix of land uses (such as residential and retail) street design with more connectivity (rather than cul-de-sacs) availability of public transit walking and biking infrastructure (such as sidewalks and bike lanes)
Psycho-Social Environment	safety from crime safety from traffic absence of social disorder aesthetics (including trees and landscape) educational campaigns (such as Walk-to-School) incentive programs (such as work place reimbursement for transit use)

Table 1: Determinants of City Walkability

Activity Settings

Interest in strategies to promote physical activity has grown steadily. The CDC has launched multiple programs to create built places that can benefit populations of people rather than focusing on changing physical activity behavior one person at a time.^{vii}

The rapidly growing research base includes studies about city trees and nature. Some ask about how the presence of parks and nature enable walking. That is, are there adequate physical spaces within a community where activity can occur? Other studies explore a more subtle question: Given that activity spaces are available, what is the role of trees and nature in motivating people to be active?

Neighborhoods

A Netherlands study showed that residents of neighborhoods with abundant greenspace generally enjoy better general health. This positive link was found to be most apparent among the elderly, housewives, and people from lower socioeconomic groups.^{viii}

The character of neighborhoods also exerts significant affects on residents' physical activity; thus neighborhood design is becoming a public health issue.^{ix} Once sidewalks and trails are in place, the presence of nature influences perception of and motivation for activity. In a study of European urban adults, residents of areas with the highest levels of greenery were three times as likely to be physically active and 40 percent less likely to be overweight or obese, than those living in the least green settings.^x

Also, people make more walking trips to task destinations (such as stores or coffee shops) when they perceive that there are many natural features in their neighborhood, including street trees. In less green neighborhoods, people judge distances to be greater than they actually are,^{xi} perhaps leading to decisions not to walk.

Parks/Public Open Space ^{xii xiii xiv}

Table 2 is a list of the elements associated with park use. Not surprisingly, the evidence to date suggests that parks and open space support physical activity, particularly if there is easy access. One study found that people who use public open spaces are three times more likely to achieve recommended levels of physical activity than those who do not use the spaces. Users and potential users prefer nearby, attractive, and larger parks and open spaces. *Continued on next page*

To date few studies have tested for user response associated with varied vegetation character and management in parks, so the specific role of tree canopy is uncertain.

	Positive Elements
Physical Environment	quantity and quality of space passive recreation amenities (such as walking paths or picnic areas) absence of a physical barrier (such as a major road between the park and home) distance to park (up to 325 yards/300 meters is optimal ^{xv}) access to competing local facilities (such as recreation centers) level of park maintenance
Psycho-Social Environment	characteristics of potential users (age, gender, ethnicity, socioeconomic status) match between park attributes and perceived needs perceived barriers safety from crime aesthetic features (presence of trees, water, birdlife)

Table 2: Determinants of Park Use

Trails

Trails can be found everywhere, from national and state parks to urban areas. In 2005, the Rails-to-Trails Conservancy counted 12,000 miles of trails. Future studies can help identify the features most likely to encourage active use by cyclists and pedestrians. Nonetheless, in one study, people showing stress response, measured as elevated blood pressure, were asked to take a long walk.^{xvi} Those who walked in a nature preserve showed a decline in blood pressure, while it increased for those walking in the urban environment. Also, subjects walking in the nature reserve showed increases in positive emotions, while those in the urban environment showed reduced levels.

Community Stewardship

Largely overlooked in research to date is the role of tree stewardship programs and health. Volunteer stewards of all ages who routinely tend trees or work on urban forestry projects are probably gaining health benefits. One way to measure physical exertion is the metabolic ratio of an activity versus rest conditions. Walking is a recommended moderate activity (a 3.5 exertion ratio). Stewardship activities produce exertion ratios ranging from 2.5 for mowing a lawn, to 4.5 for planting trees or shrubs (pruning or weeding), to 5.0 for digging in soil, to 6.0 for gardening with heavy tools or using a chain saw.^{xvii} Health benefits are possible when citizens help steward nearby parks, trails, and street trees.

Life Cycle

Another research perspective is the affect of nature on activity levels for people of various age groups. Urban elderly, youth, and people with a secondary education seem to benefit more from presence of green areas in their living environment than other groups.^{xviii}

Children and Youth

Insufficient physical activity is not limited to adults. About two-thirds of U.S. young people in grades 9 through 12 are not engaged in recommended levels of physical activity. The number of overweight children aged 6 to 11 more than doubled in the past 20 years, going from 7 percent in 1980 to 18.8 percent in 2004. The rate among adolescents aged 12 to 19 more than tripled, increasing from 5 to 17.1 percent.^{xix}

Walk-to-School programs encourage children to be more active. Safety is an important issue. Studies of school walkability find that adjacent land use, walking time of day, and presence of sidewalks and trees were variables that parents considered when allowing their child to walk. Streets having sidewalks (5 feet wide) and a wide buffer with trees (8-foot tree lawn) tested highest for perceived safety by parents.^{xx}

The availability of neighborhood facilities for physical activity may be particularly relevant for adolescents, who are unable to drive and whose activity is often limited to the distance they are able to walk or bicycle. Physical activity levels

Continued on next page

often decline substantially for girls as they go through puberty. A study found that girls participated in more non-school moderate activity if nearby parks had shaded areas. Girls' activity rates more than doubled in areas that are conducive to walking: miniparks, natural resource areas, walking paths, and tracks.^{xxi}

Seniors

A remarkable study of senior citizens in Japan found that having space for taking walks and the presence of parks and tree-lined streets near the residence were significant predictors of higher survival over the following five years. Living in areas with walkable greenspaces positively influenced the longevity of urban senior citizens independent of their age, sex, marital status, baseline functional status, and socioeconomic status.^{xxii}

Another study of older adults revealed that longer visits to a park were associated with lower blood pressure than shorter visits.^{xxiii}

The pace of physical activity is important: 30 to 60 minutes of fast walking several times a week has been shown to improve cognitive function in older people, particularly women.^{xxiv}

It's All in the Mind

Studies show that the motivation to pursue nature and physical activity is complex. People in cities often feel stressed. If a person feels a need for a restorative experience then she is more likely to prefer a natural environment to take a walk, rather than a built environment.^{xxv}

People in large cities perceive themselves to be generally more healthy if a greater percentage of the living environment is greenspace,^{xxvi} are inclined to be more active, and claim the ability to relax faster.^{xxvii}

Why does the presence of nature motivate people to be more active? The "biophilia hypothesis" claims that humans have an innate attraction to the outdoor environment due to our evolutionary background.^{xxviii} Many studies indicate the widespread aesthetic preferences that people have for trees, water and other natural elements. More directly, green areas in one's living environment may ameliorate air pollution and urban heat island effects, creating more comfortable activity settings.^{xxix}

Partnership and Policy

Promoting public health has long been a guiding tenet of urban forestry and landscape design. It is surprising that, until recently, this tenet has been largely overlooked in public discussion of strategies for combating obesity.

Our society is relearning the importance of urban nature. It provides the impetus to get outdoors and move about. Further research is needed to clearly identify specific natural features and areas that will encourage people to engage in physical activity, and to address the needs of diverse populations.

City trees and green space are more than just a luxury and should be given more attention in urban planning and public health policies. A recent rash of studies confirms the essential role that trees and nature play. Green elements should be more directly included in the approaches of programs such as Active Community Environments (ACES), a major initiative of the Centers for Disease Control and the Robert Wood Johnson Foundation's innovative Active Living by Design.

As organizations and elected leaders address the public costs of sedentary lifestyles, arborists and urban foresters are in a unique position to partner and provide high value for public health investments.

Bio

Kathleen Wolf is a research social scientist at the University of Washington, Seattle. Her work focuses on the human dimensions of urban forests and ecosystems. Information about Dr. Wolf's research program can be found at www.cfr.washington.edu/research.envmind

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