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Finding Health and Healing in the Forest

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Veterans tend the trees and shrubs at McGuire Hospital Arboretum.

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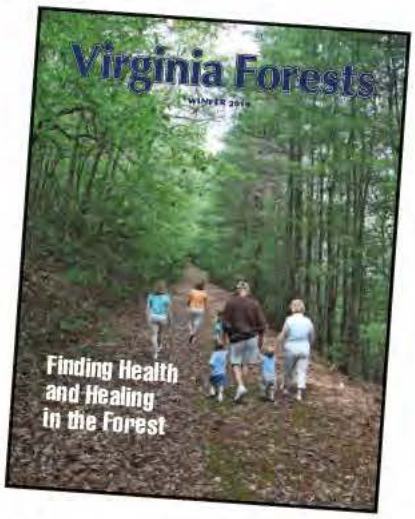


ON THE COVER: Take a walk in the forest! There is plenty of evidence that being outdoors and taking time to connect with nature is beneficial to human health. (Photo courtesy of Virginia Department of Forestry)

Here's to Your Good Health!

The benefits of city trees

by Kathleen Wolf, Ph.D.

Readers of this magazine are uniquely aware of the many ways that trees make human lives better. Production forests provide goods and services that are essential, but may be taken for granted by the general public. In the same way city trees, and the urban forest more generally, are the backdrop of people's busy lives, tall sentinels of wellness and well being.

The urban forest is defined in different ways, depending on one's professional or scholarly lens. Ecologists may focus on remnant patches of native forest. Parks managers may focus on the tree stock within their public lands portfolio. Planners may define the urban forest as the extent of canopy cover for their jurisdiction. This article, focused on the public health benefits of trees, considers the urban forest to be the perceptual 'green envelope' made up of all of the above, as well as green streets, trees in private yards, formal landscapes, and associated vegetation. The character and quality of everyone's surrounding nature is a powerful influence on human health.

Health Benefits

Nearly 40 years of research describes how city trees are important for human health. Anecdote has been replaced

by evidence. There are different ways to frame the data and tell the story. One way is to use evidence that encompasses our life cycle. In other words, from cradle-to-grave, having trees around us improves quality of life. A review of examples from 182 peer-reviewed articles about the salutogenic benefits of trees in cities and towns provides further support, including:

- Increases in canopy around pregnant mothers' homes are related to healthier infant birth weight.
- For young children, exposure to natural areas can help build a healthy gut microbiome, aiding the immune system and even weight management.
- Children raised in greener neighborhoods show improved brain development and cognitive function.
- Middle school children are more likely to be active after school, important for weight management, if there is more tree cover in their neighborhood.
- Across multiple cities adult respiratory and cardiovascular diseases have increased in neighborhoods after tree loss to the Emerald Ash Borer, an insect pest.
- One study found improved stress recovery as urban tree cover density increased. Another five-year study determined that senior citizens having more nearby parks and tree-lined streets had increased longevity.

Nature for Health Programs

Communities and organizations are inspired by the research to create programs that encourage people to go outdoors for improved health. One example is Park Rx America, an organization that networks health care professionals who prescribe time outdoors for their patients to help prevent chronic disease. These health care providers work closely with public lands and park managers to make it easy for people to find safe and comfortable places for activity and enjoyment.

Why is this important? Over 100 million Americans suffer from a chronic disease (e.g., coronary heart disease, stroke, high blood pressure, Type 2 diabetes, and mental health conditions). More than two-thirds of adults currently are overweight or obese, which contributes to chronic disease. Chronic disease results in decreased quality of life and ultimately, premature death. Moderate physical activity such as walking or bicycling several times a week is a proven preventative solution.

Another program example is forest bathing, a translation of the Japanese practice of shinrin-yoku. A decade of studies shows numerous health benefits gained from simple, routine walks in forests, especially for strengthening our cardiovascular and immune systems and for stabilizing

City trees from Richmond (above) to New York's Central Park (photos at left) have a beneficial impact on human health and our quality of life.

The iconic cherry blossoms in Washington, D.C.

and improving mood and cognition. There are several books that provide further guidance, and the Association of Nature and Forest Therapy Guides and Programs is a non-profit startup dedicated to training and therapy development. Trained leaders guide events and experiences that embrace the many opportunities for creativity and restoration offered by even brief forest encounters in ways that promote health benefits.

Social Benefits

Trees provide other benefits that contribute indirectly to better health. For instance, people who are lonely or socially isolated are at greater risk for poor mental and physical health, particularly older people. England has actually created a new ministry of loneliness to counter an epidemic situation. Parks and tree canopy contribute to settings where people can interact and improve social cohesion for improved health.

The presence of neighborhood trees has also been associated with reduced crime. While neighborhoods with larger trees may benefit more from crime reduction, a study of vacant lots that included new tree plantings was related to fewer incidents of violent crime. These effects play out even in relationships; people who lived in public housing buildings with more surrounding trees and greenery reported committing fewer aggressive and violent acts against their partners.

The Business Case: Economics

Community leaders often treat trees as pretty but not essential, yet the economic implications are substantial. There are indirect values. People with views of trees and nature from their workplace desks are less stressed and more satisfied with their jobs. Workplace forest therapy programs can help desk workers reduce hypertension and stress. Healthier workers are probably more productive workers. Young students also respond favorably to trees with improved academic performance that can lead to college attendance and better employment.

The case for connecting economics and direct health effects is compelling. The price tag for health care in the U.S. is now trillions of dollars—about 18 percent of the nation's Gross National Product. This article provides but a few examples of the many ways that trees, parks. and green space could help promote health and prevent disease if public health benefits were to become a priority for urban

forestry planning and decision making. Across life spans and human health, one analysis found annual health costs savings to be billions of dollars per year.

Nature for Health Policy

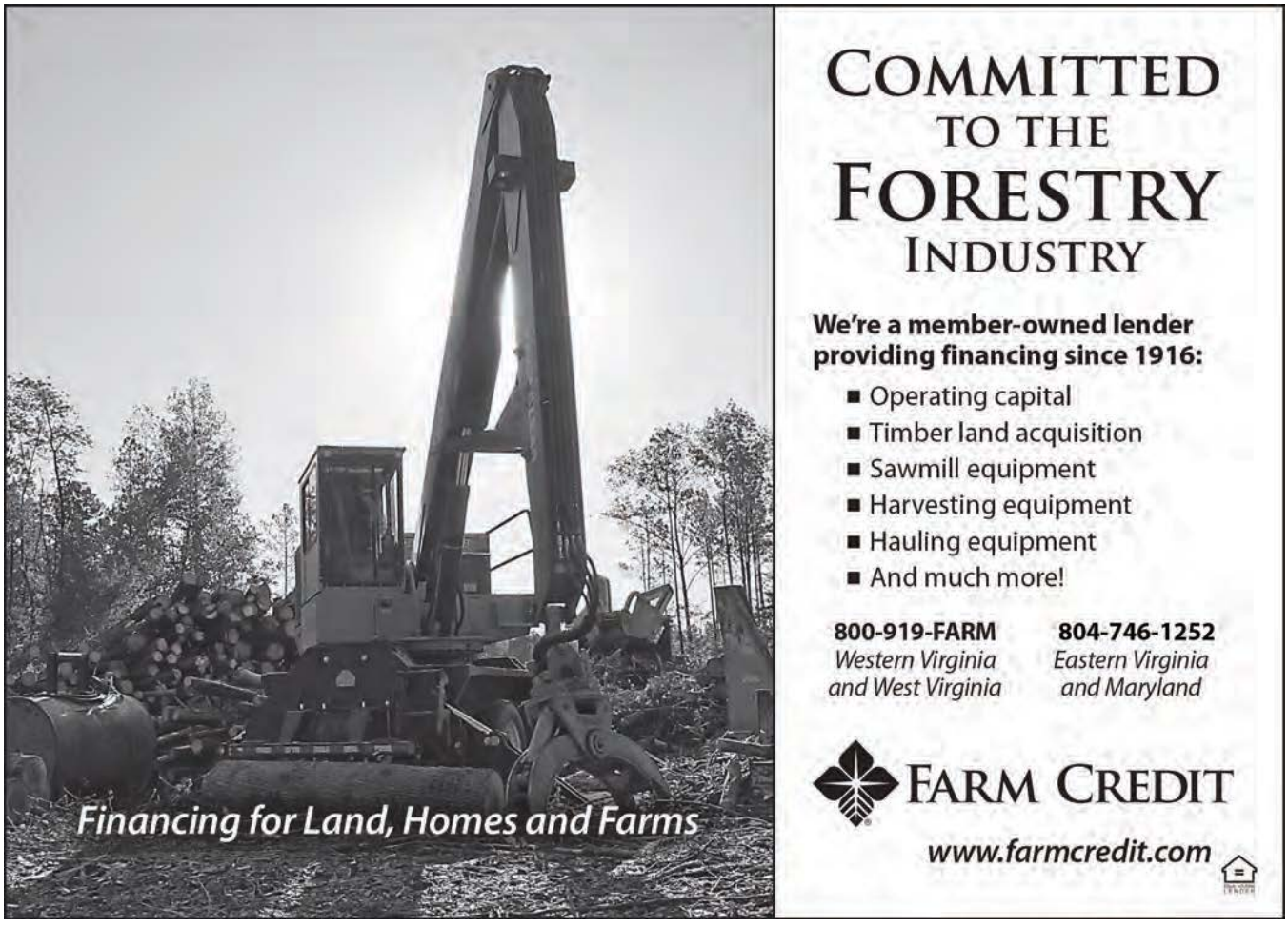
While this article has focused on trees, the Green Cities: Good Health website summarizes thousands of studies that point to a wide array of health benefits associated with urban greening. Many cities are incorporating public health into comprehensive policies to create more livable places. Urban greening strategies—gardens, parks, natural areas, and green infrastructure—are integrated into housing, transportation and infrastructure planning and policy, using a sites-to-systems outlook. New finance and policy initiatives are being explored to enable tree planting for public health. Within these initiatives there is attention to equity and the recognition that all in the community should have access to nature, recognizing historic disparities in distribution of trees across neighborhoods. From individuals to entire cities, trees are not just 'nice to have' but are profoundly important to support quality of life and wellness.

Dr. Kathleen Wolf is a Research Social Scientist at the College of the Environment, University of Washington (Seattle, USA) and a key collaborator with the US Forest Service Pacific NW Research Station on urban forestry studies. She consults as a research advisor with the the TKF Foundation's Nature Sacred program. Dr. Wolf's research explores the human dimensions of urban ecosystems. She has also worked professionally as a landscape architect and as an environmental planner. Kathy's professional mission is to discover, understand and communicate human behavior and benefits, as people experience nature in cities and towns. Moreover, Kathy is interested in how scientific information can be integrated into local government policy and planning. For more information see: www.nature-within.info; and the Green Cities: Good Health project: www.greenhealth.washington.edu.

RESOURCES

Green Cities: Good Health, University of Washington (Seattle): www.greenhealth.washington.edu

Outside Our Doors: The Benefits of Cities Where People and Nature Thrive. The Nature Conservancy: http://www.washingtonnature.org/cities/outsideourdoors/

Nature's Riches: The Health and Financial Benefits of Nearby Nature. The Nature Conservancy and University of Washington: http://www.naturewithin.info/New/2016.11.Economic_Benefits_of_Nature_in_Cities.KWolf.pdf, Spanish: http://www.naturewithin.info/New/2018.3.TNC_Natures%20Riches_Economic%20benefits%20of%20nature_Spanish.pdf

The Power of Trees. The Nature Conservancy, video link: http://www.washington-nature.org/power-of-trees-video