urban forest benefits
Pierce County WA, Chambers Creek Properties

Stormwater Management
Urban Heat Island Effect

studies by NASA & EPA

urban trees = mitigation
Hilton Head, South Carolina
STRUCTURE

FUNCTION

VALUE

MANAGEMENT

Eco (UFORE)
Streets (STRATUM)
Hydro
Vue

photo credits: Seattle i-Tree Training by Al Zelaya
Million Tree campaigns

political support

e.g. New York
Los Angeles
Miami
environmental benefits
human health & well-being
economic benefits
Finding that study . . . . . .
Research Reviews

Green Cities: Good Health

Metro nature - including trees, parks, gardens, and natural areas - enhance quality of life in cities and towns. The experience of nature improves human health and well-being in many ways. Nearly 40 years of scientific studies tell us how. Here’s the research...

www.greenhealth.washington.edu
Local Economics

Trees in cities are not grown and managed for products that can be bought and sold on markets, but they do provide many intangible services and functions! This article serves two purposes. First, it introduces valuation methods that are used to convert intangible benefits to dollar sums. Then, it shows how nonmarket valuations can support local decision-making.

Fast Facts

- The presence of larger trees in yards and as street trees can add from 3% to 15% to home values throughout neighborhoods.
- Averaging the market effect of street trees on all house values across Portland, Oregon yields a total value of $1.35 billion, potentially increasing annual property tax revenues $15.3 million.
- A study found 7% higher rental rates for commercial offices having high quality landscapes.
- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy.
- Shoppers indicate that they will travel greater distance and a longer time to visit a district having high quality trees, and spend more time there once they arrive.
Urban Green :: Human Health & Well Being

> 2,400 articles

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Research Review and Summaries

Sponsors:
University of Washington
USDA Forest Service, U&CF Program
NGO partners

thanks to U of WA students:
Katrina Flora
Mary Ann Rozance
Abraham Maslow
Hierarchy of Needs

- Physiological: breathing, food, water, sex, sleep, homeostasis, excitation
- Safety: security of body, employment, resources, morality, the family, health, property
- Love/belonging: friendship, family, sexual intimacy
- Esteem: self-esteem, confidence, achievement, respect of others, respect by others
- Self-actualization: morality, creativity, spontaneity, problem solving, lack of prejudice, acceptance of facts
Nature :: From Aesthetics to Necessity in Cities – reading list

- Last Child in the Woods: Saving Our Children from Nature Deficit Disorder – Richard Louv
- The Human Relationship with Nature: Development and Culture – Peter H. Kahn
- The Nature Principle: Reconnecting with Life in a Virtual Age – Richard Louv
- The Biophilia Hypothesis – edited by Stephen R. Kellert and E.O. Wilson
- Biophilic Cities: Integrating Nature into Urban Design and Planning – Timothy Beatley
human health & well-being
workplace productivity
Urban Green :: Human Health & Well Being

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Attention Restoration Theory
Rachel & Stephen Kaplan U of MI
Workplace Nature Views

- **Well-being**
  - desk workers without view of nature reported 23% more ailments in prior 6 months

- **Job Satisfaction**
  - less frustrated and more patient
  - higher overall job satisfaction and enthusiasm

ART Design Elements

- being away
- ‘soft’ fascination
- extent
- compatibility
bottom line = $$ benefits of trees & nature
human health & well-being
hospitals, therapy & healing
hospital healing gardens: patients; family and friends; professional staff

health care $$ savings
healing gardens
soothing
distracting
calm focus
1990 to 2007, 1,296 counties in 15 states infected areas vs. no bugs
15,000 more deaths from cardiovascular disease
6,000 more deaths from lower respiratory disease
controlled for demographic, human mortality, and forest health data at the county level

Toledo, Ohio in 2006, pre EAB
2009, EAB in neighborhood

photos: Dan Herms, Ohio State University
human health & well-being
kids & youth
Urban Trees and Birth Outcomes

“... a 10% increase in tree-canopy cover within 50m of a house reduced the number of [low weight] births by 1.42 per 1000 births. Results suggest that the natural environment may affect pregnancy outcomes...”

Donovan et al., Health & Place, 2011
School & Learning
College students with more natural views from their dorm windows
- scored higher on tests of capacity to direct attention
- rated themselves as able to function more effectively

Tennessen & Cimprich. 1995. Journal of Environmental Psychology
Green High School Campuses

- cafeteria & classroom window views with greater quantities of trees and shrubs
- positively associated with:
  - standardized test scores,
  - graduation rates
  - %s of students planning to attend a four-year college
  - fewer occurrences of criminal behavior
Nature & Psych Development
children’s play & imagination
Nature Deficits
Richard Louv
http://www.treeclimbing.jp/
• physically disabled & tree climbing!
recreational tree climbing – youth therapy
nature recovery & schools
first phase - reading circle
nature recovery & schools

Parks & People Foundation, Baltimore
Parks & People Foundation, Baltimore

planning skills & efficacy
human health & well-being

closing comments
Restorative Nature
Beyond the City
Evidence about the importance of ‘nearby nature’