Nature & Human Health
proving the obvious?

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What do we know?

What are the evidence 'stories'?

What are the evidence sources?
Urban Forests and Newborns
the natural environment may affect pregnancy outcomes...
10% increase in tree-canopy cover within 50m of a house
= lower number of low weight births (1.42 per 1000 births)

Donovan et al., Health & Place 2011;
Hystad et al., Env Health Perspectives 2014
Healthy Microbiome

- control obesity & asthma
- boost immune function
- improve mental health

Bloomfield et al. 2016 Perspectives in Public Health

put aside the Hygiene Hypothesis

need contact with ‘Old Friends’
intestinal microbiome development

Arrieta et al. 2014. Frontiers in Immunology
LEARN  CONNECT  ACT

JOIN THE MOVEMENT TO CONNECT CHILDREN TO NATURE
GREEN SCHOOLYARDS HELP KIDS FEEL:

- CALMER & LESS STRESSED
  - Views of green landscapes from classroom windows helped high school students recover more quickly from stressful events.

- POSITIVE & RESTORED
  - Forest schools enhanced positive and decreased negative emotions.

- RESILIENT
  - Natural areas enhanced feelings of competence and increased supportive social relationships that help build resilience.

GREEN SCHOOLYARDS PROMOTE SOCIAL-EMOTIONAL SKILLS

- PRACTICE RELATIONSHIP SKILLS
  - Children demonstrated more cooperative play, civil behavior and positive social relationships in green schoolyards.

- DEVELOP SELF-AWARENESS & SELF-MANAGEMENT
  - Green schoolyards can reduce aggression and discipline problems.
  - Gardening at school helped students feel proud, responsible & confident.

THE STATISTICS on CHILDREN & NATURE
Trees & Physical Activity

- school children in cities grades 6 to 8
- relationship of tree cover to outside-of-school physical activity
  - 5% increase in treed area cover = 5% increase in free-time physical activity

Design for Nature
Contact
physically disabled & tree climbing!
The medicine of being in the forest
We are the leading global voice for forest bathing and forest therapy

Santa Rosa, California
Ascending the Giants, Portland OR
public health officials
moderate activity
recommendations

parks, active living, active transit
EAB Tree Loss & Public Health

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

photo credits: Dan Herms, Ohio State U
Sacramento Study :: LIDAR x CHIS data
7,900 adults, 250 m buffer, covariates

more tree cover
= better overall health
= better social cohesion

Improving Depression

20 adults with major depression walk in a park setting and a built setting

- 50-minute walks one week apart
- before-after testing:
  - Mood: Positive and Negative Affect (PANAS)
  - Cognition: Backward Digit Span (BDS)

Berman et al. 2012. *Journal of Affective Disorders*

Cognitive & affective improvements after walking in a nature setting
Canopy Cover & Stress

Images of canopy cover varied 0-60%.

Tree cover shows an inverse relationship with depressive symptoms in elderly residents living in U.S. nursing homes

Matthew H.E.M. Browning, Kangjae Lee, Kathleen L. Wolf
City Trees & Human Health

newborn & infant health
increased physical activity for kids
student therapy
overall adult health
social cohesion
respiratory & cardiovascular health
reduced depression
elder care improvements
What do we know?

What are the evidence sources?

What are the evidence ‘stories’?
Story: Nature for Human Health Benefits Across the Life Cycle
Green Cities: Good Health
www.greenhealth.washington.edu

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Research Reviews & Summaries
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.
Outside Our Doors

The benefits of cities where people and nature thrive.

design: milepost

co-author: UAS

co-author & printing: The Nature Conservancy
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Last thoughts . . .
Story: Nature for Human Health Benefits Across the Life Cycle