Measuring the Economic Benefits of Greening

valuation of "Human Services"

Kathleen L. Wolf, Ph.D.
College of Forest Resources
University of Washington
kwolf@u.washington.edu

urban nature - economic value?
Maia says, “science rocks!”

30+ years of urban nature science
Urban Ecosystems & Greening
Environmental Services

- Air pollutants reduction
- Nitrogen, phosphorus and sediment interception
- Carbon emissions reduction & sequestration
- Urban heat-island cooling
- Reduced “bad” ozone
- Stormwater runoff reduction
- Wildlife habitat

Urban Ecosystems & Greening
Community Economics

- Improved consumer environments in business districts - 9-12% product spending
- Residential real estate values - 3-7% with trees in yard
- Residential real estate values - 5-20%, proximity to natural open space
- Commercial property rental rates - 7%
- Air pollution mitigation
- Heating and cooling costs reductions
- Less frequent pavement replacement
Most cherished in this mundane world
is a place without traffic;
truly in the midst of a city
there can be mountain and forest.

Wen Zhengming (1470-1559)
Urban Ecosystems & Greening
Human Health & Well-Being

- Improved surgery and illness recovery
- Stress reduction in urban lifestyles
- Reduced driving stress response & frustration
- Improved community walkability, lower BMI

“Human Services”

Urban Ecosystems & Greening
Human Cognition & Functioning

- Higher job satisfaction, reduced absenteeism
- Lower crime rates in well landscaped areas
- Reduced violence and more constructive conflict resolution in domestic conflict
- Reduced ADHD symptoms

“Human Services”
Putting a price on nature is a crude, risky business

WHAT price would you put on the benefits, material and non-material, of a healthy planet? How much would you pay to live in a world with clean air and water, and species of plants, animals and microorganisms? This is what the World Health Organization is trying to find out.

In its article titled “What is Nature Worth?” the organization estimates the value of the world’s natural assets at $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.

The World Health Organization estimates that the value of the world’s natural assets is about $82 trillion, which is about 40 percent of the value of the world’s economy. The value of nature is estimated to be $52 trillion, or about 20 percent of the world’s GDP. The value of the environment is estimated to be $29 trillion, or about 10 percent of the world’s GDP.
Valuation of Greening Benefits

What is it? What is full value? What is its worth?
Who, When & How? Who should know? Where? determine range
define benefit determine value determine range

www.cfr.washington.edu/research.envmind

Collaboration? Economists?

Human Dimensions of Urban Forestry and Urban Greening

Research Director: Kathleen L. Wolf, Ph.D.

Nature and Consumer Environments
Research related to the social and cultural implications of urban green spaces.

Trees and Urbanization
Studies of the effects of urbanization on the urban environment.

Urban Forestry and Human Benefits
Research on the benefits of urban forestry.

www.cfr.washington.edu/research.envmind