From Risk to Reward: How Nature Supports Human Well-Being

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Rachel Carson (1907-1964)
A Remarkable Career

- aquatic biologist, U.S. Bureau of Fisheries
- 1950s full time nature writer
- 1951 Sea Around Us, National Book Award
- The Edge of the Sea, Under the Sea Wind
- 1962 Silent Spring, national pesticide policy
- launched grassroots environmental movement
- creation of the Environmental Protection Agency

Pervasive Pesticides

Glenbow Archives NA-5680-667a
Environment = Toxin, Risk

Love Canal, NY
Niagra Falls, NY
Cuyahoga River, OH

Environment & Health Boost

Beyond Toxicity
Human Health and the Natural Environment
Howard Frumkin, MD, DrPH, FACP, FACEM

Abstract:
Research and teaching in environmental health have centered on the hazardous effects of various environmental exposures, such as toxic chemicals, radiation, and biological and physical agents. However, some environmental exposures may have positive health effects. According to E.O. Wilson’s “biophilia” hypothesis, humans are innately attracted to other living organisms. Later authors have expanded this concept to suggest that humans have an innate bond with nature more generally. This implies that certain kinds of contact with the natural world may benefit health. Evidence supporting this hypothesis is presented from four aspects of the natural world: animals, plants, landscapes, and wildernes. Finally, the implications of this hypothesis for a broader agenda for environmental health, encompassing not only toxic outcomes but also salutary ones, are discussed. This agenda implies research on a range of potentially healthful environmental exposures, collaboration among professionals in a range of disciplines from public health to landscape architecture to city planning, and interventions based on research outcomes.


American Journal of Preventive Medicine, 2001
Evidence about ‘nearby nature’ and health

Nature :: From Aesthetics to Necessity in Cities
From Risk to Reward: How Nature Supports Human Well-Being

natural resource systems in cities
green infrastructure

Citywide Benefits
Million Tree campaigns

e.g. New York
Los Angeles
Miami

Stormwater Management

Pierce County WA, Chambers Creek Properties
Pierce County WA, Chambers Creek Properties - 4 year growth

stormwater management

Parks & People Foundation, Baltimore
Urban Heat Island Effect
studies by NASA & EPA

urban trees = mitigation
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creating human habitat
health, well-being, and better function

Home & Daily Life Scale
Physical Inactivity & Obesity

The majority of Americans are not active enough:
- Goal: 30 minutes per day of moderate activity to reduce risk factors for chronic diseases (heart, stroke, cancer, diabetes)
- Significant costs to national health services

$168 billion medical costs
17% of all U.S. medical costs

CDC 2010

Obesity Trends* Among U.S. Adults

1985

(*BMI ≥30, or ~30 lbs overweight for 5’4” person)

No Data <10% 10%-14%

Source: Behavioral Risk Factor Surveillance System, CDC.
Obesity Trends* Among U.S. Adults

2008

(*BMI ≥30, or ~ 30 lbs. overweight for 5’4” person)

Source: Behavioral Risk Factor Surveillance System, CDC.

Obesity Trends* Among U.S. Adults


(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)

Source: Behavioral Risk Factor Surveillance System, CDC.
Age-adjusted % of adults aged $\geq 20$ years who are obese, 2007

City Trees & Nature
Active Living

Table 1: Determinants of City Walkability
parks, open spaces & trails

Parks Prescription
San Francisco
Albuquerque

From Fitness Zones to the Medical Mile: How Urban Park Systems Can Best Promote Health and Wellness
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

the better office cubicle!

bottom line = $$ benefits of trees & nature

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summary & closing thoughts
Human Habitat
Community Commitment
Environmental Solutions

- evidence says! experience of nature in cities is profoundly important for public health and human well-being
- much more than risk prevention
- ‘critical mass’ of high quality research, U.S. +
- translate the evidence into urban policy and programs

40 years of study . . .
importance of ‘nearby nature’
planning at all scales: citywide to small places

home & daily life
social connections!
additional partners . . .
public & private lands . . .
education & schools
social services
public health
medical pros
private sector

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