

Human Services Provided by Urban Forests Economic Valuation Opportunities

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Social science research has confirmed long-standing claims about the psychosocial benefits that people gain from nature experiences in cities. Investigations of the past several decades have generated a diverse and substantial understanding of how the presence of trees and nature in cities provides human services, ranging across human scales of individuals, neighborhoods and entire cities. Economic valuation is needed to better integrate this knowledge into municipal, state, and federal urban forestry programs.

Proposed Research: Valuation of Human Services Benefits

The environmental services of urban forests are now widely recognized, have been reliably valued in economic terms, and incorporated into resource analysis and planning models. Analogous products are possible concerning nature-based human services. The valuation process, in a very general sense, starts with identification and definition of a benefit or service. Benefit units are described (such as per tree, per individual, per neighborhood etc.) and valued (using deferred costs, hedonic pricing, contingent valuation and other econometrics). The value units are then aggregated across specific populations or geographic units. Multiple benefit types may be combined into models (such as UFORE or STRATUM). There is extensive scientific evidence of human services benefits derived from urban trees and nature - next steps are valuation, aggregation and modeling.

Human Services Dimensions – Current Knowledge

There are two scales of human services benefits – individual and community. Summaries of the scientific evidence of four dimensions are described. These dimensions are not mutually exclusive; elements of one dimension may interact with another.¹

Individual Health: Hospital patients who have a view of nature recover faster from surgery and require less medication for pain.² Views of nature reduce physiological stress response,³ including driving stress.⁴ Preliminary research suggests that urban forests contribute to more walkable cities and increase recreation benefits.⁵ More active lifestyles combat obesity, improve cardiovascular health, increase longevity, and enhance physical development of children.⁶ Trees may help reduce massive personal and public spending for health services.

Individual Mental Functioning: Nearby nature provides restorative experiences that help us to overcome the mental fatigue associated with urban lifestyles.⁷ Desk workers who have a view of nature report greater job productivity and satisfaction.⁸ Experiences of urban nature help children be more disciplined,⁹ and can reduce attention deficit disorders.¹⁰

Community Wellness: Well-managed urban forests can strengthen communities by empowering citizens,¹¹ improving social ties,¹² reducing crime,¹³ and revitalizing neighborhoods.¹⁴ The urban forest contributes to a sense of place.¹⁵ Trees add to our quality of life and make our cities and towns better places to live,¹⁶ work, play,¹⁷ and learn.¹⁸

Community Development: The economic value of a well-managed urban forest includes increased property values,¹⁹ higher rental rates for commercial properties,²⁰ and positive consumer response in business districts.²¹ A city having high environmental quality is an attractive environment for new businesses.²² These benefits can generate a larger local tax base, providing revenue to offset urban forest management costs.

Research Need

The human services benefits provided by urban trees are diverse, substantial and scientifically recognized. Translating these benefits into economic terms would better enable communities to comprehensively consider and commit to urban forest investments. Funding is needed for research to continue identifying benefits, and to support valuation science and technology transfer.

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