

Health Benefits of Street Trees

Street trees can have an important role in improving the environment and moderating the climate of urban areas. Positive impacts include reducing air pollution, noise levels, wind speeds, summer temperatures, and ultraviolet (UV) radiation through shading, providing an environment conducive to physical activities, reducing stress and improving mental health. Associated public benefits include potential savings to the National Health Service from avoided heat stroke and skin cancer.

A literature review was commissioned to assess existing economic evidence. Although the review found a growing body of research that generally confirms the existence of these benefits, economic estimates are currently sparse.



Background

Issues of how to promote and improve the health of the UK population and reduce the cost of ill-health to the NHS are always near the top of the public finance agenda. Health and well-being objectives have been elements of each country's forest strategy, and street trees are considered to have a potentially important role in helping society adapt to climate change.

Objectives

This research aimed to:

- Assess recent economic evidence of the health benefits provided by street trees focusing upon their role in moderating urban climates and environments.
- Highlight gaps in the current evidence base.

Methods

- Literature search
- Literature review focusing on the most recent published evidence (since 2000) of health and wellbeing benefits, with special attention given to economic estimates. Where evidence on health benefits provided by street trees were lacking, benefit estimates for woodlands were reviewed.

Findings

The review showed that there is a growing body of research generally, but not unanimously, confirming the above health benefits of greenspace and street trees in particular. However, economic estimates of these health benefits are scarcely available at present, especially ones that focus on street trees.

At present a small number of papers move a step forward from asserting and/or researching the link between street trees and health and well-being to estimating a number of avoided excess deaths or hospital admissions. For example, a study of the East London Green Grid (a proposed network of interlinked, multi-purpose and high quality open spaces) indicated that 2 deaths and 2 hospital admissions would be averted per year as the result of establishment of 5.5% greenspace (comprised of 25% of trees) in a single 10 km by 10 km square covering the boroughs of Newham and Greenwich.

None of the papers reviewed took the further step and put a monetary value on the health benefits of street trees.

Research on economic benefits from reductions in noise, UV radiation, and wind speeds in winter is especially limited at present.

Recommendations

Future research priorities are three-fold and could be facilitated by interdisciplinary cooperation.

- Where research on health benefits of street trees is in its infancy, e.g. reduction in noise or UV radiation levels, health scientists should initially do standard empirical studies to reveal any measurable health outcomes such as avoided excess morbidity and mortality, increases in quality adjusted life years, avoided hospital admissions and/or treatments.
- Using the above findings from the health studies, economists then can estimate the economic benefits of improved health due to street trees.
- Finally, economists can analyse urban tree planting and management options to identify the most cost effective ones, including optimal locations.

Funding/Support

Funded by the Forestry Commission

For further information contact: vadims.sarajevs@forestry.gsi.gov.uk

Reports and Publications

SARAJEVS, V. (2011) *Health Benefits of Street Trees*, Research Note, Forest Research.