

# Nordic Cities: **Green, Resilient, Healthy**

---

**Fostering national policies and initiatives  
for urban green space**

Ulrika Åkerlund (Nordic Working Group on Sustainable Cities)  
Cecil C. Konijnendijk (Nature Based Solutions Institute)



# Nordic Working Group on Sustainable Cities

- As part of Nordic co-operation, the Ministers for the Environment and Climate appointed a **working group** to strengthen work on sustainable urban development focusing on **urban greenery** and **ecosystem services**.
- Goal: **increase proportion of existing urban green and new forms of nature** with good quality that contribute to sustainable urban development in a changing climate, and develop and strengthen the **attractiveness of Nordic cities**.
- The group promotes the exchange of experience, method development, and policy development.
- An **idea paper/ policy brief** on urban green spaces is one of the working group's work packages.



# Global focus on sustainable & green cities

## TARGET 3.4



### REDUCE MORTALITY FROM NON-COMMUNICABLE DISEASES AND PROMOTE MENTAL HEALTH

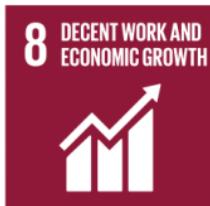
By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

## TARGET 11.7



### PROVIDE ACCESS TO SAFE AND INCLUSIVE GREEN AND PUBLIC SPACES

By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.



SUSTAINABLE  
DEVELOPMENT  
GOALS



# Critical infrastructure

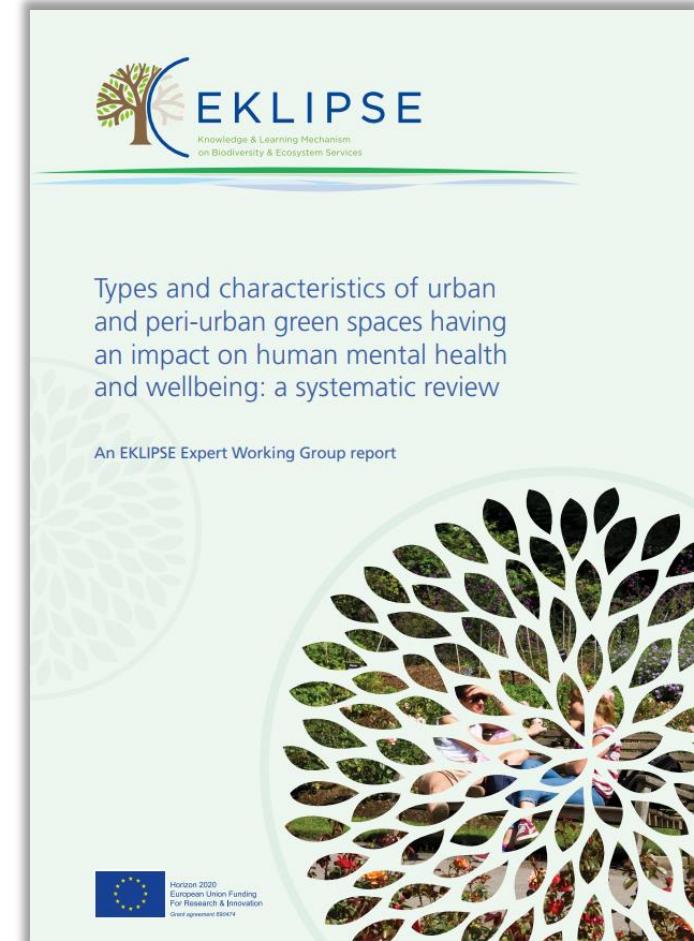
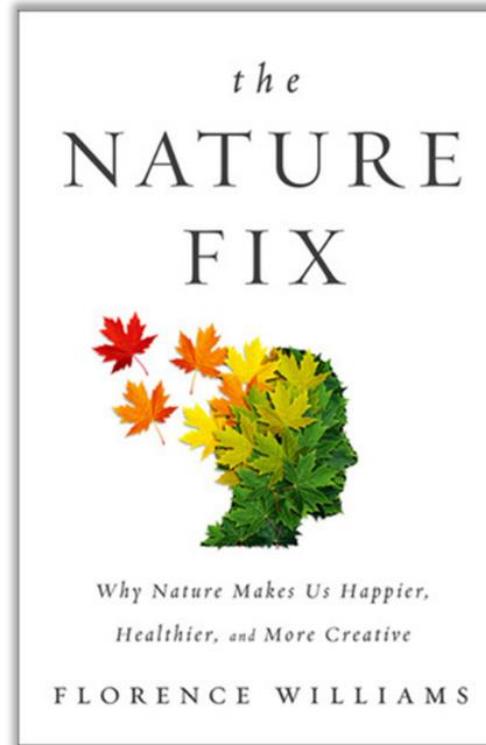


Nordic Council  
of Ministers

- Green spaces should be considered part of critical infrastructure, assets essential for the functioning of societies and economies.
- Climate change adaptation – e.g., cooling, stormwater regulation
- *Public health benefits – physical, mental, social, cognitive*



**Visible nature:** *Visible Greenspace* 100 m was defined as greenspace percentage in a 100-meter buffer, and *Visible Natural Space* 100 m was defined as greenspace and bluespace percentage within a 100-meter buffer;



## RESEARCH ARTICLE



# Scale-dependent interactions between tree canopy cover and impervious surfaces reduce daytime urban heat during summer

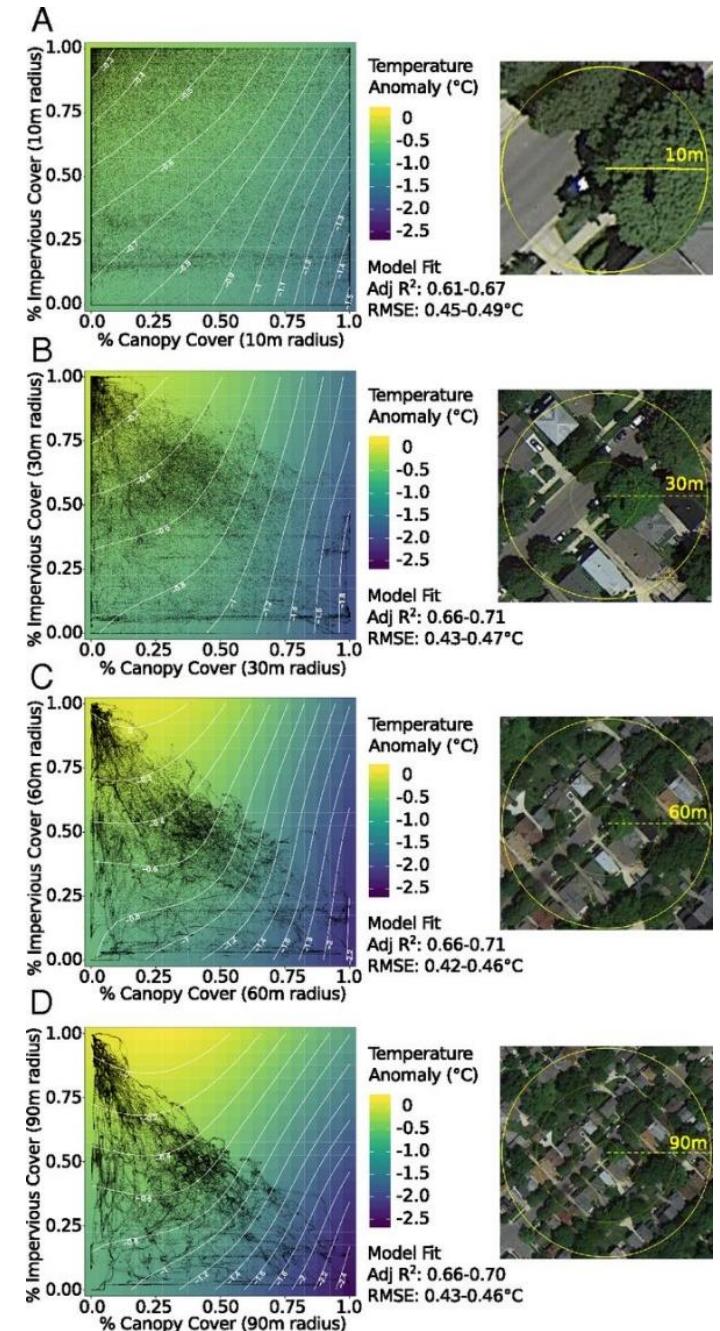
Carly D. Ziter, Eric J. Pedersen, Christopher J. Kucharik, and Monica G. Turner

+ See all authors and affiliations

PNAS April 9, 2019 116 (15) 7575-7580; first published March 25, 2019; <https://doi.org/10.1073/pnas.1817561116>

## Significance

Cities worldwide are experiencing record-breaking summer air temperatures, with serious consequences for people. Increased tree cover is suggested as a climate adaptation strategy, but the amount of tree canopy cover needed to counteract higher temperatures associated with impervious surface cover is not known. We used a bicycle-mounted measurement system to quantify the interaction of canopy cover and impervious surface cover on urban air temperature. Daytime air temperature was substantially reduced with greater canopy cover ( $\geq 40\%$ ) at the scale of a typical city block (60–90 m), especially on the hottest days. However, reducing impervious surfaces remained important for lowering nighttime temperatures. Results can guide strategies for increasing tree cover to mitigate daytime urban heat and improve residents' well-being.



## Distance to Green Space and Physical Activity: A Danish National Representative Survey

in Journal of Physical Activity and Health

Mette Toftager, Ola Ekholm, Jasper Schipperijn, Ulrika Stigsdotter, Pet...

[View More +](#)

DOI: <https://doi.org/10.1123/jpah.8.6.741>

Keywords: built environment; exercise; overweight; public health; health survey

In Print: Volume 8: Issue 6

Pages: 741–749

Persons living more than 1 km from green space had a higher odds of being obese than those living less than 300 m from green space

Those living more than 1 km away has lower odds of using green space to exercise

### Relation between frequency of use and distance

As expected, we found a distance-decay in use of UGS. If the self-estimated distance to the nearest UGS is more than 100 m, the number of respondents that use this UGS daily drops to 7.8% compared to 15.4% daily visitors for respondents living within 100 m (data not shown). To determine which distance measure is best at

Schipperijn et al. 2010

# Vision and Principles



Enhancing Nordic leadership in urban green space planning and management – fostering the Nordic Green City of the Future

This is done by working with the principles of:

- Proximity (including visibility)
- Connectivity
- Diversity
- Equity

# Proximity

Latest research shows that living within 300 metres of the nearest public green space enhances various health benefits.

The importance of visible green on mental health is increasingly recognised.

WHO's European Office has set a standard for proximity based on this.



An aerial photograph of a city, likely Jyväskylä, Finland, showing a mix of residential buildings, apartment complexes, and large areas of green pine forests. The city is built on hills, with roads winding through the landscape. The word "Connectivity" is overlaid in the upper left quadrant.

# Connectivity

# Diversity



*Stora Sjöfallet, Stockholm*

**Dense and green, diversity and proximity**



# Equity





## Promoting health and wellbeing through urban forests – Introducing the 3-30-300 rule

### the 3-30-300 rule:



#### 3 trees from every home

The first rule is that every citizen should be able to see at least three trees (of a decent size) from their home. [Recent research](#) demonstrates the importance of nearby, especially [visible](#), green for mental health and wellbeing. During the COVID-19 pandemic, people have often been bound to their homes or direct neighbourhoods, placing even greater importance on nearby trees and other green in gardens and along streets. The Danish municipality of Frederiksberg has a [tree policy](#) that calls for every citizen to see at least one tree from their house or apartment. We should take this one step further.

#### 30 percent tree canopy cover in every neighbourhood

Studies have shown an association between urban forest canopy and, for example, [cooling](#), [better microclimates](#), [mental](#) and [physical health](#), and possibly also reducing [air pollution](#) and [noise](#). By creating more leafy neighbourhoods, we also encourage people to spend more time outdoors and to interact with their neighbourhoods (which in turn promotes social health). Many of the most ambitious cities in the world in terms of greening, including [Barcelona](#), [Bristol](#), [Canberra](#), [Seattle](#), and [Vancouver](#), have set a target of achieving 30% canopy cover. At the neighbourhood level, 30 percent should be a minimum, where cities should strive for even higher canopy cover when possible. Where it is difficult for trees to grow and thrive, e.g. in arid climates, the target should be 30% of vegetation.

#### 300 metres from the nearest park or green space

Many studies have highlighted the importance of proximity and easy access to high-quality green space that can be used for recreation. A safe 5-minute walk or 10-minute stroll is [often mentioned](#). [The European Regional Office of the World Health Organization](#) recommends a maximum distance of 300 metres to the nearest green space (of at least 1 hectare). This encourages the recreational use of green space with impacts on both physical and mental health. Of course it will be important to work with local context, as the needs in e.g., lower-density suburban areas will be different from those in denser urban areas. But also here efforts need

# Governance and Leadership



Develop policies and strategies for urban green spaces, as well as guidelines and norms

Enhance the role of urban green space in planning frameworks

Strengthen collaboration between different levels of government

Build on Nordic leadership in green and resilient cities