

# Natural Environments & Health:

**Action from global to local – is it evidence-based?**

VNP Annual Conference 2017

Ben Wheeler, Senior Research Fellow

UNIVERSITY OF  
**EXETER** | MEDICAL  
SCHOOL



European Centre for  
Environment & Human Health

# What do we know?

Research | Children's Health

## Surrounding Greenness and Pregnancy Outcomes in Four Spanish Birth Cohorts

Payam Dadvarand,<sup>1,2,3</sup> Jordi Sunyer,<sup>1,2,3,4</sup> Xavier Basagaña,<sup>1,2,3</sup> Ferran Ballester,<sup>3,5,6</sup> Aitzana Lertxundi,<sup>3,7</sup> Ana Fernández-Somoano,<sup>3,8</sup> Marina Estarlich,<sup>3,8</sup> Raquel Garcia-Esteban,<sup>1</sup> Michelle A. Mendez,<sup>9</sup> and Mark J. Nieuwenhuijsen<sup>1,2,3</sup>

<sup>1</sup>Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain; <sup>2</sup>IMIM (Hospital del Mar Research Institute), Barcelona, Spain; <sup>3</sup>ISBEM Epidemiologia y Salud Pública (ISBEMESP), Spain; <sup>4</sup>Department of Experimental and Health Sciences, Pompeu Fabra University, Barcelona, Spain; <sup>5</sup>University of Valencia, Valencia, Spain; <sup>6</sup>Center for Public Health Research-CRISP, Valencia, Spain; <sup>7</sup>Department of Preventive Medicine and Public Health, (EHU-UPV), University of the Basque Country, Gipuzkoa, Spain; <sup>8</sup>University of Oviedo, Asturias, Spain; <sup>9</sup>Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

Wheeler et al. International Journal of Health Geographics (2015) 14:1186-1194  
DOI: 10.1186/s12942-015-0009-5

RESEARCH Open Access

## Beyond greenspace: an ecological study of population general health and indicators of natural environment type and quality

Benedict W Wheeler<sup>1\*</sup>, Rebecca Lovell<sup>1</sup>, Sahran L Higgins<sup>1</sup>, Mathew P White<sup>1</sup>, Ian Alcock<sup>1</sup>, Nicholas Kerryn Husk<sup>2</sup>, Clive E Sabel<sup>3</sup> and Michael H Depledge<sup>1</sup>



**Abstract**  
**Background:** Many studies suggest that exposure to natural environments ('greenspace') enhances

## Participation in environmental enhancement and conservation activities for health and well-being in adults (Protocol)

Husk K, Lovell R, Cooper C, Garside R

## Effect of exposure to natural environment on health inequalities: an observational population study

**Richard Mitchell, Frank Poppe**  
**Summary**  
Background Studies have shown that an effect on health and health-related behaviour is pronounced in populations with great through which low socioeconomic position.



Contents lists available at SciVerse ScienceDirect

Health & Place

journal homepage: [www.elsevier.com/locate/healthplace](http://www.elsevier.com/locate/healthplace)

RESEARCH ARTICLE

## The Relationship between Natural Park Usage and Happiness Does Not Hold in a Tropical City-State



Contents lists available at SciVerse ScienceDirect

Social Science & Medicine

journal homepage: [www.elsevier.com/locate/socscimed](http://www.elsevier.com/locate/socscimed)



## Streetscape greenery and health: Stress, social cohesion and physical activity as mediators

Sjerp de Vries<sup>a,\*</sup>, Sonja M.E. van Dillen<sup>b</sup>, Peter P. Groenewegen<sup>c</sup>, Peter Spreeuwenberg<sup>c</sup>

<sup>a</sup>Alterra/Cultural Geography, Wageningen UR, Wageningen, the Netherlands  
<sup>b</sup>Communication Science, Wageningen University, Wageningen, the Netherlands  
<sup>c</sup>NIVEL (Netherlands Institute for Health Services Research), Utrecht, the Netherlands

ARTICLE INFO ABSTRACT



Contents lists available at SciVerse ScienceDirect

Environment International

journal homepage: [www.elsevier.com/locate/envint](http://www.elsevier.com/locate/envint)



## Residential green spaces and mortality: A systematic review

Review article

journal homepage: [www.elsevier.com/locate/envint](http://www.elsevier.com/locate/envint)



## Is access to neighborhood green space associated with BMI among Egyptians? A multilevel study of Cairo neighborhoods

# Recent systematic reviews I: Green/blue space & mental health

“We found limited evidence for a causal relationship between surrounding greenness and mental health in adults”

“The evidence was also inadequate for...access to green spaces, quality of green spaces, and blue spaces in both adults and children”

“The main limitation was the limited number of studies, together with the heterogeneity regarding exposure assessment.”

**[28 Studies]**

**Gascon et al 2015.** Mental health benefits of long-term exposure to residential green and blue spaces: a systematic review. *International Journal of Environmental Research and Public Health* 12, 4354-4379.



## Recent systematic reviews 2: Green/blue space & mortality

“This review supports the hypothesis that living in areas with higher amounts of green spaces reduces mortality, mainly CVD”

“These studies are heterogeneous in design, study population, green space assessment and covariate data”

“Further studies such as cohort studies with more and better covariate data, improved green space assessment and accounting well for socioeconomic status are needed”

**[12 Studies]**

## Recent systematic reviews 3:

### Green space interventions & physical activity

“some evidence (4/9 studies...) to support built environment only interventions for encouraging use and increasing PA in urban green space”

“3/3 studies...[supported] PA programs or PA programs combined with a physical change to the built environment”

“need for longer term follow-up postintervention, adequate control groups, sufficiently powered studies, and consideration of the social environment”

**[12 Studies]**

## Recent systematic reviews 4:

### Conservation volunteering - health & wellbeing

“The majority of the quantitative evidence (13 studies; all poor quality and lower-order study designs) was inconclusive, though a small number of positive and negative associations were observed”

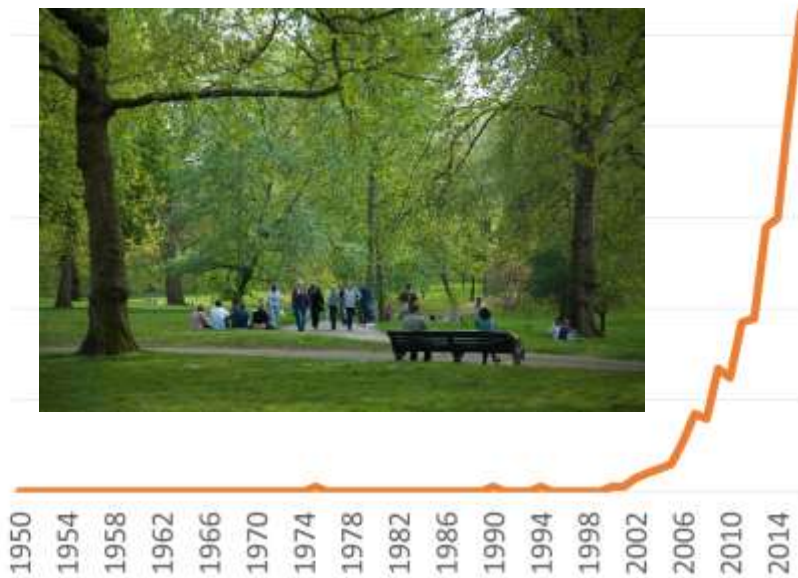
“The qualitative evidence (13 studies; 10 poor quality, 3 good) indicated that the activities were perceived to have value to health and wellbeing through a number of key mechanisms; including exposure to natural environments, achievement, enjoyment and social contact”

**[26 Studies]**

Lovell R, Husk K, Cooper C, Stahl-Timmins W, Garside R (2015) Understanding how environmental enhancement and conservation activities may benefit health and wellbeing: a systematic review. BMC Public Health 15 (1):1-18.

# How much evidence do we need?

Trend in total Medline citations with "green space" or "greenspace"

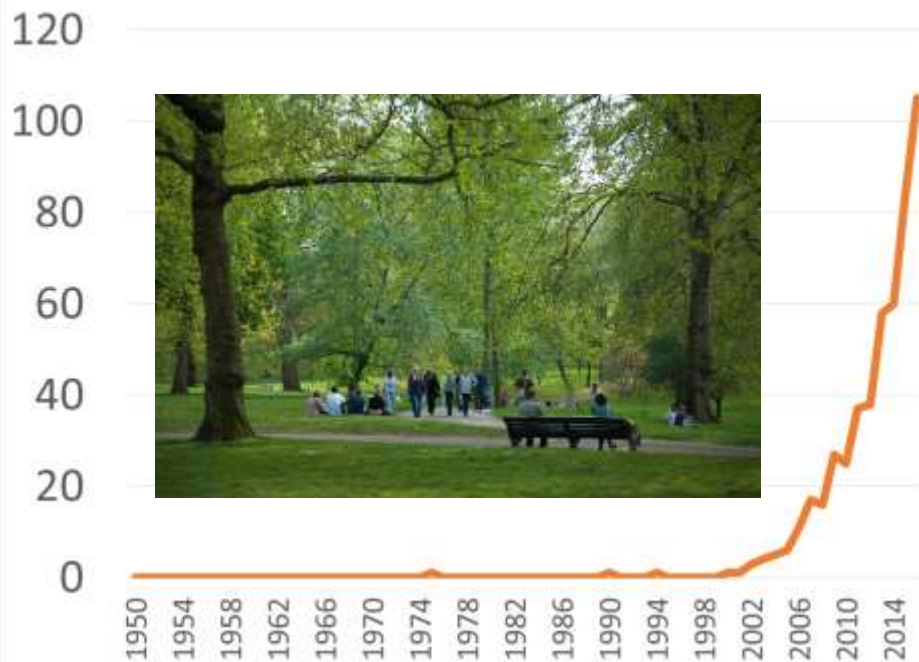


Trend in total Medline citations with "air pollution"

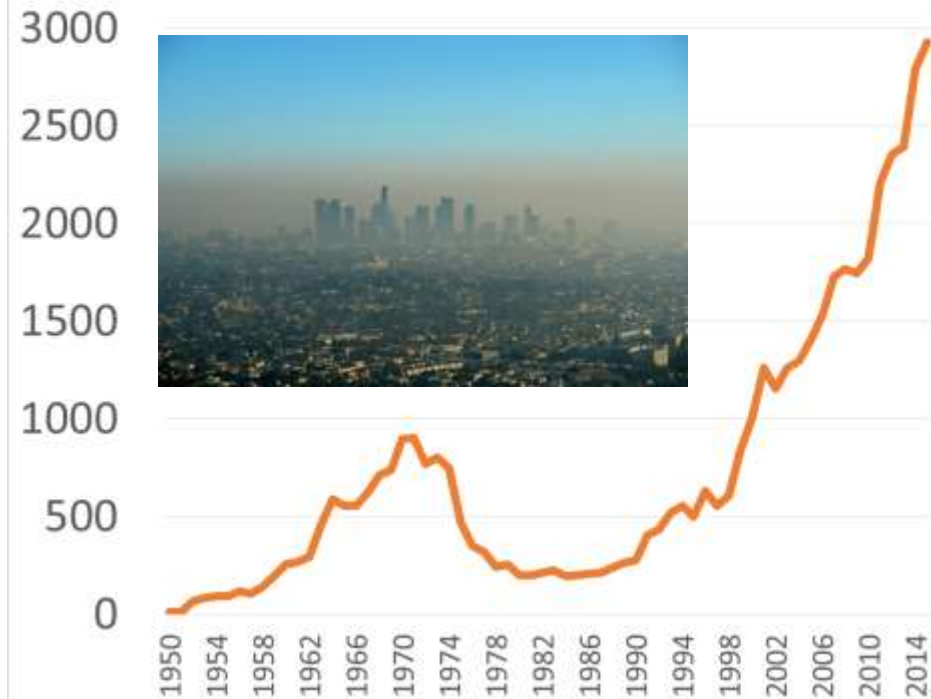


# How much evidence do we need?

Trend in total Medline citations with "green space" or "greenspace"



Trend in total Medline citations with "air pollution"





# Potential Risks

- Nature won't be beneficial for everyone – and could be harmful, e.g.
  - Pollen – allergies
  - Ticks and other disease vectors
  - Accidents – injuries, drowning
- Wider climate change impacts
- Decisions need to recognise risks
- But also need to keep risks in perspective



# So what?

## **Evidence can help to inform:**

- Policy and strategies on greenspace/public open space
- Management decisions over environmental investment
- Conservation policy
- Planning:
  - New urban nature?
  - Building on natural environments– least damage/loss of heath opportunity?

# Parma Declaration

**Commitment** “...to provide each child by 2020 with access to healthy and safe environments and settings of daily life in which they can walk and cycle to kindergartens and schools, and to **green spaces in which to play and undertake physical activity**”

## WHO 2010: Parma declaration on Environment and Health.

Fifth Ministerial Conference on Environment and Health “Protecting children’s health in a changing environment”. Copenhagen: WHO Regional Office for Europe.



# Sustainable Development Goals

## SDG 11.7

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





# WHO

“The evidence shows that urban green space has health benefits, particularly for economically deprived communities, children, pregnant women and senior citizens. It is therefore essential that all populations have **adequate access to green space**, with particular priority placed on provision for disadvantaged communities”

**WHO, 2016: Urban green spaces and health - a review of evidence**



## Urban green spaces and health

*A review of evidence*



# Action Brief

“This brief aims to support urban policy-makers and practitioners by translating the key findings of a review of research evidence and practical case studies on urban green space interventions into implications for practice.”



# 6. How to design urban green spaces

○ Put the green space **close to people**.

- As a rule of thumb, urban residents should be able to access public green spaces of at least 0.5–1 hectare within 300 metres' linear distance (around 5 minutes' walk) of their homes.

[Amongst a large number of other suggestions]

- Why 300m?
  - it seems 'reasonable' based on the evidence (WHO advisory group)
  - Maybe: Grahn & Stigsdotter 2003. Landscape planning and stress. Urban Forestry & Urban Greening

<http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2017/urban-green-spaces-a-brief-for-action-2017>

# National Policy



Department  
for Environment  
Food & Rural Affairs



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## **Evidence Statement on the links between natural environments and human health**

March 2017

### **Introduction and scope**

This evidence statement provides a broad overview of evidence on the links between natural environments and human health. It summarises global, landscape scale and other indirect links between natural environments and human health before considering direct benefits in more detail. The review focuses predominantly on direct benefits to health and wellbeing at the individual and population level which result from use of or exposure to natural environments. It acknowledges but does not focus on environmental threats and stressors such as poor air quality or diseases that can be passed from wildlife to humans.

Health in the forthcoming 25 year plan for the natural environment? [uncertain]





# England's Woods & Forests

## Recreation home page

### Autumn in the forest

Our Top 10 Autumn Spots

What's going on in your local forest this autumn?

Autumn activities for home and the outdoors

### Mindfulness in the forest

Autumn Photo Competition 2017

Win a luxury cabin break & a Fitbit

Staying active



## Mindfulness in the forest



Blog

# Public health matters



Organisations: [Public Health England](#)

## Public health is a priority for our National Parks

Kevin Fenton and Paul Hamblin, 8 August 2016 - Health and Wellbeing



### Public health matters

The official blog of Public Health England, providing expert insight on the organisation's work and all aspects of public health. [More about this blog.](#)

### Categories

### Sign up for updates

Email Atom

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Twitter

# Natural Health Service - Next Steps



The [Natural Health Service](#) has been developed to help combat growing health inequalities across the socially deprived areas, and deliver a cost effective sustainable health service. This aims to reduce the cycle of dependence, enabling us to lead long, active and fulfilling lives using our natural environment.

## Search for projects

### Search terms

### Topic

- Empowering communities (8)
- Economic growth (3)
- Timber and bioenergy (4)
- Wildlife (2)
- Climate change (3)
- Water management (3)
- Recreation and sustainable travel (3)
- Health and well-being (4)
- Play and education (6)
- Culture and landscape (3)
- Green infrastructure planning (6)
- Learning, training and jobs (2)

Search

[Clear search](#)



# Cornwall Council: How do we manage public open space to support both biodiversity and human health and wellbeing?



The screenshot shows the Cornwall Council website. At the top left is the Cornwall Council logo with the motto 'we are of Cornwall by right'. To the right are links for 'Accessibility' and 'Contact'. Below the logo is a search bar with a 'Go' button. A yellow navigation bar contains a 'Print this page' icon. The breadcrumb trail reads: 'You are here: Home Page > Environment and planning > Parks and open spaces > Open Space Strategy & Standards'. A sidebar on the left lists navigation options: 'Home Page', 'Environment and planning', 'Parks and open spaces', and 'Open Space Strategy & Standards'. The main content area is titled 'Open Space Strategy & Standards' and includes a 'Last updated: 28/04/2016' notice and a 'Subscribe' button. The text defines open space as land in public ownership available for recreational or sporting use, including cemeteries and churchyards. It states that open spaces are valued for improving public health, well-being, and quality of life, and that a 2012 study found 95% of residents rated good quality open spaces as important or very important.



Open Space Strategy Adopted July 2014



Biodiversity, health and wellbeing in Cornwall's Public Open Space  
University of Exeter & Cornwall Council



## 1. Natural environments & human health: an overview

This is the first in a series of four evidence report cards summarising what we know about: (a) natural environments and human health; and (b) opportunities for promoting human health and wellbeing through sensitive public open space management.



Biodiversity, health and wellbeing in Cornwall's Public Open Space  
University of Exeter & Cornwall Council



## 3. Designing for green space sustainability

This is the third in a series of four evidence report cards summarising what we know about: (a) natural environments and human health; and (b) opportunities for promoting human health and wellbeing through sensitive 'green' and 'blue' public open space management. This card focuses on how to





# The Question: Action from global to local – is it evidence-based?



**Thanks to** Mike Depledge, Lora Fleming,  
Mat White, Becca Lovell & the rest of the  
team

**b.w.wheeler@exeter.ac.uk**  
 **@benedictwheeler**

**Beyond Greenspace blog** [www.beyondgreenspace.net](http://www.beyondgreenspace.net)