# Health benefits from green infrastructure in urban and peri-urban areas

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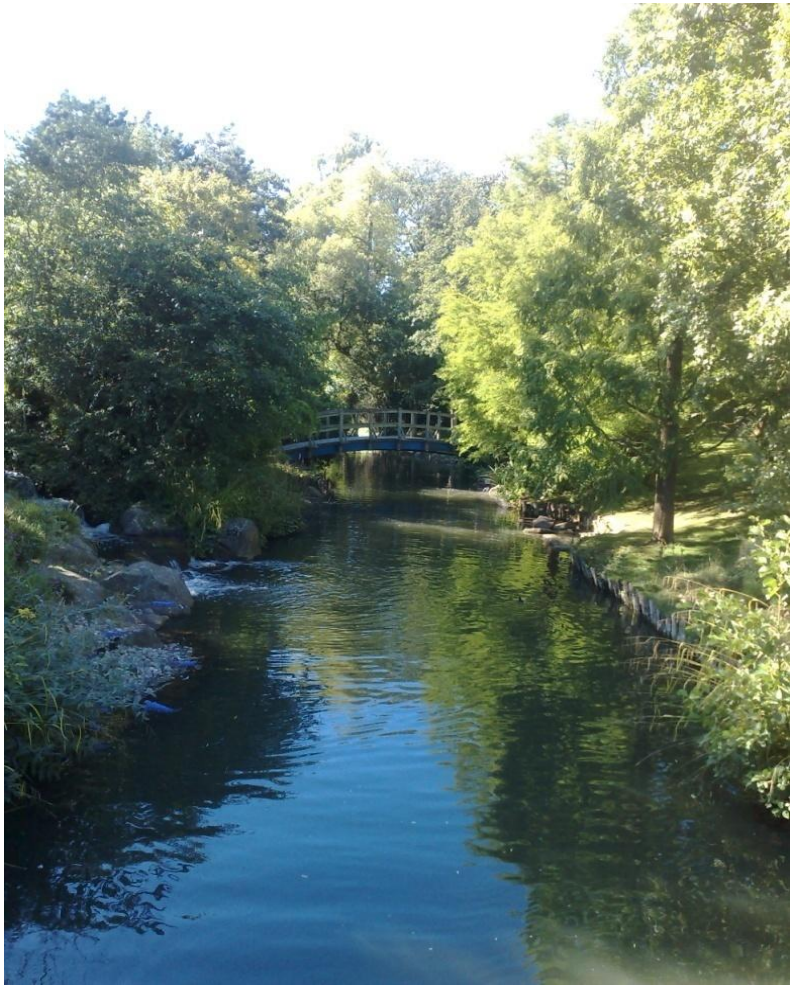
# The healing gift of space

"We all need space;
unless we have it,
we cannot reach
*that sense of quiet*
*in which whispers*
*of better things*
*come to us gently*"

Octavia Hill 1888



# Content of presentation

**Policy context in England**

- Natural Environment White paper : The Natural Choice: securing the value of nature - Equity & Excellence: Liberating the NHS - Public Health White Paper: Healthy Lives, Healthy People

**What does green infrastructure offer for improving health?**

- An overview of the headline facts, resources, MENE evidence, latest research, tools and indicators

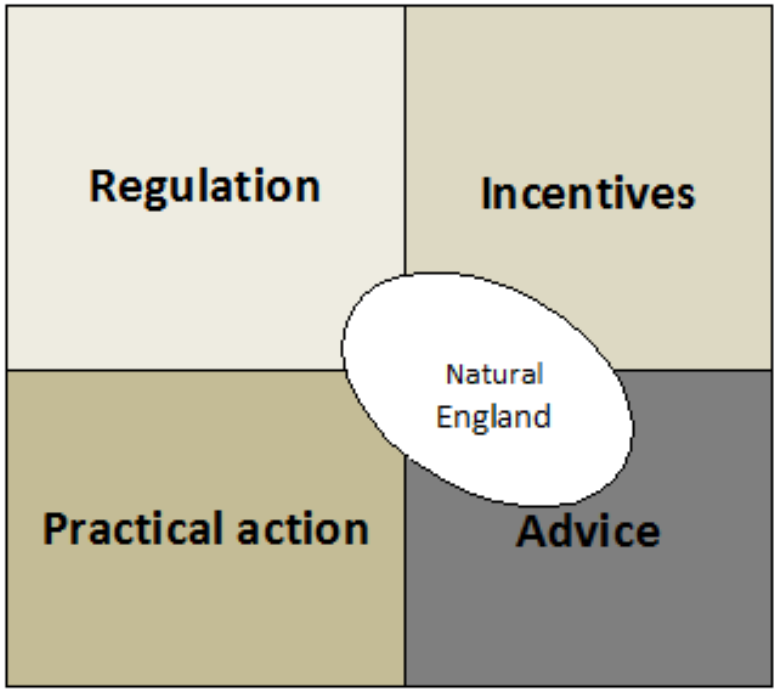
**Summary: the health and ecosystem case for more and better green infrastructure in urban and peri-urban areas**

# Natural England

- **We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations**

- promoting nature conservation and protecting biodiversity
- conserving and enhancing the landscape
- securing the provision and improvement of facilities for the study, understanding and enjoyment of the natural environment
- promoting access to the countryside and open spaces and encouraging open-air recreation, and
- contributing in other ways to social and economic well-being through management of the natural environment

# How Natural England delivers



# Delivering Nature's Ecosystem Services

- A more holistic approach to considering what we all want our natural environment to provide
- To demonstrate that an ecosystem services approach based investment in the natural environment can result in multiple benefits (carbon, water, biodiversity, **recreational and health benefits**...)
- In partnership, work to deliver a range of ecosystem services in a cost effective way and link to those who benefit from them.

- Taking an ecosystem approach

# Context for the ecosystem approach

"The natural world is vital to our existence, providing us with essentials such as food, water and clean air – **but also cultural and health benefits not always fully appreciated because we get them for free.** The UK National Ecosystem Assessment is a vital step forward in our ability to understand the true value of nature and how to sustain the benefits it gives us"

Secretary of State for Environment, June 2011

# Natural Environment White Paper 2011
# The Natural Choice: securing the value of nature

**Defra's** ambition '***We want everyone to be able to make the most of 'nature's health service'***

- ***Public Health England*** *will provide* ***clear, practical Evidence*** *about* ***how to improve health by tackling its key determinants including access to a good natural environment.*** *[NEWP page 46]*

- ***Local Nature Partnerships*** *and the* ***Health and Wellbeing Boards*** *should* ***actively seek to engage each*** *other in their work [NEWP page 46]*

# Equity and Excellence: Liberating the NHS

# Healthy lives; healthy people 2010

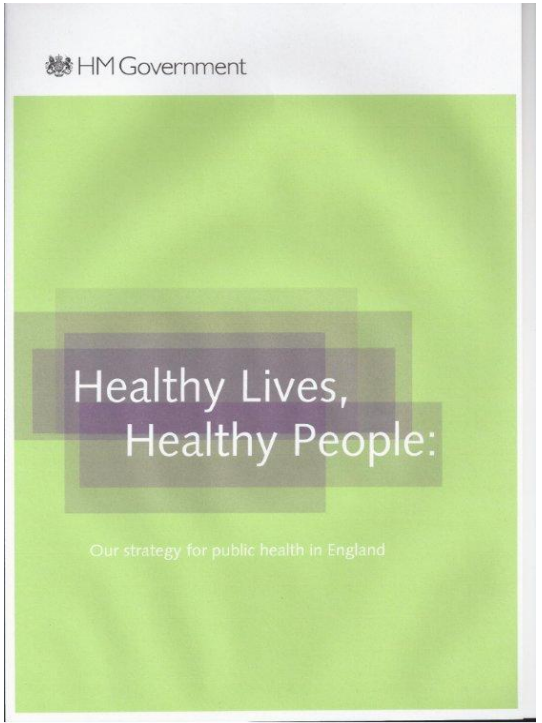
**Equity & Excellence: Liberating the NHS (2010)** sets out a major new role for local authorities in NHS commissioning and health improvement

**Public Health White Paper 2010 - Healthy lives; healthy people.**

The environment (natural and built) is explicitly recognised as a determinant of health.

*The quality of the environment around us also affects any community.* ***Pollution, air quality, noise, the availability of green and open spaces***

"***Green spaces – contribute to improving mental health and quality of community life,*** (Sec 3.33 P39).



# What is the health value of green infrastructure?

# UK National Ecosystem Assessment – some health and green space facts

- Maintaining the UK's green spaces would deliver **£30 billion** in health and welfare benefits each year. However, failing to do so would cost £20bn each year.

- Improvements in quality of life from living close to rivers, coasts and wetlands are worth as much as £1.3 billion per year to the UK.

- If just 1% of the sedentary population moves to a healthy pathway, 1,063 lives and £1.44 billion will be saved each year.

- Contact with nature at any age can derive a whole number of benefits for physical and mental health, but the earlier this shift occurs during life, the greater the impact upon health and society.

# Green infrastructure has direct positive effects on mental health

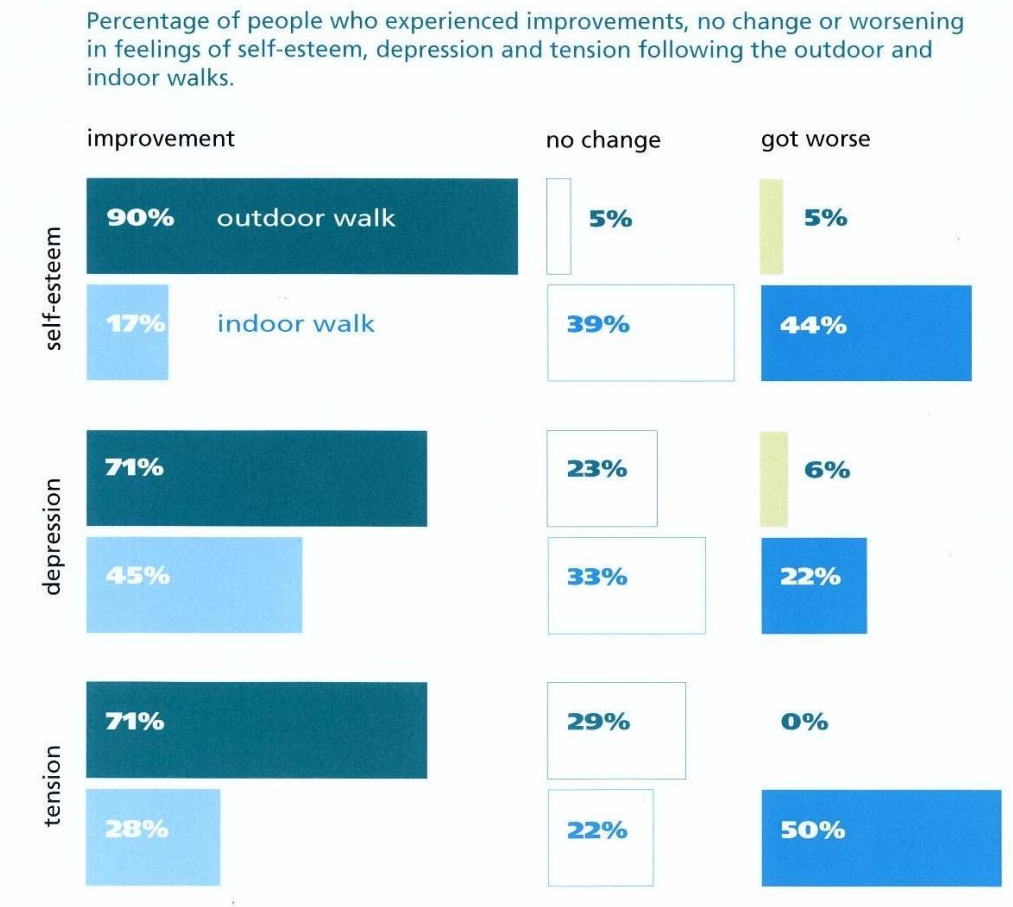
Participating in physical activity in green settings is associated with decreased feelings of tension, confusion, anger and depression, while exhibiting greater feelings of revitalisation (Thompson Coon *et al.* 2011).

Both physical activity and exposure to nature have separately been demonstrated to provide benefits for mental well-being (Pretty *et al.*2003; Pretty *et al.* 2005; Pretty *et al.* 2007; Hine *et al.*2007; Peacock *et al.* 2007).

# Green infrastructure provides outdoor experiences for improved mental wellbeing

Outdoor experiences are rated as more restorative (Hug *et al.* 2009) and More effective in improving mood and vitality (Ryan *et al.* 2010).

Walking in green spaces is more effective at enhancing self esteem and mood than walking indoors (Mind 2007; Peacock *et al.* 2007).



# Green infrastructure encourages physical activity and direct positive effects on health

**Nature can encourage participation in physical activity:** individuals with **easy access to nature** are **three times more likely to participate in physical activity** than those with poorer access and, therefore, **40% less likely to become overweight or obese** (Wells *et al.* 2007; Bowler *et al.* 2010).

**Physical activity can reduce the risk of developing Cardiovascular Disease and the associated risk factors, such as hypertension, high blood lipids and elevated blood pressure, and can also reduce the likelihood of developing Type 2 Diabetes (Blair & Connelly 1996; Biddle *et al.* 2004; Department of Health 2004).**

# Green infrastructure facilitates social activity and has indirect positive affects on health

- Levels of social interaction can be directly influenced by the availability of greenspace (Coley *et al.* 1997; Ward Thompson 2002).

- Urban greenspace, in the form of parks, streets and allotments, can facilitate social contact and give rise to stronger neighbourhood ties (Coley *et al.* 1997; Kuo *et al.* 1998; Ward Thompson 2002).

# Green infrastructure facilitates nature based activities with indirect positive effects on health

If nature is within **close proximity**, there are health benefits via any of **the three levels of engagement** from:

- simply viewing it through a window

  (Ulrich 1984; Pretty *et al.* 2005)

- being in its presence

  (De Vries *et al.* 2003)

- or actively taking part in green activities and wilderness trails

  (Davis-Berman & Berman 1989; Hartig *et al.* 2003; Pretty *et al.* 2007).

# Green infrastructure reduces health inequalities

**Marmot Review 2010: Fair Society, Healthy Lives**

**"*Create and develop healthy and sustainable places and communities*"**

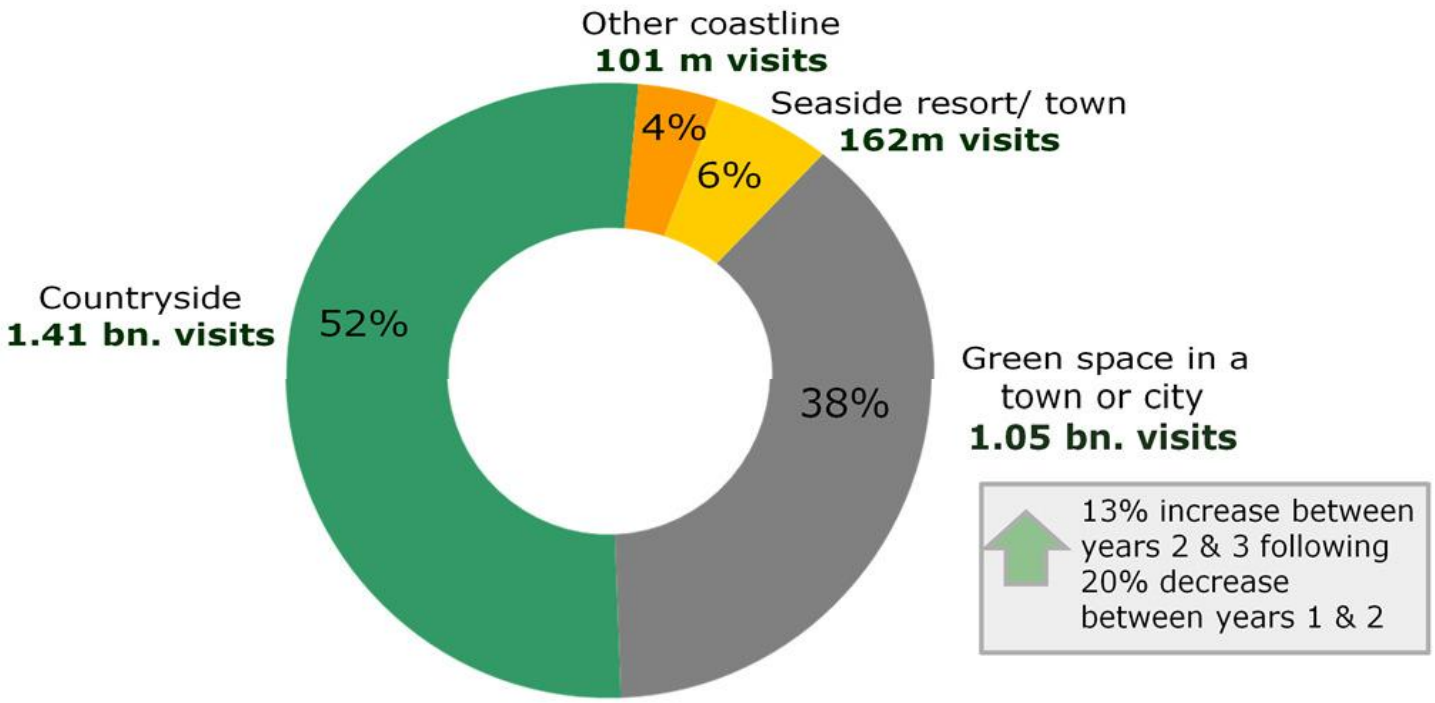
- People living closer to green space have lower death rates and less heart disease.
- Amongst lower income groups, 1,300 extra deaths occurred each year in areas where the provision of green space was poor.

*(University of Glasgow, 2008)*

# Where is green space of greatest value to public health?

# Monitor of Engagement with the Natural Environment (MENE)

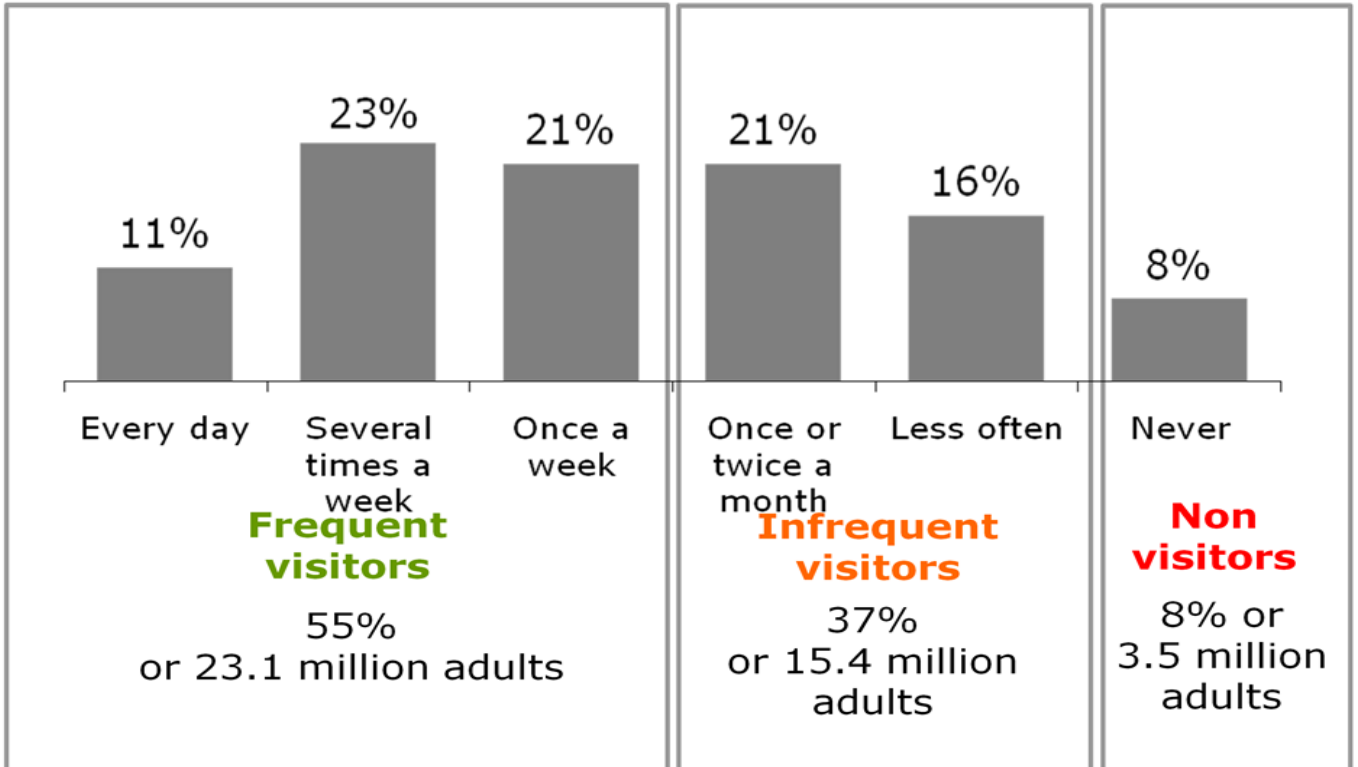
## Types of place visited



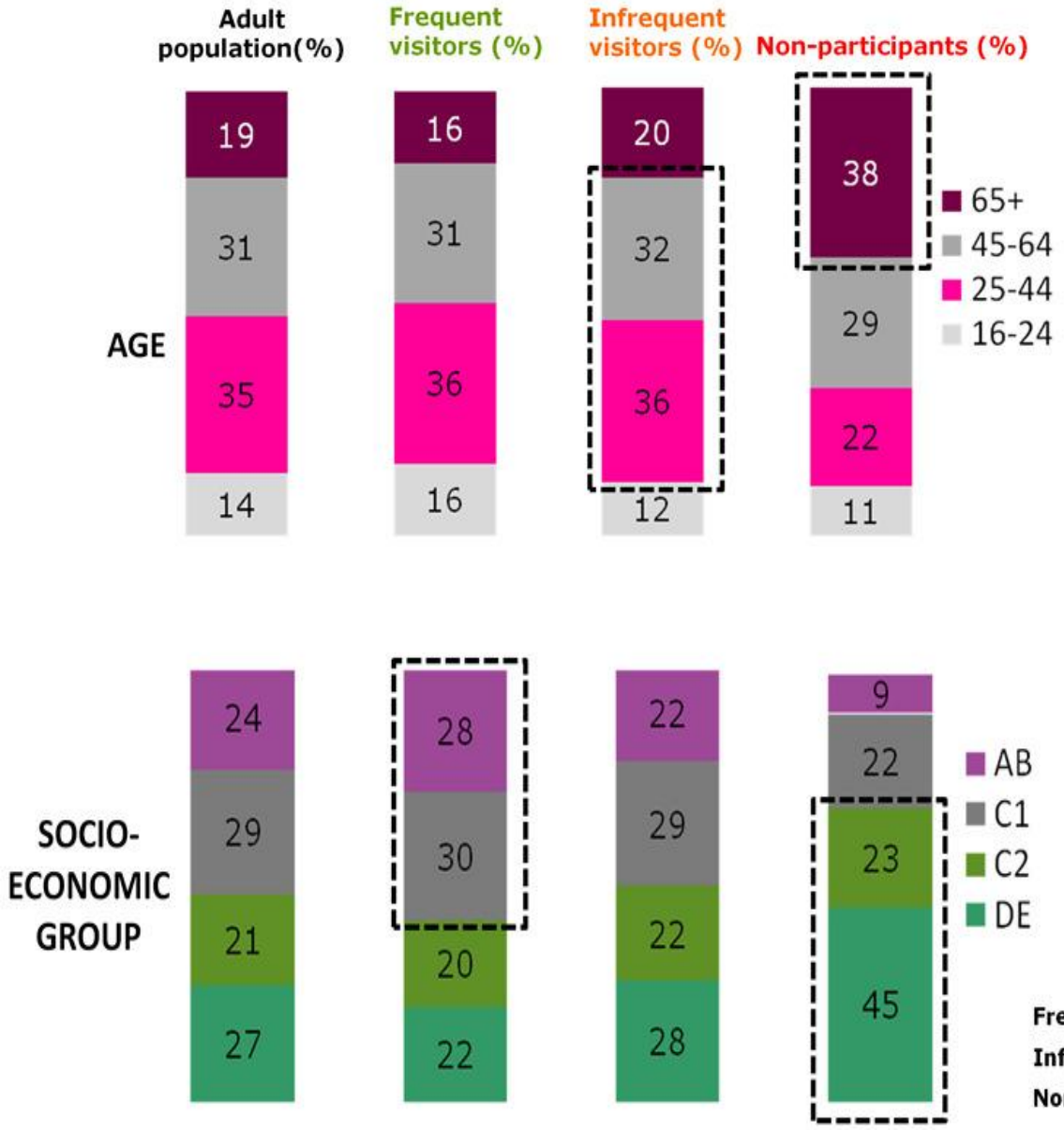
# Levels of Engagement

## General levels of engagement

From year 1 to year 3 the proportion of the population stating that they normally visit the outdoors at least once a year increased **from 90% to 92%.** In volume terms this equates to around half a million more people visiting the outdoors during the most recent period.



# Age and socio-economic profile by frequency of visits




**More likely to be frequent visitors**

- Aged 25-64 (67%)
- ABC1 groups (58%)
- White ethnicity (90%)

**More likely to be non-participants**

- Aged 65+(38%)
- Retired (40%)
- Any long term illness or disability (37%)
- DE group (45%)
- Living in areas in bottom 10% of Index of Multiple Deprivation (16%)
- Black or Minority Ethnic community (17%)

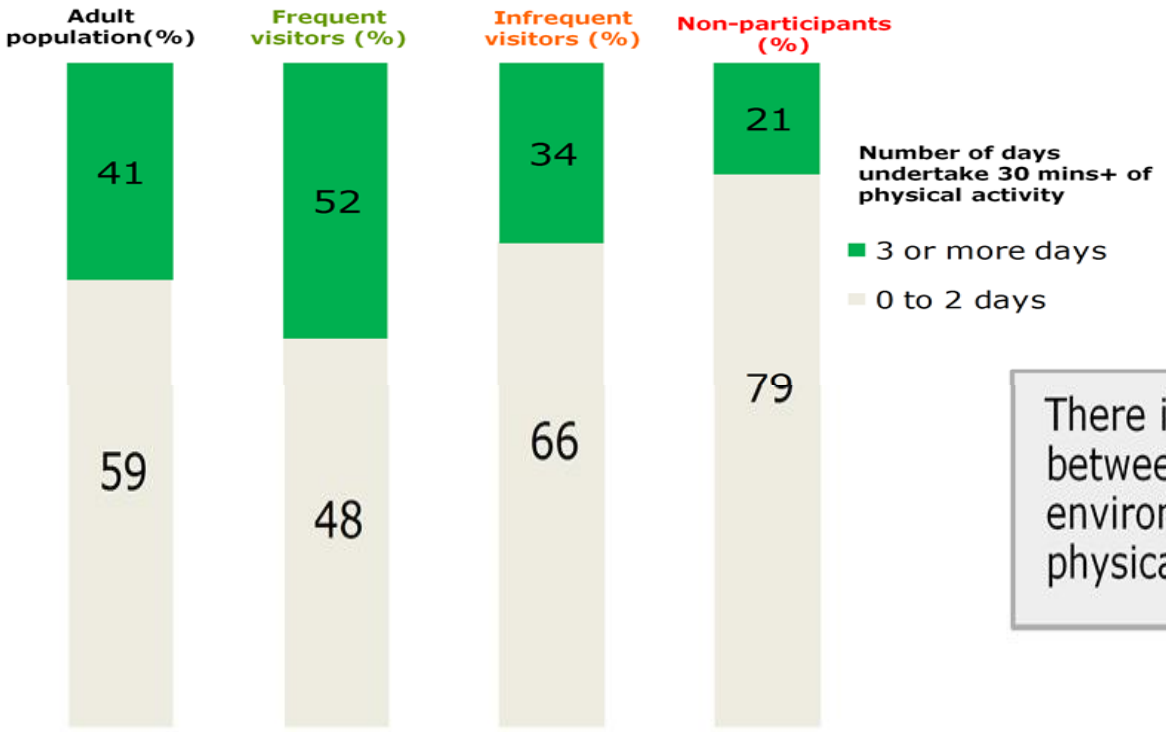
**Frequent visitor –** at least once a week (55% of population)

**Infrequent visitor** – twice a month or less often (37% of population)

**Non-participants** – not visited in the last 12 months (9% of population

# Physical activity and visits

## Levels of physical activity by frequency of visits




There is a clear relationship between visits to the natural environment and levels of physical activity.

**Frequent visitor –** at least once a week (55% of population)

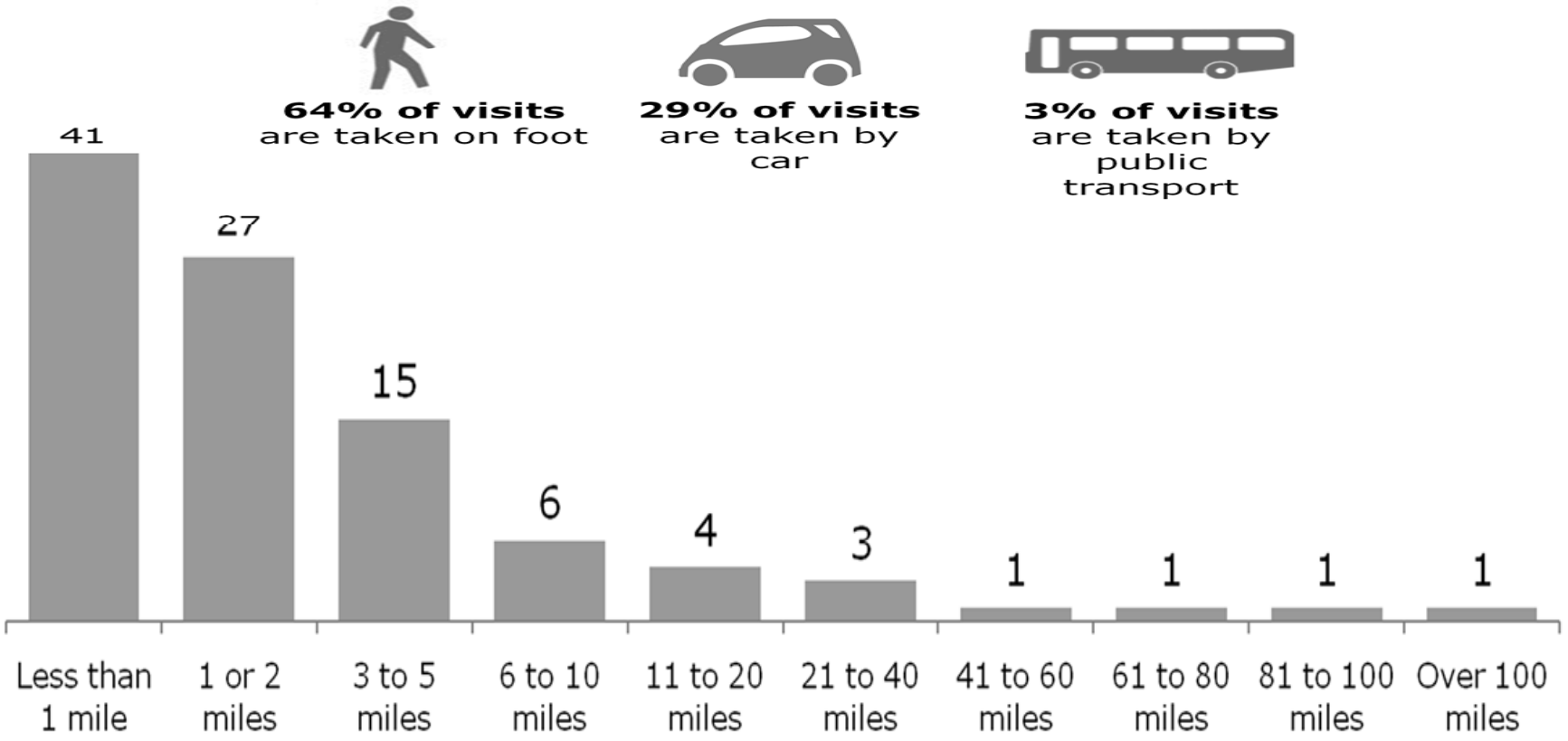
**Infrequent visitor** – twice a month or less often (37% of population)

**Non-participants** – not visited in the last 12 months (9% of population

# Distance of visit

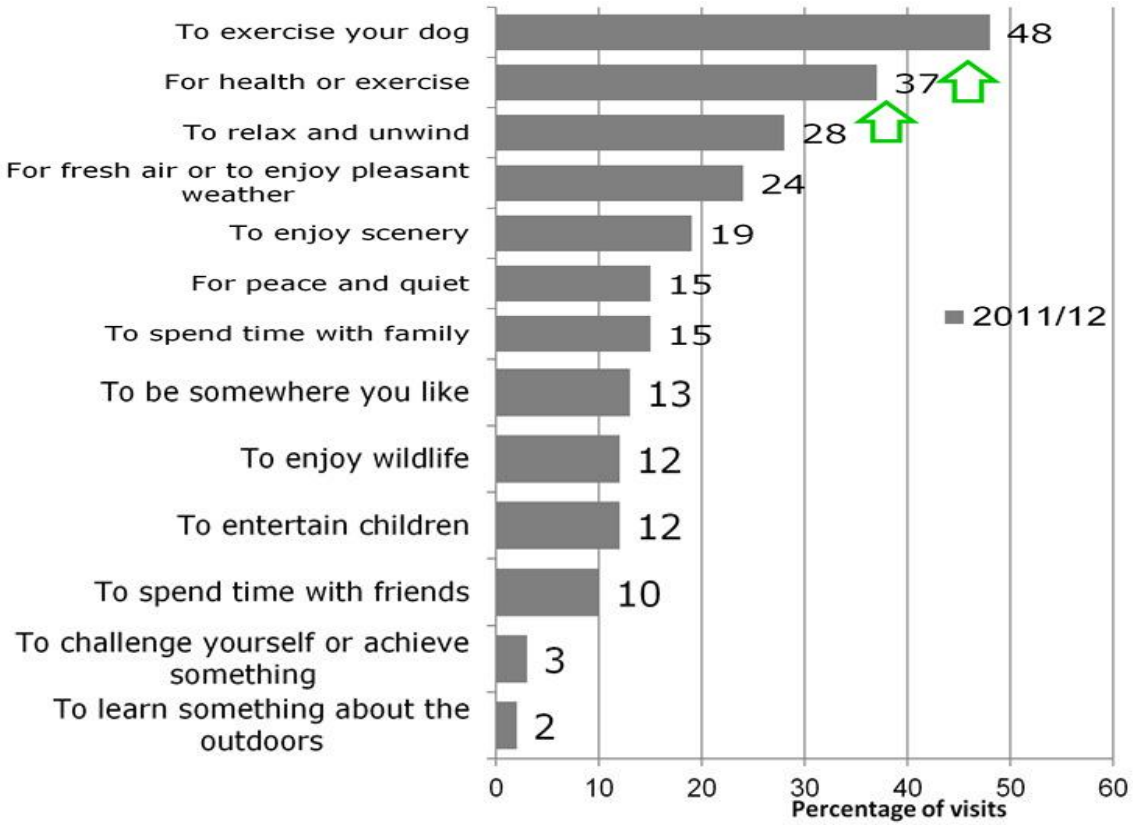
## Distances travelled

Most visits are close to home and taken on foot



# Reasons for visits

## Reasons for taking visits




**Variations**

**By age**

**Under 25s** – spending time with friends
**24 to 44** – spending time with family, entertaining children
**45 to 65** – health and exercise, enjoying scenery, enjoying wildlife.

**By gender**

**Men** – relaxing & unwinding
**Women** – exercising dogs, time with family, entertaining children.

**By socio-economic group**

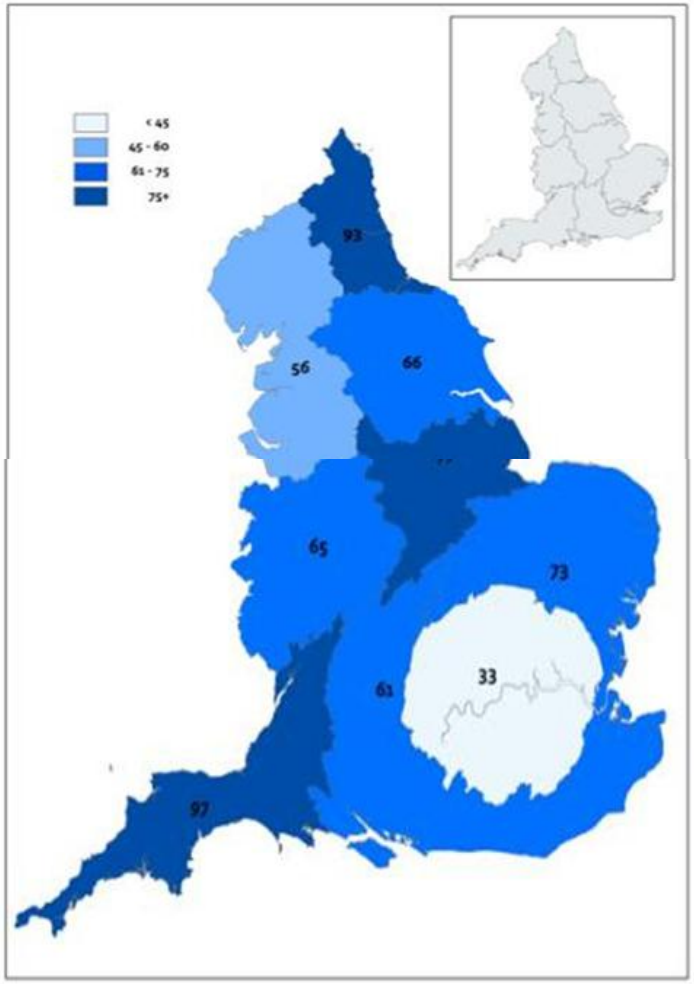
**ABC1s** – health and exercise, relaxing and unwinding, for fresh air.
**C2DEs** – exercising dogs.

**By place visited**

**Seaside resorts/towns**– relaxing and unwinding to visit somewhere they like.
**Other coast** – peace & quiet.
**Countryside –** exercise dog, health & exercise.
**Urban green space** – to entertain children, exercise dog.

# Frequency of visits and green space accessibility

## Detailed geographic analysis




The cartogram to the left distorts the geographical boundaries of each English region according to relative population size.

The average number of visits taken per adult was **65**.

This ranges from **97** visits by residents of the **South West** to **33** visits by **London residents**.

Regions with the largest, most urban populations tend to have the fewest visits per person.

**Frequency of visit taking is related to the amount of accessible, local green space.**

# Accessing and using the MENE data

## Accessing and using the results

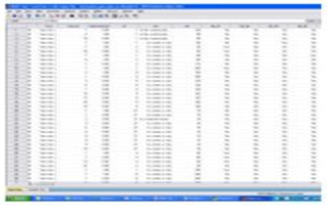
**2011/12 Annual Report**


**Technical Report**


**Monthly updates**

**On-line data viewer**

**SPSS & Excel datasets**



**Special analyses & reports**

- ELVS comparison
- Attitudes to the natural environment
- Population segmentation
- Spatial analysis

For further information relating to official statistics contact Stephen.herbert@naturalengland.org.uk

For all other questions contact Erica Wayman, MENE Project Manager Erica.wayman@naturalengland.org.uk

# Helpful Advice

- Natural England has been working to connect improved health and wellbeing with natural environments:
- **National Nature Reserves and health**
  National Nature Reserves are inspirational places where healthy conservation activity is encouraged
- **Health and Natural Environments – an evidence based information pack: (311kb)**
  To help the health sector understand and recognise the the health and wellbeing benefits derived from natural environments Natural England have produced an information pack which is also of use to environmental and greenspace professionals.
- **Monitoring of Engagement with the Natural Environment (MENE)**
  Greenspace indicator for the Public Health Outcomes Framework.
- **Green Exercise**
  We supported eight Green Exercise pilots.

# Helpful Evidence

**Environment and Health evidence from Natural England**

- MENE data has been used to support Indicator 1.16 ‘utilisation of green space for exercise/health reasons’ under the ‘Wider determinant of health’ domain of the Public Health Outcomes Framework (PHOF) and can be found at: http://www.naturalengland.org.uk/ourwork/research/mene.aspx#phof or at www.phoutcomes.info launched recently by the Department of Health. It will help Health and Wellbeing Boards monitor the health of people in their authority area.

- MENE data can help the production of Joint Strategic Needs Assessments and Health and Wellbeing Strategies. See: http://www.naturalengland.org.uk/ourwork/enjoying/health/default.aspx.

# Global and European viewpoints

- **Aichi Biodiversity Target 14**: ‘by 2020 ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

- **European Environment Agency**: ‘every 10% increase in green space [in urban areas] is associated with a reduction in diseases equivalent to an increase in five years of life expectancy’

# Useful Tools

## Health Economic Assessment Tool for walking and cycling

- WHO Europe's Health Economic Assessment Tool (HEAT) estimates the economic savings resulting from reductions in mortality as a consequence of regular cycling and/or walking (see www.heatwalkingcycling.org). HEAT enables users to estimate the value to health of new infrastructure, policies or programmes.

## NICE Pathways online tool

- The National Institute of Health and Clinical Excellence (NICE) Pathways brings together all related NICE guidance and associated products [http://pathways.nice.org.uk/pathways/walking-and-cycling

## Ecosystem services and human health online tool

- United States Environmental Protection Agency tool for links between human health and ecosystem services. The Eco-Health Relationship Browser explores the services that ecosystems provide and how they affect human health and well-being..

# Recent Research and Guidance

**Natural England's** Health and the Natural Environment web page info pack contains a wealth of research references. New research, produced since the pack was launched includes:

**NICE Guidance on Walking and cycling**

- Public Health Programme Guidance on 'Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation' [ http://guidance.nice.org.uk/PH41]

**NICE Physical activity briefiing**

for local authorities and partner organisations to encourage people to be physically active. Relevant to health and wellbeing boards. [ http://publications.nice.org.uk/physical-activity-phb3**]**

**"Exercise for brain health", study suggests:** Researchers found that people over 70 who took regular exercise showed less brain shrinkage [http://www.ed.ac.uk/news/all-news/exercise-231012

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# Physical activity evidence

**Exercise and Type 2 Diabetes -** The American College of Sports Medicine and the American Diabetes Association joint position statement, High-quality studies showing the importance of physical activity in diabetics were lacking until recently. PA and modest weight loss can lower risk by up to 58% in high-risk populations.

**Sedentary behaviour** - The British Heart Foundation National Centre for Physical Activity and Health (BHFNC) evidence briefing is an overview of the evidence relating to sedentary behaviour and public health. [http://www.bhfactive.org.uk/homepage-resources-and-publications-item/328/index.html] Also useful is their latest (December 2012) newsletter http://www.bhfactive.org.uk/homepage-resources-and-publications-item/356/index.html

**Ecosystems Knowledge Network**

- http://ekn.defra.gov.uk/ resource to share health/nature knowledge. Join the network here http://ekn.defra.gov.uk/about/participate

# Summary: the case for health, nature and green infrastructure in urban places

- Evidence (MENE) shows most people in England benefit from the natural environment within 1 to 2 miles of where they live. The Census shows that c 90% live in urbanised places. Maximum benefits of contact can be achieved in this zone.
- Many natural environments close to where people live have degraded and people have disconnected themselves.
- We suffer from the diseases of increased inactivity, obesity and also the deteriorating state of our mental health. This is a massive annual cost on individuals, the NHS and on society
- Should society regard locally accessible green infrastructure for improved health and wellbeing as vital, integral, value-costed benefits of natural ecosystems? Can these benefits be realised by creating an accessible green space focus in urban places and the fringes of all settlements?

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