


# Nature for Health

A group of approximately 15 people, mostly older adults, are walking away from the camera on a grassy area. They are dressed in winter clothing like jackets and coats. In the background, there is a line of bare trees and a wooden picnic table on the left. The scene is outdoors and appears to be a park or a natural setting.

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# Ecosystem services

- Pollination
- Water
- Soils
- Constanza *et al.*, (1997) Nature
  - US\$33 trillion
- MEA, 2005
- Recent emergence of *health* as an ecosystem service

# Overview

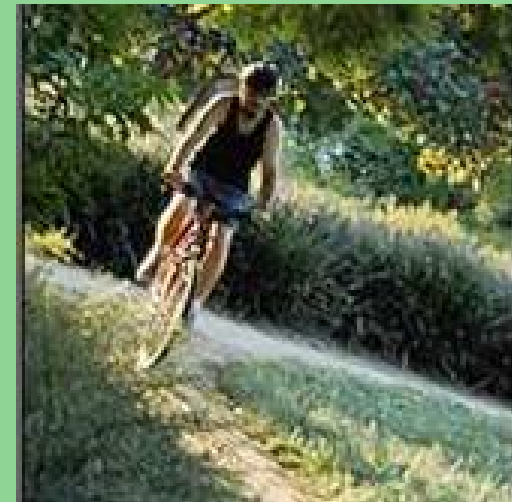
- What are the main health problems faced in the UK and other industrialised countries?
- Can experience of nature help to relieve any of these problems?
- What happens if nature is suddenly removed?
- Why does nature have this effect?
- What do we hope for the future?



# What are the main health problems in the UK and elsewhere?

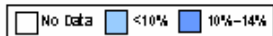
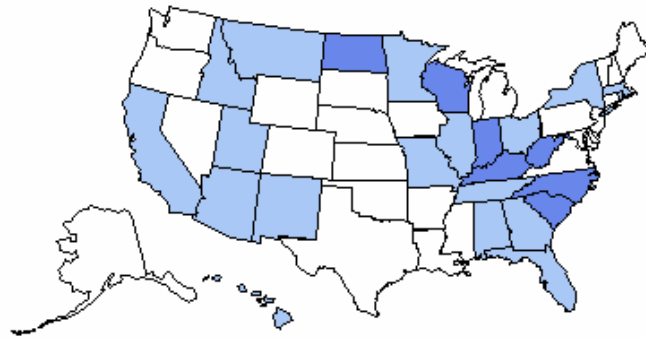
## Physical

- Large increase in chronic diseases in adults (and now in children) including coronary heart disease, high blood pressure, strokes, type II diabetes, cancers, obesity
- Obesity affects around 20% of adults and 16% of children in the UK
- More sedentary lifestyles – both work and leisure time
- 63% of men and 75% of women in UK do not exercise enough to benefit health
- Less exercise in schools
- 50 yrs ago burning 500kcal a day more = marathon per wk



### Obesity Trends\* Among U.S. Adults BRFSS, 1986

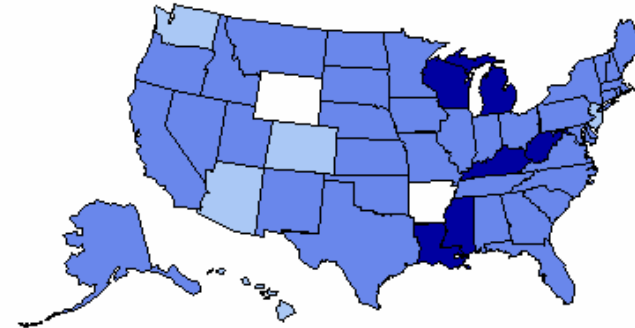
(\*BMI =30, or ~ 30 lbs overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.

### Obesity Trends\* Among U.S. Adults BRFSS, 1992

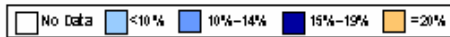
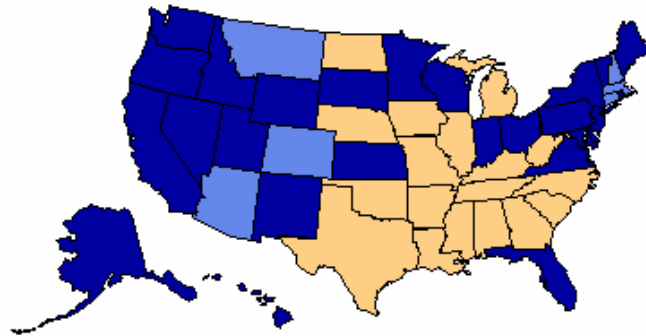
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Source: Behavioral Risk Factor Surveillance System, CDC.

### Obesity Trends\* Among U.S. Adults BRFSS, 1999

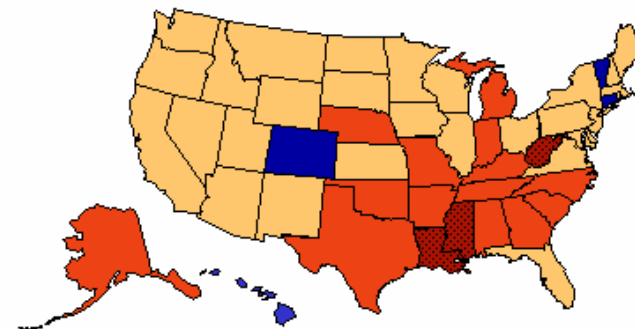
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Source: Behavioral Risk Factor Surveillance System, CDC.

### Obesity Trends\* Among U.S. Adults BRFSS, 2005

(\*BMI =30, or ~ 30 lbs overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.

# What are the main health problems in the UK and elsewhere?

## Mental

- Stress, depression, anxiety
- 1/3 of all GP visits relate to mental health
- 1 in 4 experience mental illness
- 10% children aged 5-15 yrs suffer from mental disorder
- WHO predicts depression to be 2<sup>nd</sup> largest cause of ill health by 2010

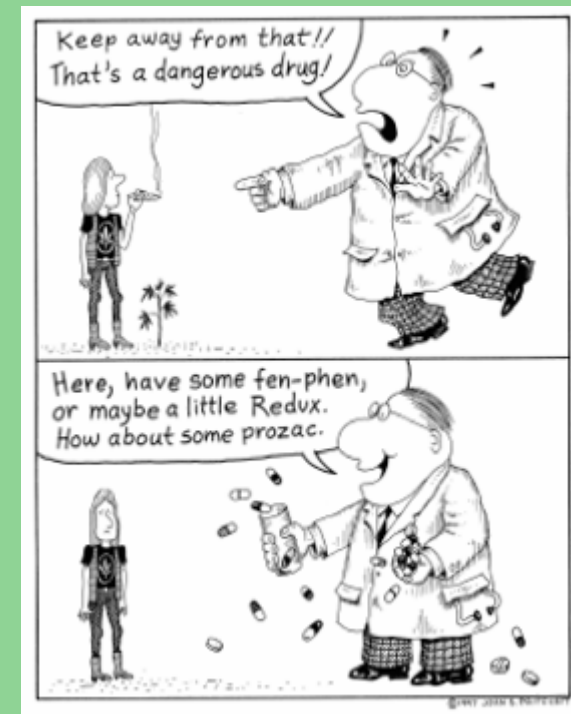


# What are the main health problems in the UK and elsewhere?



## Mental

- Cost of mental health
  - In England in 2002-03, mental illness cost in total £77.4bn - exceeds the cost of crime
    - £23.1bn on lost economic output due to being unable to work
    - £12.5bn on caring for patients with mental illness
  - In England in 2003, 27.7mn anti-depressant prescriptions were written at a cost of £395mn to the NHS
  - Increased from 9.9mn in 1992 – an increase of >200% in just over 10 yrs



Can nature help to alleviate any of these problems?

What view would you rather look at if you've had a stressful day at work?







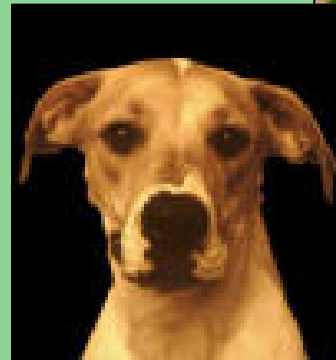
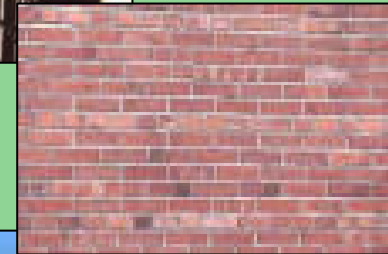


# Can nature help to alleviate any of these problems?

## Previous evidence

- Prison inmates
- Hospital patients
- Dental patients
- Plants in offices and homes
- Pet owners

But why?



# Can nature help to alleviate any of these problems?

## Viewing nature

- Through a window
- In a painting or photograph



## Incidental exposure to nearby nature

- Walking
- Cycling to work
- Sitting in garden or park



## Active participation

- Gardening, farming
- Trekking, camping
- Cross-country running and walking
- Horse-riding, fishing etc

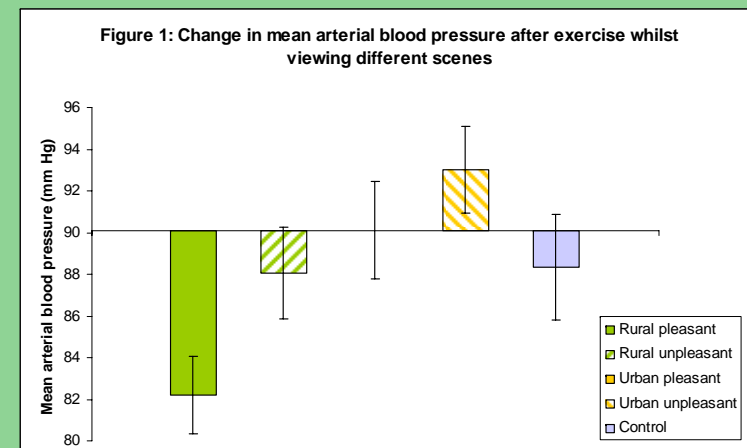


# Can nature help to alleviate any of these problems?

## Viewing nature

### Study 1: Treadmill study

- Comparison of 4 types of views while exercising on a treadmill for 20 minutes
- Blood pressure
  - Decline greatest in rural pleasant
  - Increased with urban views relative to control



# Can nature help to alleviate any of these problems?

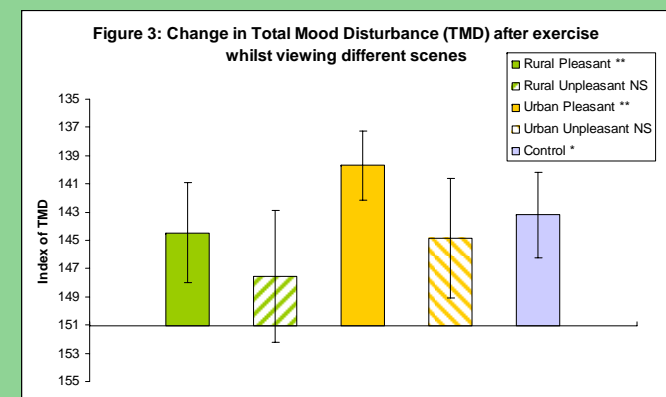
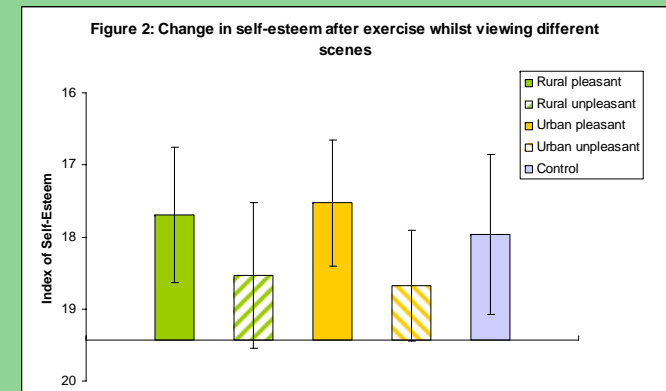
## Viewing nature

### – Self-esteem

- All improvements; rural pleasant & urban pleasant greatest
- Unpleasant scenes lacking nature made self-esteem worse relative to control

### – Total mood disturbance

- All improvements, biggest improvements seen in pleasant conditions



# Can nature help to alleviate any of these problems?

## Incidental exposure to nearby nature

### Study 2: Ecological Restoration

- Benefits of environmental improvements at 3 green sites in the UK



# Can nature help to alleviate any of these problems?

## Incidental exposure to nearby nature

- Improvements encouraged more people to visit the sites, more frequently and spend longer engaging with nature on each visit
- Significantly more people visited it for the “exercise”, “health”, “scenery” and “wildlife”

	No of visitors	No of visits per month	No of visits per person per month	Time spent per visit (mins)
Before	133	1534	11.5	35.5
After	150	2007	13.4	42.1

- Number of visits increased but more importantly the sites were attracting *new* visitors

*“It is a transformation. Now the potential to become a special place, a green oasis in a busy urban area”*

# Can nature help to alleviate any of these problems?

## Active participation



### Study 3: The benefits of different activities

- 263 participants
- Health data collected before and after activities – included mood and self-esteem
- Sample population were already choosing to engage in activities so were reasonably healthy to start with



# Can nature help to alleviate any of these problems?

## Active participation

- Significant increase in self-esteem
- Significant reduction in anger, tension, depression and confusion
- No significant differences in improvements between 10 case studies



<b>England</b>	Conservation volunteers group Walking Out project Outward bound activities Fishing
<b>Scotland</b>	Mountain biking & walking in a forest Canal boat trips
<b>Northern Ireland</b>	Walking group (WHI) Horse riding group
<b>Wales</b>	Mountain biking & walking in a forest Conservation work in a green gym

# Can nature help to alleviate any of these problems?

## Active participation



## Study 4: Outdoor versus indoor exercise

### – Self-esteem

- 90% participants increased after green walk
- 44% experienced reduction after indoor walk



### – Mood

- **Green walk** - 71% reduction in depression; 53% in anger; 71% in tension; 71% in fatigue; 53% increase in vigour; 88% overall improvement in mood
- **Indoor walk** – 22% increase in depression (33% no change); 33% reduction in anger (45% no change); 50% increase in tension; 44.5% left in overall worse mood, 11% no change and 44.5% improvement

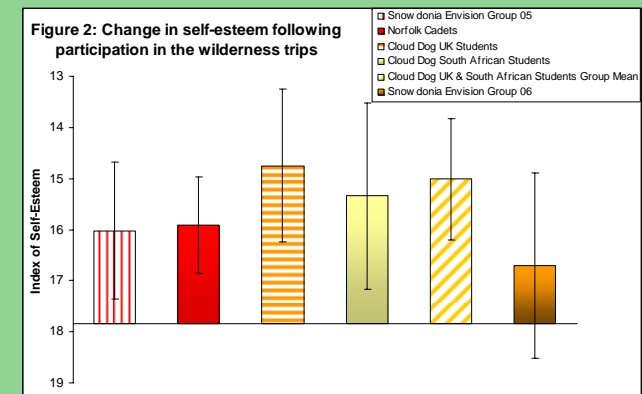
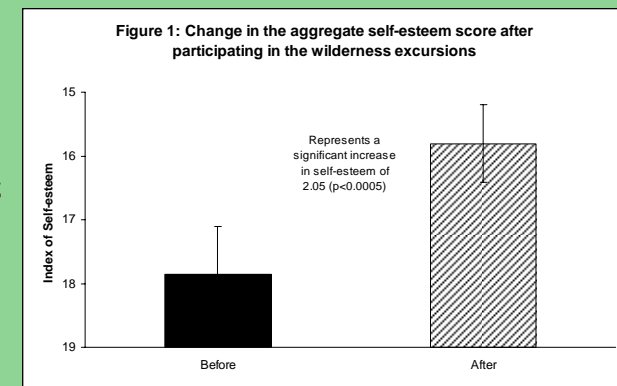


# Can nature help to alleviate any of these problems?

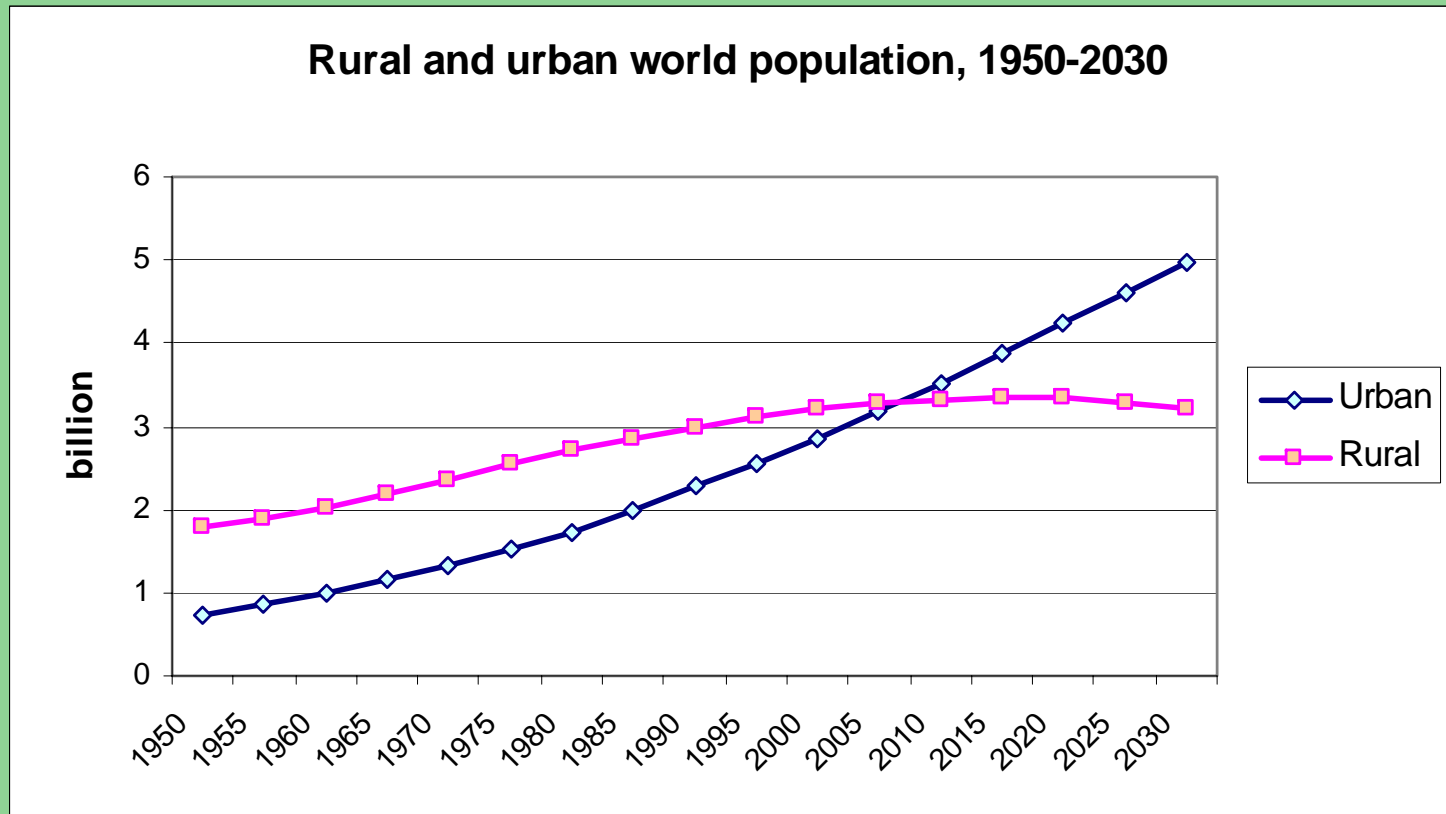
## Active participation

### Study 5: Wilderness trail

- Assessing the mental health benefits of participating in a wilderness trail
- Ongoing piece of research – over 50 students' participated so far
- Wilderness trips are to Snowdonia National Park, North Wales or Imfolozi Game Reserve, South Africa
- Significant increase in self-esteem, enjoyment in building new friendships, admiring the scenery and spending time outside in the fresh air



# But we're becoming more urbanised



# What happens if nature is suddenly removed?

- What we are is partly constructed by nature
- What are the effects of forced disconnection/relocation?

# What happens if nature is suddenly removed?

## Innu

- Relocation to Nutak
- Reduced physical activity
  - Obesity
  - High plasma cholesterol
  - Diabetes
- Identity and self-esteem
- Depression
- Alcoholism
- Drugs
- Physical and sexual abuse



Social pathologies and mental health problems when forced to depart from nature

Increased experience of nature



Decreased experience of nature



Improved health status



Decreased health status



# Reconnection efforts and revitalisation programs

## Developing

- Ecotourism schemes
- Hunter-support programs
- Outpost programs
- School curricula

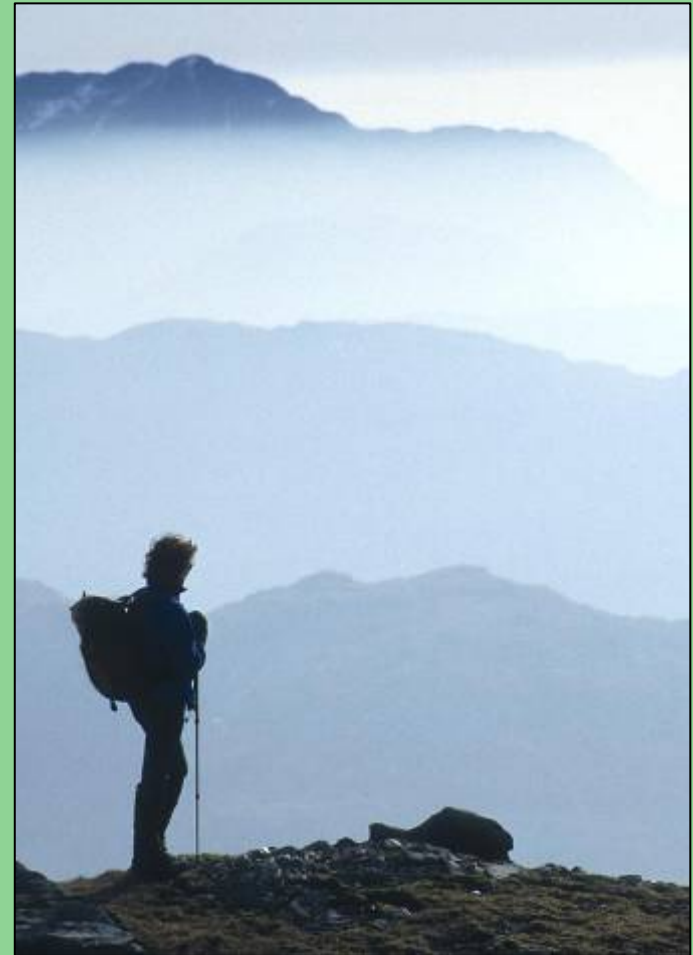
## Industrialised

- Wilderness/forest schools
- Bushcraft courses



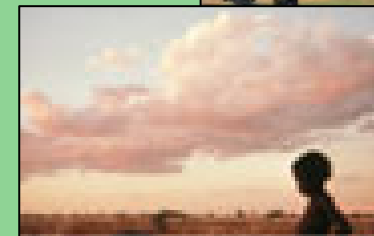
# Why does nature have this effect?

- We are genetically pre-disposed to caring about nature
- Nature is good for us
- Nature has shaped who we are
- Sense/love of place



# Why does nature have this effect?

- *The technical term "environment" does not reflect the deep spiritual quality of man's connection to land. It rather conceals it, thereby opening the door for reason and rationality to treat the environment as just another commodity (Wenzel 1997)*
- *We, the great mass of the people think only of the love we have to our land for... we do love the land where we were brought up. We will never let our hold to this land go it will be like throwing away... [our] mother that gave... [us] birth (Letter from Aitooweyah, to John Ross, principal chief of the Cherokees)*
- *Without our land, we are not a people (Chukchee, Russia)*



# Why does nature have this effect?

## Connection to the land

- Ceremonial traditions
- Land-based practices
- Territories
- Names, stories and legends
- Social systems
- Belief systems and worldviews
- Key to personal and tribal identity



# Why does nature have this effect?

- *All Indigenous Peoples know (and White Man knew centuries ago, but has lost that knowledge down through the ages) that health or wellbeing is directly related to the land we live on. When we lose our land, when we lose the connection to our land, our wellbeing is threatened in real terms (Goudie 1997)*
- *The land generously gives plants, animals, and a life which contributes to good health (Burden 1998)*

“We will conserve only what we love

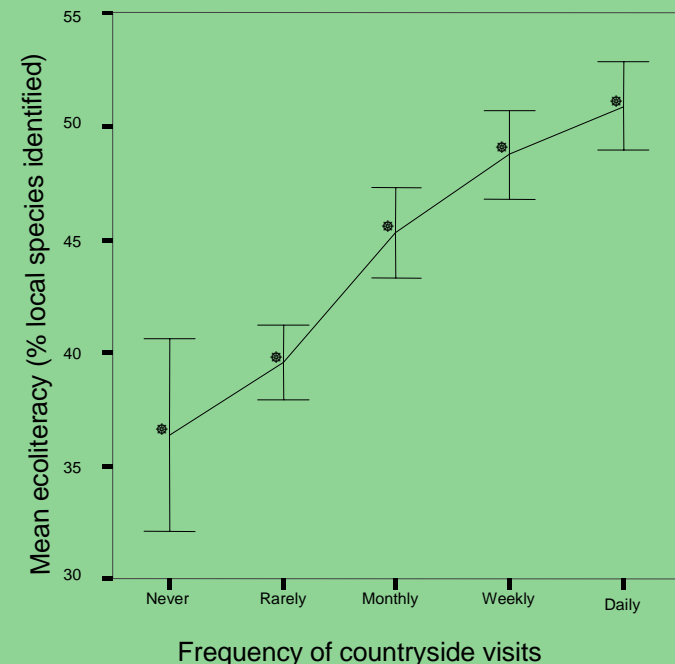
We will love only what we understand

We will understand only what we are taught”

Baba Dioum, Senegalese Conservationist



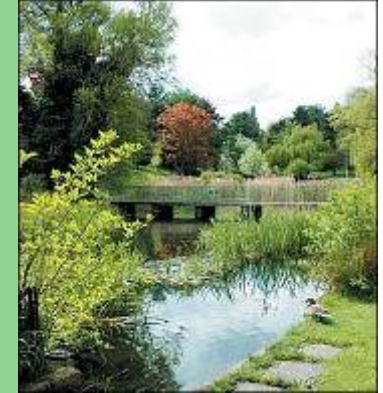
But we are spending less  
time in nature today !!



# Why are we spending less time in nature?

- Physical constraints

- Distance of green space from home
- Obstacles (roads to cross, lack of transport)
- Lack of information on rights of way
- Lack of knowledge about terrain
- Lack of facilities (toilets, parking, cafeteria)



- Social and cultural constraints

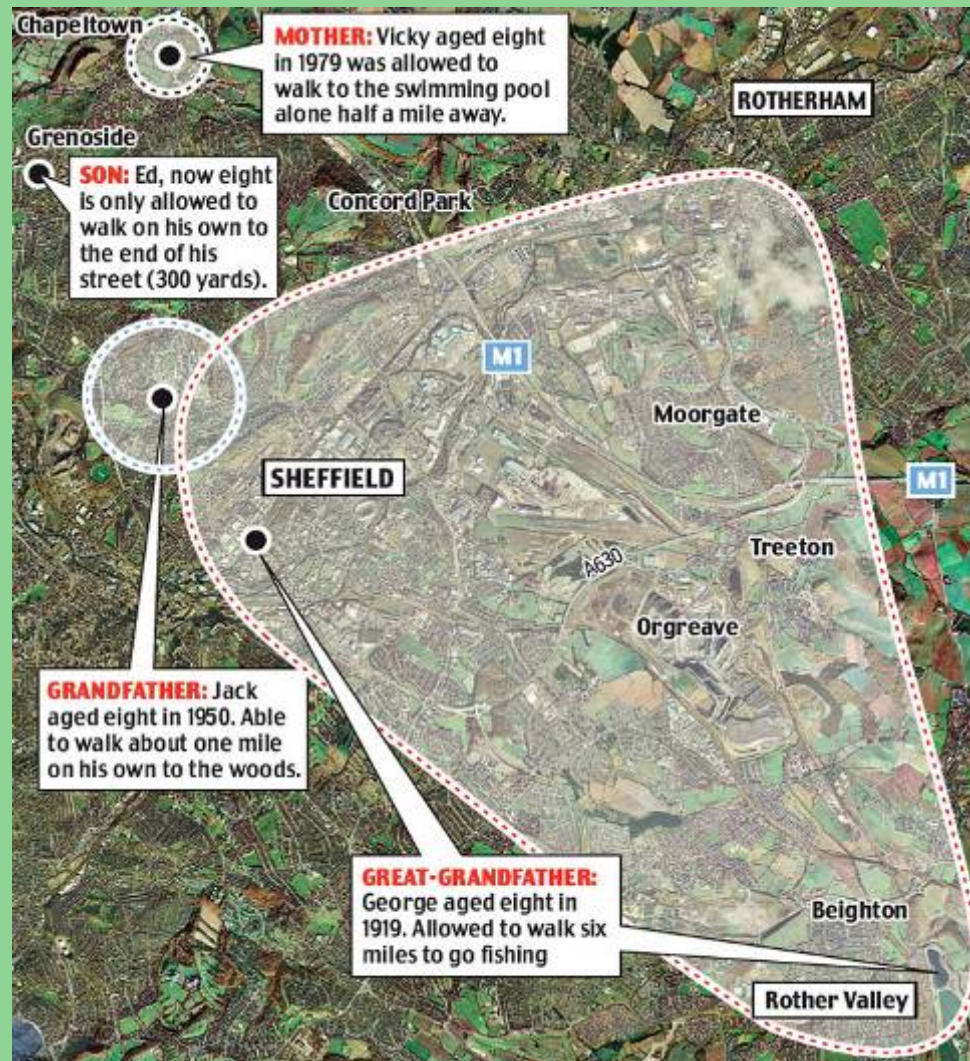
- Public spaces seen as risky (associated with crime)
- Countryside populated with dangerous animals & angry farmers
- Motivation (too tired from work)
- Purpose – people need a reason (dog walking, social groups)

# Why are children spending less time in nature?

- Parental fear of crime and increasing road traffic
- Loss of natural spaces to play
- Perceptions of what is best for children
- Attractions of indoor alternatives – e.g. computer games, TV, internet etc
- 31% of children would prefer to cycle to school but only 3% do

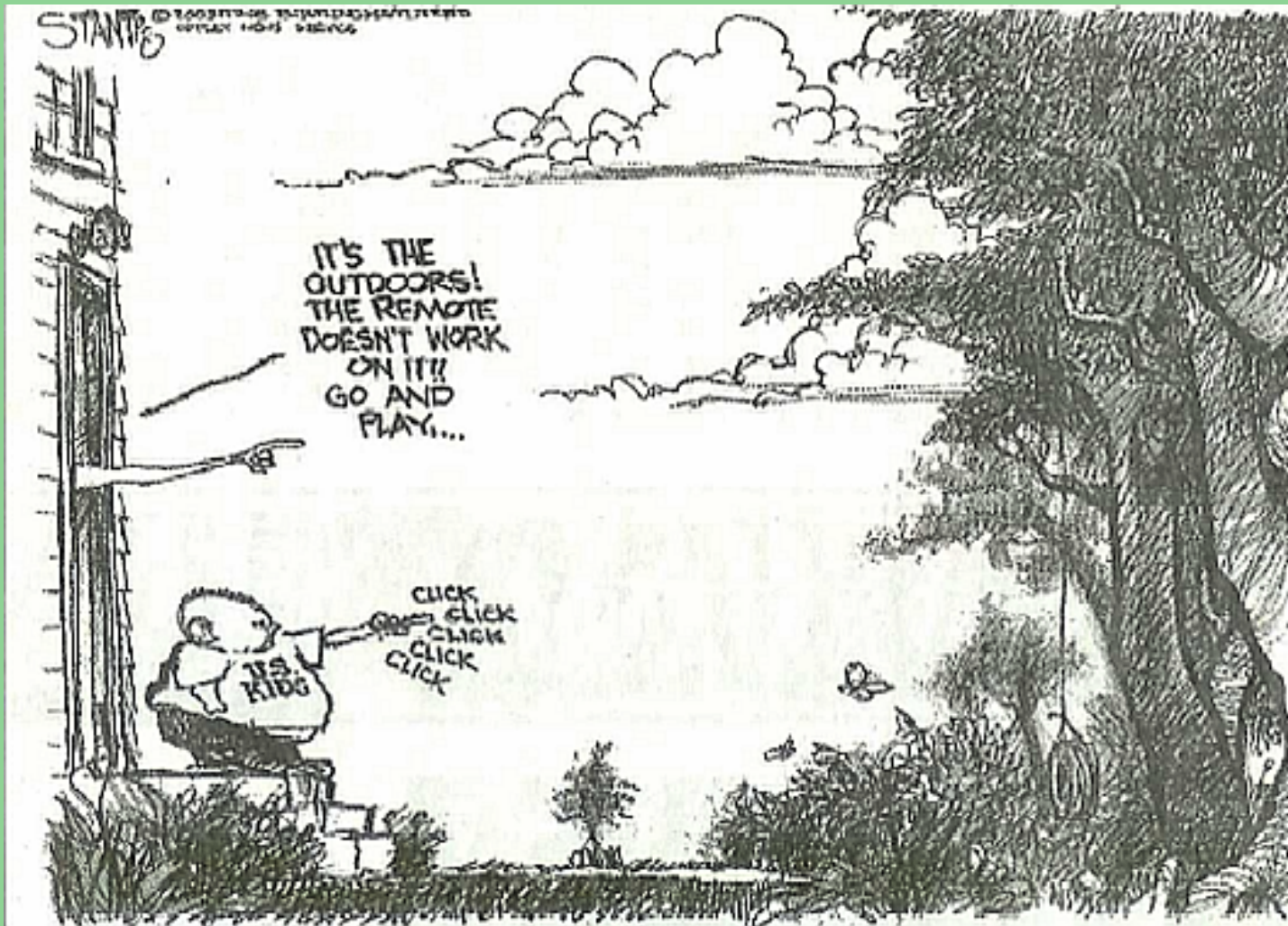


# Children's right to roam

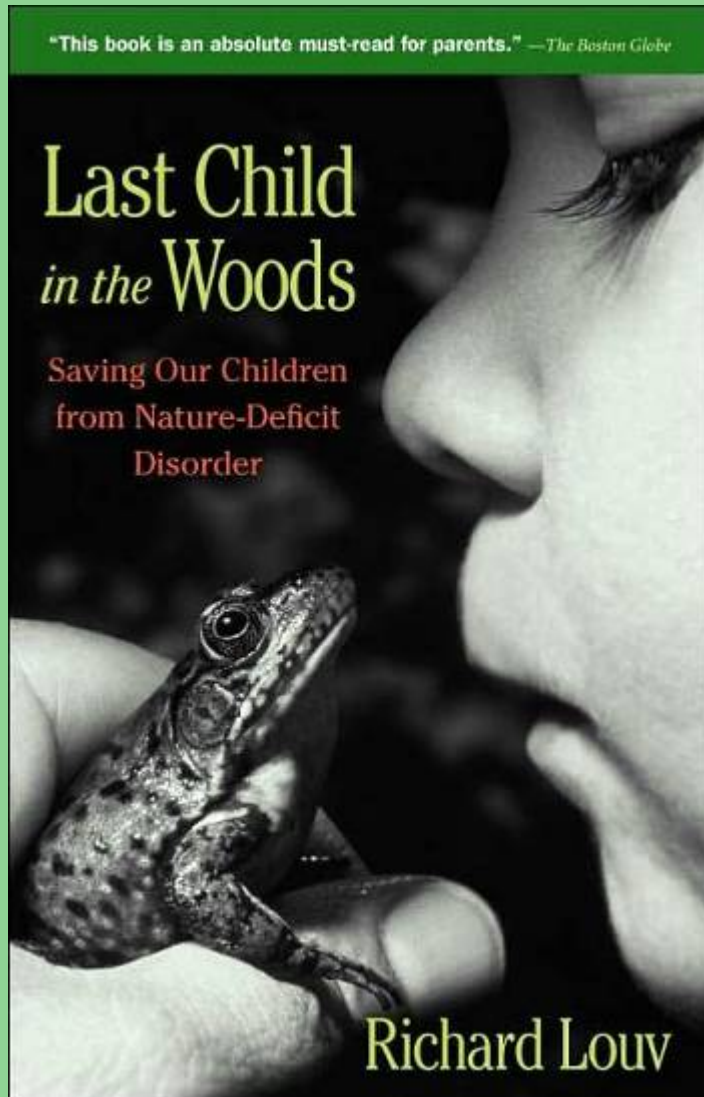


William Bird, 2007

# Children's time outdoors



# Nature Deficit Disorder



# What do we hope for the future?

- Green spaces made accessible
- More people spend more time outdoors
- GE as a therapy – acceptance by healthcare workers
- More revitalisation/reconnection programs
- Conservation of green spaces is prioritised for human as well as ecological health

