

Understanding the Contribution Parks and Green Spaces can make to Improving People's Lives.

Full Report

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Introduction

The arrival of a new coalition government is creating a very different landscape for public service delivery. Firstly we are facing a significant reduction in public expenditure and secondly we are seeing a fundamental shift to local decision making with a focus on devolution to councils, schools, GPs, business, communities and individuals. No longer will local government be accountable upwards to central government through national indicators and targets, inspection and intervention because we are entering a new era where local services will be more accountable to local people.

In this new landscape with a greater focus on efficiency, productivity and effectiveness expenditure on services will increasingly be judged in terms of the contribution they make to improving the outcomes that matter to local people; health and wellbeing, the local economy, community safety and a general sense of satisfaction with where people live.

Parks and green spaces will come under even greater pressure to show the contribution they make to these local priority outcomes and show in meeting these outcomes they do so as productively as possible.

Simple advocacy will not be enough. There will be a need for strong political and managerial leadership to make a case based on evidence and past performance, this leadership will need to involve itself in the key partnerships where the priorities are defined and be able to contribute to arguments about how local problems can be solved rather than why money should be spent on parks and green space. Managers and staff will need to better understand the new landscape they are working in, take responsibility for their own performance management and service improvement and show why investment in their services is what the community want and need. Managers will need to be open to finding and adopting quickly new ways of working, working across traditional service and administrative boundaries, working in different delivery arrangements with private sector partners, in trusts and social enterprises and with voluntary and third sector partners and responding to a world of commissioning.

This document outlines in the broadest sense the wide range of green spaces – from parks and gardens to city farms, country parks, woodlands and wildlife sites to play areas, allotments to urban plazas – and the range of benefits they bring, whether provided and managed by statutory agencies, local authorities or by community led and managed groups such as community gardens or “Friends Of” groups. Throughout this document, when making general points, we use the shorthand phrase “parks and green spaces” to represent the full spectrum of different and diverse green spaces that are available for communities to use and enjoy.

Many of the benefits provided by green spaces and highlighted in this document are equally applicable to streets where there are an abundance of street trees, permeable and well vegetated front and rear garden areas.

We suggest here that the benefits of green space provide a very cost effective means of promoting health and well-being, as well as a mechanism for increasing community and citizen involvement in volunteering. Imaginative use of green space also provides in many

cases an excellent Social Return on Investment whilst increasing individual and community engagement.

This document is intended to serve three primary purposes:

- To provide a platform of evidence for all types of green space services at the local level, raising awareness of the inherently unique contribution that they make to the social, environmental and economic fabric of our towns and cities
- Provide the organisations that manage parks and green spaces teams with a framework for applying this evidence to enable them to position and make the case for the contribution that the service can make to local outcomes in order for them to collaborate more effectively during this period of unprecedented financial difficulty.
- Generating greater understanding of the unique contribution that community management of green spaces can make in developing a sense of ownership and community engagement.

1. Social Value

Communities

If parks and green spaces are well managed, research has shown that communities use their local spaces more, have better relationships with their local councils and take some pride in the area where they live. They provide communities with a sense of place and belonging, opportunities for recreation, health and fitness, events that reinforce social cohesion and inclusive society and offer an escape from the stresses and strains of modern urban living which can feel compounded by the built environment.

Parks and green spaces are an integral part of daily life; from taking a walk in the local park and enjoying the fresh air and the surrounding wildlife of a Country Park, participating in sports at the local recreation ground, a family trip to the playground or a picnic with old friends or new neighbours at a City Farm, parks and greenspaces offer something for everyone.

During times of economic hardship the range of freely available activities and opportunities provided by parks and the diverse range of other informal and community managed green spaces becomes particularly important, especially for less well off individuals and families.

“From playgrounds to sports fields to parks benches to chessboards to swimming pools to ice skating rinks to flower gardens, parks offer opportunities for people of all ages to communicate, compete, interact, learn and grow”¹

While well managed parks and green spaces can encourage visitors, and enhance social inclusion and cohesion, poor quality spaces, scarred by the evidence of vandalism and neglect, dominated by single groups and anti-social behaviour, can be a blight on any community. It is a measure of peoples’ commitment to green spaces and belief in their importance that there are so many examples of communities working together to transform their local space.

“Perhaps more significantly, the acts of improving, renewing or even saving a park can build extraordinary levels of social capital in a neighbourhood”²

- Over 30 million people in England use parks, making around 2.5 billion visits in total each year. Nearly 70% of people use their parks frequently, and many go every day.³
- Over 50% of us visit a park at least once a week, to improve physical - and mental - health, to enhance our closest relationships, to chill out, to interact with our communities and to have a good time.⁴

¹ The Trust for Public Land. (2010). The Economic Benefits of Denver’s Park and Recreation System

² The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

³ Department for Transport, Local Government and the Regions. (2002). Improving Urban Parks, Play Areas and Green Spaces

⁴ Keep Britain Tidy. (2010). People, Places and their Green Spaces

- 87% of the population have used their local park or open space in the last year, and 79% have used it in the last six months. Parks and open spaces are the most frequently used service of all the public services tracked. This compares with 32% who have visited concert halls, and 26% who visited galleries.⁵
- 91% of the public believe that parks and public spaces improves peoples' quality of life.⁶
- The number one ranked issue for good parks and public spaces is that they 'give a sense of community'.⁷
- Only 3% of 5826 respondents disagreed with the statement: "Parks and open spaces are a focal point for local communities".⁸
- If people are satisfied with local parks, they tend to be satisfied with their council.⁹
- In a survey of 5866 respondents, 97% agreed with the statement: "Parks and open spaces can make this a nice place in which to live".¹⁰
- If parks and green spaces are well managed, research has shown that communities use their local spaces more, have better relationships with their local councils and take some pride in the area where they live.¹¹

⁵ CABE Space. (2010). Urban Green Nation: Building the Evidence Base

⁶ CABE Space. (2005). Parks and Squares: Who Cares.

⁷ CABE Space. (2004). Manifesto for Better Public Spaces

⁸ GreenSpace. (2010).GreenSTAT visitor survey system

⁹ CABE Space. (2010). Urban Green Nation: Building the Evidence Base

¹⁰ GreenSpace. (2010).GreenSTAT visitor survey system

¹¹ CABE Space. (2010). Urban Green Nation: Building the Evidence Base

Volunteering and Community-Led Management

The rise of community groups, “friends of groups” and parks trusts who aim to take over control and maintain parks and green spaces has been heavily discussed recently however this is not a new concept. The Box Moor Trust has been managing green space in Bovingdon and Hemel Hempstead since 1851. The National Trust formed in 1895 has been managing land since 1899. The Wildlife Trusts (formerly the Society for the Promotion of Nature Reserves) first acquired responsibility for land in 1919. The Woodland Trust has been managing land now for nearly 40 years and the city farm and community gardening movement has been in existence for more than 40 years and its federation celebrated its 30th anniversary in 2010. The Warley Woods Community Trust was established in 1997 and took over full responsibility for the land in 2004, The Penllergare Trust has been managing Penllergare Country Park since 2000, The Bankside Open Spaces Trust in London has also held full responsibility for a number of sites for the past ten years.

Community managed parks and green space are particularly important as they are generated directly from a need identified within the community. As they are created by local communities, for local communities, they help empower local people to take more control of their environment and give them an opportunity to become more active in their communities. Often community farms, gardens, developed allotments and newly established growing areas, are created in areas of deprivation, enabling those without easy access to formalised green space or parks, somewhere pleasant and productive to visit or volunteer. There is also much community development inherent in community managed projects.

- There are approximately 4,000 community groups with an average membership of 134 involved with urban green space across the UK, total membership may be approaching 500,000 across the UK”.¹²
- It is estimated there are around 5,000 city farms, community gardens, allotments, school farms, orchards and related groups in the UK, engaging with as many as five million people a year.¹³
- The annual economic value of the work of community groups in parks and green spaces across the UK ranges somewhere between £17 million and £35 million.¹⁴
- The turnover of the city farm and community garden movement is estimated at £50 million a year.¹⁵
- Over 7000 community based groups improved biodiversity and the local environment at over 50,000 places, and enriched the lives of over 660,000 people.¹⁶
- In one year alone (2007-2008) BTCV volunteers put in 540,178 workdays. If these are valued at a typical unskilled labour rate of £50 a day, the total contribution amounts to over £27 million.¹⁷
- 287,000 volunteers gave 540,178 workdays. Their work on 15,420 sites involved 4,301 communities, improving local environments, both rural and urban, and enhancing biodiversity.¹⁸

¹² GreenSpace. (2003). Community Networking Project: Final Report

¹³ Federation of City Farms and Community Gardens. (no date). Membership Survey

¹⁴ GreenSpace. (2003). Community Networking Project: Final Report

¹⁵ Federation of City Farms and Community Gardens. (no date)

¹⁶ BTCV. (2008). Annual Review 2007-2008

¹⁷ BTCV. (2008). Annual Review 2007-2008

¹⁸ BTCV. (2008). Inspiring People, Improving Places: The positive impact and behavioural change achieved through environmental volunteering with BTCV

- Volunteering is an overwhelmingly positive experience for young people. Nine out of ten young volunteers said they learnt something new, and 98% said they wanted to do it again.¹⁹
- Environmental volunteering is an ideal way to encourage active integration. Socially disadvantaged groups BTCV works with include young people at risk, people with health problems, travellers and homeless people.²⁰
- 44% of all people involved in BTCV's activities came from under-represented communities.²¹
- Last year, nearly 8,000 people received training through our Employment Programme, and almost 2,000 of these went into full-time work.²² This resulted in:
 - Increased earnings = £20m
 - Reduced benefits = £5m
- Social Return on Investment research that shows £1 invested in environmental volunteering can lead to a return of up to £4.²³

¹⁹ BTCV. (2008). Inspiring People, Improving Places: The positive impact and behavioural change achieved through environmental volunteering with BTCV

²⁰ BTCV. (2008). Inspiring People, Improving Places: The positive impact and behavioural change achieved through environmental volunteering with BTCV

²¹ BTCV. (2008). Annual Review 2007-2008

²² BTCV. (2008). Inspiring People, Improving Places: The positive impact and behavioural change achieved through environmental volunteering with BTCV

²³ BTCV. (no date). Inspiring People, Improving Places: The positive impact and behavioural change achieved through environmental volunteering with BTCV

Public Health and Well Being

Over the last decade there has been a shift in the health agenda towards promoting healthy lifestyle behaviour and choices. There has also been recognition of the role the environment can play in enhancing health. Less active lifestyles have led to an increase in preventable diseases which are placing increasing pressures on the National Health Service and cost the NHS £8.2 Billion annually.²⁴

Parks and green spaces contribute to all aspects of health and well-being including increasing levels of physical activity which could alleviate pressures on the NHS. Simply being outside in a green space can promote mental well-being, relieve stress, overcome isolation, improve social cohesion and alleviate physical problems so that fewer working days are lost to ill health.²⁵

Parks provide spaces where people can get some fresh air, go for a walk, play football, exercise or just enjoy the surroundings. Unfortunately those living in more deprived communities, who tend to have poorer health and suffer from the kind of illnesses that can be alleviated by regular exposure to green spaces, are also less likely to have good access to high quality parks and green spaces.

Many community managed green spaces exist primarily to create therapeutic opportunities for disadvantaged or excluded groups such as adults with learning difficulties, the elderly and ethnic minority communities. An increasing number of groups are also being set up for community food growing, creating opportunities for exercise through gardening activities, as well as increasing knowledge of better diet and nutrition through the growing of fresh vegetables, fruits and herbs.

- Living near parks, woodland or other open spaces helps to reduce health inequalities, regardless of social class.²⁶
- In urban areas people are more likely to rate their health as good if there is a safe and pleasant green space in their neighbourhood: an increase from 48% to 58%.²⁷
- 60% of interviewees thought pleasant local green spaces would improve their overall physical health, 48% thought it could improve their mental health, and 46% thought it would make them feel better about their relationships with family and friends.²⁸
- 91% of people believe that public parks and open spaces improve quality of life.²⁹
- In a survey of 5831 respondents, 79% agreed with the statement: "Parks and open spaces help me stay fit and healthy". Only 4.5% of respondents disagreed with the statement.³⁰

²⁴ Department of Health. (2004). At least five a week: Evidence on the impact of physical activity and its relationship to health

²⁵ CABI. (2009). Future Health: Sustainable places for health and well-being

²⁶ Mitchell, R & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: an observational population study. *The Lancet*. 372(9650), pp.1655-1660

²⁷ The Scottish Government. (2009). Scotland's People, Annual Report: results from 2007-2008, Scottish Household Survey

²⁸ CABI Space. (2010). Community Green: Using local spaces to tackle inequality and improve health

²⁹ CABI. (2009). Future Health: Sustainable places for health and well-being

³⁰ GreenSpace. (2010). GreenSTAT visitor survey system

Obesity

The number of obese adults in England has tripled over the last twenty years and is still rising. 62% of men and 53% of women are either overweight or obese, and 17% of men and 20% of women suffer from clinical obesity. The rising rate of obesity amongst children is just as alarming; the number of obese six-year-olds doubled in the last ten years, and the number of obese fifteen-year-olds more than trebled. A major cause of obesity, and other health problems, is inactivity.

Obesity reduces life expectancy by an average of three years, or eight to ten years in the case of severe obesity (BMI over 40). Around 8% of annual deaths in Europe (at least one in 13) have been attributed to overweight and obesity. The cost to the UK economy of overweight and obesity was estimated at £15.8 billion per year in 2007, including £4.2 billion in costs to the NHS.³¹

The cost of obesity to every Primary Care Trust in England is published by the Department of Health. The figures set out the cost of diseases related to being overweight or obese in 2007 and how much it will cost at local level in 2015 if no action is taken. It is estimated that the cost to the NHS in England of obesity in 2007 was £4.2 billion and would rise to £6.3 billion in 2015.³²

Parks and green space facilities provide easily accessible recreational opportunities, which are usually free. A brisk walk every day, in your local park, can reduce the risk of heart attacks by 50%, strokes by 50%, diabetes by 50%, fracture of the femur by 30%, colon cancer by 30%, breast cancer by 30% and Alzheimer's by 25%.³³

Green exercise has important implications for public and environmental health. Evidence suggests that participants in exercise programmes based in outdoor green environments are more likely to continue with their programme than if it is based within a gym or leisure centre.³⁴ Many parks authorities are now supporting GP referral schemes which involve doctors treating patients through regular exercise programmes based within local parks. As a result of green exercise, studies in the East of England have reported that there was a significant overall improvement in self-esteem, a significant reduction in the subscale mood factors of anger, confusion, depression and tension. Although participants felt significantly more fatigued (due to the intensity of the exercise) after the activities, they still felt more vigorous and alive.³⁵

- Obesity already costs more in public health terms, and will overtake smoking as Britain's biggest killer in 10-15 years if current trends persist.³⁶
- Obesity and related diseases cost the NHS an estimated £4.2 billion a year — a figure that is forecast to more than double by 2050.³⁷

³¹ Government Office for Science. (2007). Foresight: Tackling Obesities: Future Choices – Project Report. 2nd Edition

³² Department of Health. (2008). Healthy Weight, Healthy Lives: A toolkit for developing local strategies

³³ Bird, W. (2002). Green Space and our Health; paper to London Greenspace conference

³⁴ British Military Fitness. (2001). Paper to UPF conference; Parks What's the use?

³⁵ University of Essex, Commissioned by the National Trust. (2008). Green Spaces – Measuring the Benefits: Drawing on case studies from the East of England

³⁶ Petty, J., Griffin, M., Sellens, M. & Pretty, C. (2003). Green Exercise: complementary roles of nature, exercise and diet in physical and emotional health policy

- Recent work has shown that where people have good perceived and/or actual access to green space they are 24% more likely to be physically active.³⁸
- Residents in high 'greenery' environments were 3.3 times as likely to take frequent physical exercise as those in the lowest greenery category.³⁹
- A daily walk in the park reduces the risk of a heart attack by 50%.⁴⁰
- Responses for both intensity and duration showed large benefits from short engagements in green exercise.⁴¹
- Improving the quality of spaces will encourage more active use and exercise.⁴²
- People living on a low income in deprived urban areas are more likely to experience worse health and be less physically active.⁴³
- Unlike antidepressant drugs that cost £750 million a year, green exercise is free and does not carry the potential for negative side effects.⁴⁴

Stress

As technology, traffic, artificial light and noise increasingly dominate our towns and cities, a park or green space can be an oasis of tranquillity and calm that has a genuine effect on stress.

Clinical evidence suggests that exposure to an outdoor green environment reduces stress faster than anything else. Simply viewing nature can produce significant recovery or restoration from stress within three to five minutes.⁴⁵

For people experiencing anxiety or stress, studies indicate that certain types of nature scenes quickly foster more positive feelings and promote beneficial changes in physiological systems for instance, blood pressure.⁴⁶

Patients recovering from surgery, recover faster, need fewer strong drugs for pain, and have fewer minor complications if they have a room with a window that overlooks green environments such as trees, grass and water.⁴⁷

Within the field of care for the elderly, studies show that patients exposed to outdoor green environments became happier, slept better, were less restless, more talkative, and needed less medication.⁴⁸

³⁷ CABE. (2009). Future health: sustainable places for health and well-being

³⁸ Natural England. (2009). Technical Information Note TIN055: An estimate of the economic and health value and cost effectiveness of the expanded WHI scheme 2009

³⁹ Ellaway, A., MacIntyre, S. and Bonnefoy, X. (2005). Graffiti, greenery, and obesity in adults: secondary analysis of European cross sectional survey. *British Medical Journal*, 331 (7514). pp. 611-612

⁴⁰ Hakim, A. A. et al. (1999). 'Effects of walking on coronary heart disease in elderly men: the Honolulu Heart Program' *Circulation*, Vol. 100, pp9-30

⁴¹ Pretty J., Hine R. and Peacock J. (2006). Green Exercise: The benefits of activities in green places. *The Biologist* 53(3), pp.143-148

⁴² CABE Space. (2010). Community Green: using local spaces to tackle inequality and improve health

⁴³ CABE Space. (2010). Community Green: using local spaces to tackle inequality and improve health

⁴⁴ Mind. (2007). Get outdoors, get active: Green exercise should be a mainstream treatment option says Marcus Roberts *Openmind Issue 145, May/June 2007*

⁴⁵ Ulrich, R. S. (1999). Effects of gardens on health outcomes: Theory and research. In C. Cooper-Marcus & M. Barnes (Eds.), *Healing Gardens: Therapeutic Benefits and Design Recommendations*. New York: John Wiley, pp.27-86.

⁴⁶ Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology*, 11, pp.201-230

⁴⁷ Ulrich, R. S. (1984). View from a window may influence recovery from surgery. *Science*, 224, pp.420-421.

- One in four people each year will visit a doctor because of a mental health problem. Being more active and having more contact with the outdoors reduces stress and can prevent and reduce depression and anxiety. The NHS spent £6.5 billion on mental illness in 2002/03.⁴⁹
- The more often a person visits urban open green spaces, the less often he or she will report stress-related illnesses.⁵⁰
- Moderate activity can be as successful as medication at treating depression, if not more so.⁵¹
- The natural environment has restorative effects on health.⁵²

Horticultural therapy

Contact with plants and participation in horticultural activities can bring a wide range of benefits to a diverse demographic. It can enhance self-esteem, self-confidence, social and communication skills whilst also improving stamina, coordination and balance. For some patients, usually those suffering from mild intellectual disability, involvement in horticultural projects can produce positive benefits. Many of these projects take place in public parks and open spaces and many park managers work in partnership with horticultural therapy units. A large number of community-managed farms and gardens run horticulture therapy projects for a wide variety of clients – from those recovering from addiction to those from excluded groups such as minority ethnic communities or those with disabilities.

- A study showed that every green environment improved both self-esteem and mood. The mentally-ill had one of the greatest self-esteem improvements.⁵³
- Children with ADHD can concentrate on schoolwork and similar tasks better than usual after taking part in activities in green settings, such as walking through or playing in a park.⁵⁴
- Natural views – of elements such as trees and lakes – promote a drop in blood pressure and are shown to reduce feelings of stress.⁵⁵
- 94% of those who took part in Mind green exercise activities commented that they had benefitted their mental health.⁵⁶

⁴⁸ Grahn P: Att Uppleva Parken (1989)

⁴⁹ Bird, W. for the RSPB. (2004). Natural Fit: Can green space and biodiversity increase levels of physical activity?

⁵⁰ Grahn, P. and Stigsdotter U.A. (2003). Landscape planning and stress. *Urban Forestry and Urban Greening* 2 (1): 1-18

⁵¹ CABE. (2009). Future health: sustainable places for health and well-being

⁵² Kaplan S. (1995). The Restorative Benefits of Nature: towards an Integrative Framework. *Journal of Environmental psychology* 15: pp.169-182

⁵³ Pretty J., Hine R. and Peacock J. (2006). Green Exercise: The benefits of activities in green places. *The Biologist* 53(3), pp.143-148

⁵⁴ The Trust for Public Land. (2006). The Health Benefits of Parks

⁵⁵ Dunnett, N., Swanwick, C. & Woolley, H. (2002). Improving Urban Parks, Play Areas and Green Spaces. London, Office of the Deputy Prime Minister

⁵⁶ Mind. (2007). Ecotherapy: The green agenda for mental health

Families and Children

Examinations of family leisure have consistently demonstrated a positive relationship between involvement in family recreation and aspects of family strength.^{57,58,59} It has been suggested that in modern society, leisure is the single most important force developing cohesive, healthy relationships between husbands and wives and between parents and their children.⁶⁰

As a freely available, highly accessible local facility providing recreational opportunities for all ages, quality parks and green space can make a vital contribution to this relationship building process. All of the benefits they offer to the individual in terms of feeling part of the community and better understanding the place in which you live can be extended to the immediate and wider family group with good effect. Parks and green spaces also provide opportunities through interaction at the playground or at events for neighbouring families to meet and extend their local social networks. They provide an escape from the limitations of spending too much time indoors, especially where the family's accommodation is less than generously proportioned, and an opportunity for the children to get out from under their parents feet.

Research by Keep Britain Tidy found that:

*“Visits to green spaces with friends and extended family groups were highly valued for enabling social bonding in largely natural and frequently picturesque surroundings, while children remained one of the primary motivations for visits to green spaces for many who saw green spaces as areas in which all the family could enjoy a day out”.*⁶¹

Visits with a partner were also described positively with many respondents conceding this was frequently a romantic activity for them:

“I think you can talk more when you're out walking with someone...in the middle of nowhere, just the two of you. It's a wonderful feeling actually.”

Parks and green space provide schools with a living, breathing, fully interactive and continually changing outdoor classroom; a wonderful resource with which to support curriculum activities. Access is easy and free, and because they exist locally visits can be frequent allowing longer-term projects to be undertaken. The Local Park or green space has become an increasingly popular destination for study of the natural environment as well as social and urban development.⁶² Where an inner city school can't provide its own playing fields, there are often arrangements in place for the school to use those provided by the local park.

Parks and green space support childhood and provide a freedom so often denied in congested traffic-strewn streets. They can help counter the negative effects of urban growth

⁵⁷ Hawks, S. R. (1991). Recreation in the family. In S.J. Bahr (Ed.), Family research: A sixty year review, 1930-1990. New York: Lexington Books

⁵⁸ Holman, T. B., & Epperson, A. (1989). Family and leisure: A review of the literature with research recommendations. Journal of Leisure Research, 16, 277-294

⁵⁹ Orthner, D. K., & Mancini, J. A. (1991). Benefits of leisure for family bonding. In B. L. Driver, P.J. Brown, & G. L. Peterson (Eds.). Benefits of leisure (pp. 215-301). State College, PA: Venture

⁶⁰ Couchman. (1988). As cited in Canadian Parks/Recreation Association, (1997). The benefits catalogue. Gloucester, ON. Canada: Canadian Parks/Recreation Association

⁶¹ Keep Britain Tidy. (2010). People Places and their Green Spaces

⁶² Urban Parks Forum. (2002). Your Parks: the benefits of parks and green space

on the public environment and encourage children to become better stewards of the environment in the future.⁶³

Play is an essential part of the physical, emotional and psychological development of any child, but in urban environments the opportunities for play are restricted. Today, the urban park is the primary outdoor environment that still remains for children to meet and play in a sociable and informal setting, where there is still scope for imagination, improvisation and innovation. Play is not grown out of quickly. There are positive benefits to indulging in play whatever your age; teenagers need to play and socially interact just as much as younger children.⁶⁴

Many parks and green spaces, in partnership with local authority Children's Services, act as the venues for formalised after school clubs and holiday play schemes. Without such schemes being available within the immediate locality, many working parents from the surrounding communities would be forced to make difficult choices between their on-going employment and career development and the care of their children. This is parks and green spaces again making a useful contribution to local economies.

Again the availability of these spaces to children and their access to the benefits they bring depends on the ability of the parks team to deliver a safe, quality environment. In recent decades, the trend has been for parents to be more concerned about the dangers faced by unaccompanied children as they explore the environment outside of the home. Even a comparatively minor erosion of a parent's perceptions about the quality and safety of the local park, can be enough to discourage a parent from allowing their child to visit alone.

However, two thirds of 9-11 year olds in the UK are dissatisfied with the quality of outdoor play activities where they live. For 15-16 year olds this rose to 81% higher than any other European country".⁶⁵

In many cases the driving forces behind many community-led green spaces are parents with children who want to create a space that can be used by their children as well as other members of the community. As an example of this, many city farms have become recognised as social hubs for communities, somewhere that parents and guardians can take young children, where families can enjoy their leisure time as a group and where children can learn about the natural world in an interactive, safe and rewarding environment. This is especially important where these spaces are located in deprived areas where access to green space is often more limited, or in areas where facilities for young families are expensive. A visit to the local city farm offers a cheap, engaging and healthy day out.

- 19% of the population, utilised green spaces simply to share experiences with, and to entertain, their children or grandchildren with some expressing nostalgia in returning to sites like those they had so readily enjoyed in their youth.⁶⁶
- 86% of parents (with young children aged 11 and under) say that on a nice day their children would prefer to go to the park than watch TV.⁶⁷
- Children who were bullied, punished, relocated or suffering from family strife all benefited from closeness to nature, both in their levels of stress and in global self-worth.⁶⁸

⁶³ Urban Parks Forum. (2002). Your Parks: the benefits of parks and green space

⁶⁴ Urban Parks Forum. (2002). Your Parks: the benefits of parks and green space

⁶⁵ Livingstone, S. and Bovill, M. (1999). Young People, New Media: Report of the Research Project: Children, Young People and the Changing Media Environment. London : London School of Economics and Political Science

⁶⁶ Keep Britain Tidy. (2010). People Places and their Green Spaces: A segmentation of people who use Green Spaces

⁶⁷ Heritage Lottery Fund. (22 May 2003). Park Life research

- Aggression and violence were both reduced significantly in those mothers that lived within a view of grass and trees compared to barren areas devoid of trees. Psychological aggression over the lifetime of the child, was reduced significantly in areas with more nature.⁶⁹
- It is important to provide green spaces that are appropriate for people of different ages. Young people aged between 16 and 24 report lower quality across all indicators analysed for the study: 15% thought their local parks and open spaces were the aspect of their areas that needed most improvement, compared with 8 per cent of 55-74 year olds.⁷⁰
- From a sample of 2077 under 16's, 56% visit parks and green spaces at least once a week and 37% visit most or very day during the summer months. Even for the 16 to 19 age group 44% report at least weekly summer visits and 28% daily or most days.⁷¹
- From a sample of 10,852 30-39 year olds, 35% report that they visit parks for outings with their children/family, and 39% report that they go to the park to visit the playground.⁷²
- Children suffering from Attention Deficit Disorder (ADD) benefit from activity in public spaces, especially green spaces. When parents of children with ADD were asked to nominate the activities that they had found made their children more manageable, 85% of green-space activities (such as fishing and soccer) were said to improve the children's behaviour, while only 43% of non-green activities (such as video games and watching television) were regarded as beneficial. Indeed, 57% of non-green activities were said to result in worse behaviour.⁷³
- Children's self discipline can be improved by 20% by simply having views of trees and vegetation outside their homes. This mainly affects girls and is related to better concentration even when adjusted for all other factors.⁷⁴
- Greenness is inversely associated with the BMI z-scores of children and youth at 2 years.⁷⁵
- UK children are spending less and less time outdoors, in fact the likelihood of children visiting any green space at all has halved in a generation, and much of this now happens only under adult supervision.⁷⁶ Likewise the area around their homes which they know and use has fallen by 90% in 20 years.⁷⁷

⁶⁸ Bird, W. for RSPB. (2007). Natural Thinking: Investigating the links between the Natural Environment, Biodiversity and Mental Health

⁶⁹ Kuo F, E and Sullivan W, C. (2001) Aggression and Violence in the inner city: Effects of Environment via Mental Fatigue. *Environment and Behaviour* 33 (4) pp.543-571

⁷⁰ CABE Space. (2010). Urban Green Nation

⁷¹ GreenSpace. (2010). GreenSTAT visitor survey system

⁷² GreenSpace. (2010). GreenSTAT visitor survey system

⁷³ Taylor A,F., Kuo F,E. and Sullivan W,C. (2002). Views of nature and self-discipline: evidence from inner city children. *Journal of Environmental Psychology* 22(1) pp.49-63

⁷⁴ Taylor A,F., Kuo F,E. and Sullivan W,C. (2002). Views of nature and self-discipline: evidence from inner city children. *Journal of Environmental Psychology* 22(1) pp.49-63

⁷⁵ Bell J.F, Wilson J,S and Gilbert C. (2008). Neighbourhood Greenness and 2 year Changes in Body Mass index of Children and Youth. *American Journal of Preventative Medicine*, 35(6) pp.547-553

⁷⁶ Natural England. (2010). Childhood and Nature: A Survey on Changing Relationships with Nature Across Generations.

⁷⁷ Natural England. (2010). Wild Adventure Space: its role in teenagers lives

- These trends are closely linked to a range of challenges facing society today, including those to do with childhood obesity and mental health, anti-social behaviour, and lack of environmental awareness and action.⁷⁸
- A third of people surveyed recently said they had never done any 'great outdoors' activities like fishing or hill walking. Nearly 60%, said it was because they had just never been given the opportunity.⁷⁹ There is huge scope to help schools work in tandem with community groups like scouts, guides or after school clubs to promote opportunities for children in their leisure time too. The Green Flag Award segmentation report shows that adults are strongly influenced on whether and which green space they use by childhood experience.⁸⁰

Education

Schools, particularly in urban areas, have long used parks and green spaces to access the natural environment as a means of education. Increased anxieties about safety and security on the part of some parents have restricted the free movement of children around their neighbourhoods and only added to the lure of games consoles, so school visits to outdoor locations are more important than ever. Parks provide the opportunity for play, exploration and the development of an awareness and understanding of risk in a dynamic, interactive, accessible and free outdoor classroom.

Many parks teams have developed their own education programmes linked to the National Curriculum to facilitate and encourage school visits. Green spaces provide the opportunity to explore a number of themes of learning from regeneration, sustainability and environmental protection to community participation, social inclusion, health and wellbeing, supporting subjects such as biology, geography, citizenship, and PSHE.

Where green spaces have on-site management teams, Country Parks or some of the large restored historic parks for instance, or at many community led spaces such as city farms or Woodland or Wildlife Trust sites, there is often an education or schools liaison specialist offering valuable educational facilities in an outdoor setting. These facilities bring a variety of benefits, including:

- Hands on learning in a unique non-classroom environment
- Methods of learning that can engage and motivate excluded young people, providing routes back into education. For example, science and maths questions can be a lot more appealing if framed by the practical nature of animal husbandry or stock taking for a garden
- A safe, risk-managed environment where children and young adults can learn about safety issues and practice risk management with items like gardening, farming and conservation equipment, livestock etc.
- Children, including victims of bullying, can gain confidence and self-esteem through responsibility for farming, gardening and nature conservation tasks, such as nurturing and being responsible for plant and animal welfare.

⁷⁸ Natural England. (2010). Wild Adventure Space: its role in teenagers lives

⁷⁹ Go Outdoors. (2010). Unpublished

⁸⁰ Keep Britain Tidy. (2010). People Places and their Green Spaces

These are also places where children and adults can learn to reconnect with nature or with where food comes from. This can help combat a lack of understanding that feeds into a spiral of local and global environmental degradation. They also place more emphasis on social learning as a vital way to encourage people to care for the environment.

Increasingly children are able to make use of green spaces on school premises, which are used for food growing and other gardening activities. There is an increasing acknowledgement of the benefits of creating an outdoor classroom in this way to help reconnect children with the natural world and where their food comes from.

A growing number of schools and education establishments are discovering how farms/growing can be used effectively as a teaching tool across the curriculum at each Key Stage. This is confirmed by the increasing number of school farms in the UK which now stands at 82 with a number of other schools actively engaged in starting a new one.

The wider community can also benefit through involvement in developing school gardens, leading to a wider understanding of issues such as healthy eating, sustainability and caring for the environment.

Beyond school level education the parks, gardens and green space pathway within the horticulture apprenticeship framework recognises the importance of highly trained and qualified parks professionals. It also lays the foundation for future career opportunities. Working in parks and green spaces isn't just about getting your hands dirty; many senior posts in green space management are held by former apprentices.

Away from formal learning, parks provide informal learning to the wider community through interpretation material, brochures, signs, guided walks and casual observations. As a venue for social events and a place for cross community interaction they are invaluable in developing social cohesion and fostering ties within a diverse population. For tens of thousands of individuals, who give their time as volunteers, helping with the management and maintenance of green spaces increases their personal knowledge and experience, often significantly improving their chances of gaining employment.

- Parks and green space provide schools with a living, breathing, fully interactive and continually changing outdoor classroom, a wonderful resource with which to support curriculum activities.⁸¹
- The assets children and youth need for healthy development fall into four major domains: physical, intellectual, emotional, and social. And parks can offer programs that are not only fun, but also help kids acquire assets in one or more of these domains.⁸²
- Many children have become isolated from exploring nature and understanding their environment. Increased time spent playing video games and watching television all contribute to this isolation. The result is that many children are not educated about their environment and do not grasp the responsibility they have to become stewards of their environment as they grow to adulthood.⁸³

⁸¹ Urban Parks Forum. (2002). Your Parks: The benefits of parks and greenspace

⁸² The Urban Institute. (2004). Beyond Recreation: A Broader View of Urban Parks

⁸³ National Recreation and Park Association. (2008). No Child Left Inside

- A recent House of Commons Select Committee Report on Learning Outside the Classroom concludes that out of classroom learning - especially day or residential visits to natural environments - has failed to flourish since the launch of the Manifesto for Learning Outside the Classroom in 2006.⁸⁴ It calls for sector champions who are committed to promoting the educational and social benefits of learning outside the classroom; and for Government to provide back-up in terms of leadership, resourcing and inspection.
- A critical factor in improving the quality of teaching is to develop an online directory of organisations and people who can support teachers beyond the school boundaries and critically, provide rapid access to a range of information and materials provided in a way that is coherent with the National Curriculum.⁸⁵
- Less than half of all children 5-16 years went on a school trip to the countryside in 2008. Yet 97% of teachers believe it's important for pupils to learn about the countryside in the National Curriculum and 98% believe the countryside could play a greater role in cross-curricular learning;⁸⁶ 90% of head teachers state that learning outside the classroom is part of the ethos of their schools.⁸⁷
- 85% of children want to take part in countryside activities with their school, and 89% of parents want their children to play outside more and to understand more about the natural environment.⁸⁸
- The Science, Technology, Engineering and Maths Network (STEMNET), established in 2002 by the Department for Business Innovation and Skills and the Department for Education to broker sustainable partnerships between UK schools and local partners to enrich and extend the National Curriculum, reports that schools are asking for more natural environment opportunities.

Older People

As we get older, many people increasingly rely on local public services to help continue to live active and fulfilled lives. Parks are age proof and bring opportunities for physical activity, volunteering and social interaction all of which provide a sense of achievement and purpose.

Physical activity does not end with later life. Scientific evidence increasingly indicates that in addition to health benefits, for example the prevention of cardiovascular disease, type 2 diabetes and obesity, physical activity also can extend years of independent living, reduce disability and overall has the significant potential to impact upon the quality of life of all older people. It enables the continued enjoyment of activities of daily living and helps to maintain an individual's social networks.

Millions of older people are lonely and find themselves isolated within their own homes. Safe, high quality green spaces provide opportunities for social interaction with the local community. They can evoke memories, provide a place for people to reunite or meet new friends, allowing older people to create or sustain bonds and reinstate vitality. Parks are free, which makes them an excellent 'outing' for groups of friends or trips with grandchildren. Allotments and community gardens provide opportunities for physical exercise, a sense of purpose and social interaction with all their inherent benefits and for a healthy and very cost effective diet.

⁸⁴ Department for Children, Schools and Families. (2006). Learning outside the classroom

⁸⁵ DCSF. (2009). Educational, social and technological futures: a report from the Beyond Current Horizons Programme

⁸⁶ The Countryside Alliance Foundation. (2010). Outdoor Education: The Countryside as a Classroom

⁸⁷ DCSF's own research

⁸⁸ The Countryside Alliance Foundation. (2010). Outdoor Education: the countryside as a classroom

Contact with the outdoors and nature increases positive stimulation and improves concentration. For those with special needs, particularly dementia, it can improve their sense of coherence and reduce aggression and agitation. Gardening is the commonest and most enjoyed pursuit of older people and can be continued long into old age. One of the major constituents of high quality life in older people is the feeling of being needed; plants contribute to this though their requirement for regular care. Many volunteering gardening and horticultural projects are based in public parks and gardens, allotments community gardens and city farms, with many managing bodies working in partnership with horticultural therapy and health care units.

- Elderly people who have close access to a place where they can relax and enjoy nature, show significantly greater satisfaction with where they live.⁸⁹
- There are more pensioners than there are children under 16.⁹⁰
- Elderly people who remain active are less likely to fall and cause injury and are more likely to continue being independent at home.⁹¹
 - They are less likely therefore to create a demand for health and other publicly funded services.
- Research has shown that moderate exercise can help prevent brain connectivity declining with age. A group of people aged 59 to 80 year olds who had walked for 40 minutes three times a week showed significant improvement of default mode network connectivity and also performed better on certain cognitive tests such as decision making and multi-tasking.⁹²
- 50% of older people are regular visitors to parks and green spaces.⁹³
- Reasons for older peoples' (75 or older) visits to green spaces include; for a walk (44%), to enjoy flowers and trees (37%), to enjoy the beauty of the surroundings (32%), to see birds and wildlife (25%), to keep fit (16%), to improve their health (15%) and to attend social events (10%).⁹⁴

⁸⁹ Dr William Bird, for the Royal Society for the Protection of Birds. (2007). Natural Thinking: Investigating the links between the Natural Environment, Biodiversity and Mental Health

⁹⁰ Office of National Statistics. (2009). Mid-2008 Population Estimates UK

⁹¹ WHI. (1999). Business Plan

⁹² Voss, M,W., Prakash, R,S. et al. (2010). Plasticity of brain networks in a randomized intervention trial of exercise training in older adults. *Frontiers in Aging Neuroscience* 2(32) pp.1-17

⁹³ English Heritage, Countryside Agency and Sport England. (2003). The use of public parks 2003

⁹⁴ GreenSpace. (2010). GreenSTAT visitor survey

Social Care and Disability

Green spaces that have on site staff teams such as city farms, community gardens, Country Parks, Woodland and Wildlife Trusts, can be particularly useful environments for people with social care needs. They can provide a safe, risk-managed environment, often with specialist staff, facilities, equipment or programmes aimed at those disadvantaged by physical or mental difficulties.

They may provide natural therapy – aspects of social or therapeutic horticulture and animal assisted therapy provided in a holistic manner. Where this therapy can be delivered by a community managed space within the same community as the disadvantaged group the benefits are enhanced. Many of these services are delivered under contract to local authorities and provide a cost effective alternative to institutionalised care. The benefits include: Feelings of safety, relaxation, achievement and happiness, increased self-esteem and instilling of a sense of responsibility.

- It is estimated that at least 15% of volunteers to community managed green spaces have a disability.⁹⁵

Equalities

Everyone should have access to good green spaces irrespective of ethnicity, gender, sexual orientation, disability, age or religion. Despite much equality legislation, it is often the least advantaged who are worst served by a standard service.

In addition there is little research investigating income and race inequalities in relation to urban green space provision and use.

CABE Space commissioned research, the largest study of its kind in England in 2010, to investigate the inter-relationship between urban green space, inequality, ethnicity, health and wellbeing.⁹⁶

The quantity of green space, as well as the quality, varies enormously across inner cities. In areas where residents are almost entirely white, there is 11 times more green space than areas where more than 40% of residents are Black, Asian or Minority Ethnic (BAME). The research found that people view green space as a key service, alongside housing, education and policing. Half of the 500 people interviewed reported they would do more exercise if green spaces were improved, and half expected they would have better mental health. But less than one per cent of people living in social housing said they use the green space on their estate.

The study also reveals a number of barriers to better use of public green space by black and minority ethnic people. Only half of Bangladeshi people, for example, reported feeling safe using their local green space, compared with three quarters of white people interviewed. In response, CABE recommended there should be more scope for communities to take over temporarily vacant land, and that RSLs and local authorities responsible for green spaces should work with voluntary groups to make it easier for people to improve the green spaces on their doorsteps.

⁹⁵Federation of City Farms and Community Gardens. (No date). Membership Survey

⁹⁶ CABE Space. (2010). Community Green: using local spaces to tackle inequality and improve health

City farms and community gardens present a safe and welcoming environment for ethnic and other minority or excluded groups. These spaces may also be amongst the very limited number of green spaces available to them. They provide a facility where people can try a range of activities such as growing and sharing food from other cultures.

Quality standards directly affect all green space users' perceptions about a space and their willingness to use it. When a space is perceived as clean, safe and attractive it will appeal to a broad audience including vulnerable and minority members of the community. As the quality of a space declines and it becomes perceived as neglected and unsafe, it is the most vulnerable members of society that stop visiting and benefitting first.⁹⁷

CABE and the National Housing Federation, with the partnership of Neighbourhoods Green, have also produced a practical action plan, '*Decent homes need decent spaces*', to help social landlords provide more opportunities for residents to enjoy the space on their doorsteps and meet their neighbours in a safe and pleasant environment.⁹⁸

- More than 70% of BAME communities in England live in many of the most deprived areas in the country.⁹⁹
- If you live in a deprived inner-city area you have access to five times fewer public parks and good quality general green space than people in more affluent areas.¹⁰⁰
- In areas where more than 40% of residents are black or minority ethnic, there is 11 times less green space than in areas where residents are largely white. And the spaces they do have are likely to be of poorer quality.¹⁰¹
- Everyone should have access to good green spaces. It is often the least advantaged who are worst served by a standard service.¹⁰²
- People living in the 44 most deprived areas in England named pollution, poor public transport and the appearance of the estate as major issues about where they live.¹⁰³
- The 44 most deprived areas in England contain 4 times more people from ethnic communities than other areas.¹⁰⁴
- People from ethnic minority backgrounds experience more health consequences from isolation and fear of crime in their local environment.¹⁰⁵
- Open spaces are more accessible to ethnic minority children than any other leisure activity, but their satisfaction rates are lower, often related to fears over personal safety and racial abuse.¹⁰⁶
- Local authorities have an obligation to assess their policies and practices against the requirements of the Local Government Equality Standard.¹⁰⁷
- A person's ethnicity is the strongest indicator of the way they use their local green spaces. Therefore greater variety and flexibility in provision is required as well as consistently higher quality in all areas.¹⁰⁸

⁹⁷ CABE Space. (2005). Decent Parks? Decent Behaviour? The link between the quality of parks and user behaviour

⁹⁸ CABE Space. (2010) Decent homes need decent spaces: An action plan to improve open spaces in social housing areas

⁹⁹ Office of the Deputy Prime Minister. (2005). Improving the Prospects of People Living in Areas of Multiple Deprivation in England

¹⁰⁰ CABE Space. (2010). Urban Green Nation: building the evidence base

¹⁰¹ CABE Space. (2010). Urban Green Nation: building the evidence base

¹⁰² GreenSpace. Meeting Community Needs. <http://www.green-space.org.uk/downloads/articles/3.1.2%20-%20Meeting%20community%20needs.pdf>

¹⁰³ Black Environmental Network. (2005). Ethnic Communities and Green Spaces: guidance for green space managers

¹⁰⁴ Black Environmental Network. (2005). Ethnic Communities and Green Spaces: guidance for green space managers

¹⁰⁵ Black Environmental Network. (2005). Ethnic Communities and Green Spaces: guidance for green space managers

¹⁰⁶ Black Environmental Network. (2005). Ethnic Communities and Green Spaces: guidance for green space managers

¹⁰⁷ Department for Communities and Local Government. (2006). Living Places: Cleaner Safer Greener

Crime and Policing

High quality maintenance of public space should be integral to strategies for enabling the police to deal with “the crime and anti-social behaviour that blights peoples’ lives.” People respond to their environment and there is a direct correlation between peoples’ perceptions and behaviour and the quality of their surroundings. In areas where public space is dirty, vandalised and visibly neglected, decent people move elsewhere or become less visible, vulnerable people retreat to the sanctuary of self-imposed curfews while those with mischievous or criminal intent thrive and dominate. Where there is investment in public space and ambition to provide communities with clean, beautiful, high quality inspiring environments, the converse is true.

The cultural commentator Charles Landry describes how in run-down environments ‘the sense of powerlessness, vulnerability and impotence begins to shape self-identity. The responsible individual as potential maker, shaper and creator of the environment becomes a passive individual always on the receiving end. He or she negotiates the world as a dangerous jungle with risks lurking in the undergrowth beyond the control of humanity.’¹⁰⁹

- 31% of parks suffer from unacceptably high levels of vandalism and behaviour related problems.¹¹⁰
- 60% of local authorities have had little or no success in tackling this issue.¹¹¹
- 11% of parks’ maintenance budgets are spent on repairing or replacing vandalised or misused items in parks – an estimated £64m each year across the UK.¹¹²
- In a 1995 MORI poll, seven out of ten people said that ‘derelict land reduces the quality of people’s lives’. When public space is not managed and maintained, it attracts crime and anti-social behaviour, reduces property prices, community cohesion and opportunities for healthy living and limits economic development.¹¹³
- Living near a well maintained park increases the value of the average home by 6%. Living near derelict or neglected land can decrease the value of the average home by 15%.¹¹⁴
- 91% of people believe that public parks and open spaces improve their quality of life. However, 20% think that it is “not worth investing money in the upkeep and maintenance of local parks and public spaces because they will just get vandalised”.¹¹⁵
- In a survey of 5865 respondents, 14% disagreed with the statement: “Generally, when I visit parks and open spaces I feel safe”. With 33 million regular visitors this equates to over 4.6 million visitors that do not generally feel safe when using parks and open spaces. 66% of respondents agreed with the statement.¹¹⁶

¹⁰⁸ CABE Space. (2010). Community green: using local spaces to tackle inequality and improve health

¹⁰⁹ CABE Space. (2005). What are we scared of? The value of risk in designing public space

¹¹⁰ CABE Space. (2005). What are we scared of? The value of risk in designing public space

¹¹¹ CABE Space. (2005). What are we scared of? The value of risk in designing public space

¹¹² Department for Transport, Local Government and the Regions. (2002). Urban Green Spaces Taskforce Working Group 6

¹¹³ Ipsos Mori. (1995) Unpublished

¹¹⁴ Hometracker Report Quoted in CABE Wasted Space?

¹¹⁵ CABE. (2004). Public Attitudes to Architecture and public Space: Transforming Neighbourhoods, by MORI unpublished

¹¹⁶ GreenSpace. (2010).GreenSTAT visitor survey system

- People are less likely to litter in an area that is clean and tidy and more likely to do so in an area that is already dirty and run down.¹¹⁷
- Dirty and dangerous places encourage graffiti, vandalism and anti-social behaviour.¹¹⁸
- During the racially fuelled riots that took place in Bradford in 2001, the recently restored Lister Park remained undamaged despite being situated in the immediate area where the riots took place.

High quality, well maintained parks and green spaces make a significant contribution to the establishment and retention of stable and law abiding communities. They:

- Provide children with opportunities for play where the rules and protocols of healthy and positive social interaction are learnt.
- Engender within children and newcomers a sense of pride and belonging to a place.
- Divert young people from anti-social behaviour by providing
 - free access to the infrastructure needed for involvement in sport and active lifestyles
 - learning opportunities through involvement with nature conservation and volunteering, from junior rangers to Forest School programmes
 - venues for youth clubs and youth outreach work, Scout and Guide associations and other club based activities
- Provide locations for Restorative Prison projects, probation service work programmes and young offender rehabilitation programmes.
- Provide volunteering opportunities that increase participants' self-worth and improve their employment chances.
- Are managed in close liaison between Police and Ranger services providing vital additional intelligence enabling more effective joined up area / community policing.
- Provide a range of free or low cost events and facilities that bring all sections of the community closer together, breaking down isolation and fear of crime, nurturing community cohesion and involvement.

Culture and Sport

Parks and open spaces enable individuals to revive their creativeness. They are the heart and soul of cities; often retelling our heritage and injecting life into the built environment. Many of our parks and green spaces have an element of historic association such as the name, a monument or commemorative features, with most telling the stories of the local community. Consequently, they imbue the area with a distinctive character and contribute significantly to tourism. Research has proven that the historic environment has a positive and profound relationship to peoples' sense of place; which in turn can have many positive benefits including increased sense of identity and pride.

¹¹⁷ ENCAMS. (2001). Segmentation Research: Public Behavioural Study into Littering

¹¹⁸ Department for Communities and Local Government. (2006). Living Places: Cleaner, Safer, Greener

Cultural gateways such as community events, art and sculpture, music and debate are all available via our green spaces. These are accessible and affordable for all, providing a platform, for skills, interest and lives to be shared; broadening knowledge and awareness and often reinforcing or reintroducing civil society which can so easily become lost in the constant evolution of urban areas. Events and art can engage everyone; they do not exclude, they excite and inspire and bring people together.

Sport and play; whether it is a simple brisk walk, skateboarding, a Sunday League football match or a spur of the moment game of catch or hide and seek, it happens in our parks; they are the home of grass roots participation in sport. With these activities come a whole host of occurrences; interaction, excitement, education, relaxation, freedom and escapism, all contributing significantly to social and health benefits. Play allows children to connect with the natural environment, developing their imagination and physical skills, encouraging risk taking, increasing levels of physical activity, activating higher cognitive processes and healthy brain development, teaching them valuable lifelong lessons and the subtleties of social etiquettes.

- In England we are lucky enough to have, in almost every town and city, public parks and gardens that are many hundreds of years old. Five registered parks and gardens were added to the 'Register of Historic Parks and Gardens' in 2009 taking the total in England to 1,600. The number of registered parks and gardens increased by 7.3% between 2002 and 2009.¹¹⁹
- Play patterns established in childhood are linked to adult health and health behaviour. In particular playing creatively as a child predicts a healthier diet and more active play is associated with generally better health.¹²⁰
- It has been estimated that some 7% of urban park users in England go there for sporting activities - which represents about 7.5 million visitors a year.¹²¹
- From over 50,000 responses to the GreenSTAT national green space visitor survey, 18% visit to keep fit (450 million annual visits) and 11% to play sports or games (275 million annual visits) and 22% to visit the play area (550 million annual visits).¹²²
- The Taking Part survey shows that those participating in cultural activities were 20% more likely to know 'many people' in their neighbourhood.¹²³
- The second most popular type of heritage site visited by the public is a historic garden or park.¹²⁴

¹¹⁹ English Heritage. (2009). Heritage Counts 2009: England

¹²⁰ Cassidy, T., Rushe, J. and Giles, M. (2010). The University of Ulster

¹²¹ Dunnett, N., Swanwick, C. and Woolley, H. (2002) Improving Urban Parks, Play Areas and Green Spaces. London, Office of the Deputy Prime Minister

¹²² GreenSpace. (2010). GreenSTAT visitor survey system

¹²³ Department for Culture, Media and Sport. (2010). Taking Part: The National Survey of Culture, Leisure and Sport Adult and Child Report 2009/10

¹²⁴ English Heritage. (2009). Heritage Counts 2009: England

2. Environmental Value

In any given urban environment the range of public green space is extensive, ranging from parks and gardens; recreation grounds and playing fields; woodlands and urban forests; urban fringe country parks; allotments; neighbourhood playgrounds, riverbanks; linear walks and roadside verges. It is this diversity of green space that exists in and around our towns and cities that makes it particularly valuable to surrounding population and the wealth of wildlife it supports. The fact that over 2.5 billion visits are made to parks and green spaces each year serves to illustrate their value.¹²⁵

Ecology, Nature and Biodiversity

Parks and urban green space provide valuable natural habitats for all forms of wildlife. The ecological value of urban green space varies significantly according to its type and the way it is managed. Very formal areas, managed primarily for their decorative horticultural value, or recreational areas, consisting mainly of amenity grass, can have a lower ecological value than actively managed urban woodland. Unmanaged urban woodland may have a lower ecological value than a public garden that has a lot of variety within its planting schemes. However, all green space has a higher ecological value than the surrounding streets and hard landscape areas.

Biodiversity is the variety of life on earth: the myriad species of plants and animals and the range of habitats where they live. It includes the range of natural genetic variations within species.¹²⁶ Over 150 nations signed up to protecting biodiversity at the Rio Earth Summit 1992. In 2010, having reviewed the available evidence, a report from the ICUN concluded that a significant reduction in the rate of biodiversity loss has not been achieved.¹²⁷

Biodiversity depends on sustaining ecosystems; the natural chains of interdependency that form between plant and animal life. Ecosystems develop according to the unique set of local circumstances that describe the natural local habitat. Global biodiversity therefore depends upon managing, protecting and enhancing local habitats and local ecosystems. Within urban locations the most valuable habitats are invariably found within the diverse range of urban green space;¹²⁸ the woodlands, urban forests, ponds, rivers and riverbanks, parks and gardens, allotments and cemeteries, providing a rich variety of habitats for mammals, birds, insect, aquatic and plant life. Maintaining this diversity of green space is essential to meeting biodiversity conservation objectives, as each space will offer different habitats for species.

The majority of land in this country has been managed for centuries, and many of the richest and most diverse ecosystems rely on the continuation of active land management. Parks authorities are increasingly aware of the importance of effective habitat management and achieving a balance between recreational use of public green space and its valuable contribution to biodiversity is not easy. The process of examining working practices and

¹²⁵ University of Sheffield for the Department of Transport Local Government and the Regions. (2002). Improving Urban Parks, Play Areas and Green Space

¹²⁶ Greater London Authority. (2001). Connecting with London's Nature: The Mayor's biodiversity strategy

¹²⁷ Secretariat of the Convention on Biological Diversity. (2010). Global Biodiversity Outlook 3

¹²⁸ XI World Forestry Congress. (1997). Volume 1, Topic 3: Significance of Green Areas to Biodiversity and the Environment

identifying those that help to conserve and enhance biodiversity, whilst reducing or eliminating potentially harmful practices, is continuous.

Most park authorities try to manage their stock of green space in a more holistic way, putting appropriate management regimes and strategies in place to conserve and enhance green space networks that support the interdependency of species, and encourage as great a diversity of species as possible. Even those sites that are managed for intensive recreational use have the potential for greater ecological value, and many parks authorities are working hard to bring about improvements to these sites.

Intensive agriculture has led to an impoverishment of biodiversity in farmland which has in the past been regarded as the main reservoir for wildlife and biodiversity. Urban green space frequently includes remnants of old wildlife habitats and these are increasingly being acknowledged as a key resource for wildlife and some threatened species which no longer can depend upon farmland for respite.¹²⁹

- “Vegetation provides an opportunity for people to be close to ‘nature’ with the associated positive impact that this can bring in terms of mental health and the simple pleasure of experiencing trees, birds, squirrels, ladybirds and other wildlife in an urban situation”.¹³⁰
- A study of urban gardens in Sheffield found almost as many plant species as the total number of species native to Britain.¹³¹
- Hedgerows have a tremendous value for biodiversity, landscape and history - they have their part to play too in helping us to respond and adapt to climate change, providing conduits through which wildlife may move, and protecting soil, livestock and property against extreme weather events.¹³²
- A mature oak can host up to 5,000 different species of invertebrate that will form the basis of a healthy food chain that benefits birds and mammals.¹³³
- From a survey of 42,332 respondents 68% said that: “the care and protection of nature and wildlife that lives in the park and open space”, was either good, or very good. Less than 10% thought it was poor or very poor.¹³⁴

Air Quality

The plant life and trees found within urban parks and green space play an important role in improving the air quality in urban environments and reducing pollutants. A tree’s ability to offset carbon emissions is determined by size, canopy cover, health, and age, but large trees can help lower carbon emissions in the atmosphere by 2-3%. An 80-foot beech tree has been shown to remove daily carbon dioxide amounts equivalent to that produced by two single-family dwellings. In the right circumstances, when trees are strategically planted to provide either shade or to act as wind breaks, they can generate 10-50% savings in cooling

¹²⁹ The Chartered Institute of Water and Environmental Management. (2001). Nature Conservation Policy Statement

¹³⁰ CABE Space. (2004). The Value of Public Space: how high quality parks and public spaces create economic, social and environmental value

¹³¹ CABE Space. (2005). Start With the Park: Creating sustainable urban green spaces in areas of housing growth and renewal

¹³² Defra. (2007). Hedgerow Survey Handbook: A standard procedure for local surveys in the UK

¹³³ Forestry Commission England. (2010). The case for trees in development and the urban environment

¹³⁴ GreenSpace. (2010). GreenSTAT visitor survey system

expenses and 4-22% savings of heating costs. This reduces the amount of carbon-based fuels used, therefore reducing the emissions that reduce air quality.¹³⁵

The canopies of trees act as a physical filter for pollution. The fine particles known as PM10s are trapped on the surface of the leaves. When carried into the lungs, PM10s make chronic diseases such as asthma and bronchitis worse. Trees have been shown to remove substantial quantities of PM10s on an average summer's day. Tree belts have been shown to be very effective at trapping toxic particles such as lead.¹³⁶

Gases such as carbon monoxide (CO), nitrogen dioxide (NO₂) and sulphur dioxide (SO₂) are known to cause respiratory problems and can also increase sensitivity to allergens. Trees absorb these gases through their leaves. It has been estimated that woodland can reduce concentrations of SO₂ and NO₂ in the air by 4-5%.¹³⁷

The plants and trees which are found in green spaces play an important role in improving air quality and reducing pollutants. Trees naturally absorb carbon dioxide through photosynthesis, acting as a natural carbon sink. The ability of a tree to offset carbon emissions is determined by its size, canopy cover, health and age but large trees can help to lower carbon emissions. Trees also help to absorb nitrogen dioxide, sulphur dioxide and sulphur from the atmosphere.

- A United States study estimated that dust levels in an urban park in Georgia were 60% lower than outside the park.¹³⁸

Air Cooling

Moisture from woodlands and trees is emitted into the air, cooling it and helping to make towns and cities more comfortable places in which to live and work. Daytime temperatures have been found to be about 2-3°C lower in a large urban park than the surrounding streets.¹³⁹

A study in Merseyside revealed that the temperature was 7°C cooler where vegetation cover was 50% compared to where the vegetation cover was only 15%.¹⁴⁰

- Research in Tel Aviv found that the cooling effect of green spaces can be felt up to 100m from the site.¹⁴¹

¹³⁵ Relf, D. (1996). Plants Actually Clean the Air

¹³⁶ Bradshaw, A., Hunt, B. & Walmsley, T. (1995). Trees in the Urban Landscape : Principles and Practice

¹³⁷ Broadmeadow, M,S,J. & Freer-Smith, P,H. (1996). Urban Woodland and Benefits for Local Air Quality Research for Amenity Trees No 5.

¹³⁸ Aldous, D,E. (2006). Benefits of trees and natural green space for urban communities. International Federation of Park and Recreation Administration European Congress, Annecy, France

¹³⁹ Department for Transport, Local Government and the regions. (2002). Green Spaces, Better Places: Final report of The Urban Green Spaces Taskforce

¹⁴⁰ Whitford, V., Ennos, A. R. and Handley, J. F. (2001). City form and natural process – indicators for the ecological performance of urban areas and their application to Merseyside, UK. *Landscape and Urban Planning*, Vol. 57(2), pp.91-103.

¹⁴¹ Shashua-Bar, L. and Hoffman, M. E. (2000). 'Vegetation as a climatic component in the design of an urban street: an empirical model for predicting the cooling effect of urban green areas with trees'. *Energy and Buildings* Vol. 31, pp.221-235

Water and Flood Management

In order for towns and cities to function properly as places where people live and work all year round, they need to be drained to remove surface water. Most of the surface treatments used within hard landscape areas are made of impermeable materials, which require surface water to be removed via the man-made drainage systems, many of which are old. During periods of heavy rainfall the risk of flash flooding is high, putting lives, homes and businesses at risk and causing disruption to transportation and commerce.

The soil system and vegetation that covers areas of green space is highly permeable, and capable of soaking up even substantial rainfall. By soaking up water and recharging natural groundwater supplies, green space reduces the volume and rate of run-off and greatly contributes to a more sustainable urban drainage situation. The rate of run-off for surfaces with trees and grass is estimated to be 10-20%, compared to 60-70% for hard landscaped urban areas.¹⁴² Where urban development has included natural flood plains, the pressure on drainage systems is increased during periods when the river level is high. By ensuring that river flood plains are conserved as green space, this increased pressure is avoided.

When rainwater flows off roads, pathways and other impervious surfaces, it carries pollutants with it. When it enters into waterways it can cause ecological problems.

Investment in an urban area's green infrastructure networks as part of a planned approach to sustainable urban drainage, would quickly pay for itself through savings on the cost of engineered drainage approaches, would improve the landscape, replenish the water table levels, provide opportunities for car free transport routes and make a major contribution to biodiversity.

- Environments with trees are more robust. Water quality is improved as trees act as natural filters. The root systems of trees also counter soil erosion.¹⁴³

Landscape

The visual appearance and attractiveness of towns and cities is strongly influenced by its green space. A high quality built environment, the buildings, roads and public spaces, cannot alone ensure that a town or city is an attractive and appealing place to live and work. The landscape of parks and green space contribute as much to the quality of the urban environment as good architecture. Landscape is the meeting place of culture and environment, the places where what we see is infused with meanings past and present, engendering memories and feelings. The human psyche has retained a strong preference towards the natural landscapes of trees, grass and water; it is the view of choice, the vision we still find most appealing.¹⁴⁴ GreenSpace reconnects us to nature, with all of its intrigue and complexity of line, colour, shape, form, texture, movement and smell.

The image and attractiveness of towns and cities strongly influence people's perceptions of a place. A lack of well managed and cared-for vibrant, healthy, natural green space, will undermine a town or city's appearance, and discourage a positive impression that this is a good place in which to live, work and do business; the cityscape will appear impoverished

¹⁴² Department for Transport, Local Government and the Regions. (2002). Green Spaces, Better Places: Final report of The Urban Green Space Task Force

¹⁴³ Forestry Commission England. (2010). The case for trees in development and the urban environment.

¹⁴⁴ Wilson, E. O. (1993). Biophilia Hypothesis

and unappealing. When people are choosing where to live or locate businesses, this can make the crucial difference; parks and green space are increasingly seen as important components of urban regeneration and neighbourhood renewal schemes.

- In a survey of 5928 respondents, 97% agreed with the statement: “Trees and open spaces can improve the appearance of the town”.¹⁴⁵

Waste

There is growing interest in the role that green spaces can play in waste management. Using natural biological systems for waste, such as mulching with locally produced woodchip and compost, can make the urban environment more self-sustaining.¹⁴⁶

A number of local authorities are now using biomass as a renewable energy fuel, through harvesting their park and street tree prunings. Many woodlands are at their most ecologically valuable state when close rotation coppicing is integrated within the management approach. Close rotation coppicing produces a sustainable supply of biomass ideal for use in Combined Heat and Power units (CHP) which can very efficiently provide the energy needed within buildings. There is scope for a huge increase in the application of this approach. Public buildings and offices can cut back on the need for air conditioning by using deciduous large canopy trees to shade buildings up to six storeys high.

Many of the people that manage parks and green spaces try hard to lead by example in terms of the management and reduction of waste associated with looking after their spaces. Many provide visitors with recycling facilities, they have introduced energy and water conservation measures on-site and within parks buildings and on-site composting facilities for the re-use of their own green waste and sometimes that of the surrounding community. Many allotment gardeners, city farms and community gardens have been the vanguard of organic horticulture methods and local food production for many years. Information about these measures is often provided to visitors which raises their awareness and encourages them to also consider their own waste generation and management.

- Seven out of 10 volunteers increased the amount of waste they recycled and gave advice to others about environment friendly behaviour.¹⁴⁷

Local Food

In recent years there has been an upsurge in interest in 'growing your own', as well as an awareness of other issues such as health and well-being and climate change. Much of this interest has come in the form of community food growing on shared green spaces (allotments, city farms and community gardens) within cities and towns across the UK.

Whether they are growing it, cooking it or selling it, local people can benefit from the fresh food they produce in a huge variety of ways.

¹⁴⁵ GreenSpace. (2010). GreenSTAT visitor survey system

¹⁴⁶ CABE Space. (2009). Grey to Green

¹⁴⁷ BTCV. (2008). Annual Review 2007 – 2008

Producing food can equip people with new skills, provide training opportunities and is a useful tool for therapy. There are health benefits too: nurturing plants or rearing animals involves plenty of exercise, while eating fresh food can improve nutrition and help trim waistlines. The hands-on nature of the work can also broaden a child's education.

Locally grown food can also create social enterprise, have a positive impact on the local environment and encourage local residents to take an active part in their community or spark linked activities like cooking classes.

Many of these projects take place in deprived urban areas where gardens and private growing spaces are less common, where there is a bigger need for healthy eating and improved well-being and where empowerment and community activism is particularly needed.

'Food miles' which refers to the distance food is transported from the time of its production until it reaches the consumer is increasingly recognised as a major contributor to carbon emissions. Even relatively small scale local food production can do much to raise awareness of this global environmental issue and to encourage others to move towards self-cultivating or purchasing from local growers. The waste associated with the packaging of food for sale in shops is also a contributor to environmental degradation on many levels. Again local food production can help to raise awareness of this issue and offer a more sustainable alternative.

Local food production can also contribute towards biodiversity and the conservation of less common varieties of fruit and vegetables. Certain varieties favour certain localities and are part of local tradition, the predominance of cider apples in Somerset for instance. Over time this link between food, geography and geology has been eroded, and with it peoples' understanding of the land on which they live. Local food production can contribute to the reversal of this detachment from nature.

The result of this growth has been a demand for more land to be made available for cultivation from both individuals and community groups. However, existing provision of land, including statutory allotments, has proved inadequate.

- Many allotment sites are under strain, with some estimates suggesting that there are now 100,000 people on waiting lists for the current 300,000 plots. In London the wait for a plot could be at least 10 years, in Bristol the wait can be 2–3 years. Even with the growing trend to offer half plots and more rigorous re-allocation of uncultivated plots, demand will continue to outstrip supply.¹⁴⁸
- Membership of the Federation of City Farms and Community Gardens has risen dramatically in recent years, much of it down to the proliferation of new food growing community groups and projects. In April 2006-2008 the membership rose from 340 to 380. But from April 2008 to 2010, membership has risen to 570. An increase of 190 members in the last two years. Nearly 100 of those have joined in the last year alone.¹⁴⁹
- In the UK, our food travels an amazing 30 billion kilometres each year. This includes imports by boat and air and transport by lorries and cars.¹⁵⁰

¹⁴⁸ Federation of City Farms and community Gardens. (no date)

¹⁴⁹ Federation of City Farms and Community Gardens. (no date)

¹⁵⁰ Climate Choices, Children's Voices & Food Climate Research Network

- Food transport is responsible for the UK adding nearly 19 million tonnes of carbon dioxide to the atmosphere each year. Over 2 million tonnes of this is produced simply by cars travelling to and from shops.¹⁵¹

Local food growing is an end in itself – but it encourages community action and engages local citizens in their communities.

Energy and Climate Change

Today, carbon dioxide emissions stand at 430 parts per million (ppm) compared to pre-industrial revolution levels of 280ppm.¹⁵² This increased concentration has already affected global climates and regardless of action taken now to reduce emissions, warming is predicted to continue to take place. Considering this, Parks and green spaces have an important role to play in both the mitigation of and adaptation to climate change.

Mitigation:

There are steps which can be taken to reduce greenhouse gas emissions and concentrations of these gases in the atmosphere and the severity of changes to climate. Parks and green spaces act as carbon sinks, removing carbon dioxide from the atmosphere and storing it away.

Public parks, green spaces, community gardens and allotments provide the perfect opportunity for communities to grow their own food, reducing the use of nitrogen fertilisers. Producing food locally cuts down the need for transport and emissions of greenhouse gases. Networks of green space can provide transport routes for those in a local environment, reducing the need to travel by car and the level of pollutants emitted into the atmosphere. Green forms of transport do not emit pollutants to the atmosphere and green networks provide much cleaner air to inhale.

The production and consumption of food in the UK is estimated to account for almost a fifth of our overall greenhouse gas emissions. Food transport accounts for an estimated 12% of all greenhouse gases associated with UK food production emissions.¹⁵³

- 10% increase in green cover can potentially eliminate the effects of climate change on increasing surface temperatures.¹⁵⁴
- 1 hectare of trees and shrubs can absorb 1 tonne of CO₂ – equivalent to 100 family cars – a single tree will produce enough oxygen for 10 people.¹⁵⁵
- The evaporation from a large tree is estimated to produce the cooling effect of 10 room-sized air-conditioners.¹⁵⁶
- In Washington DC there are 4,839 acres of general tree cover in the city's 7,999 acres of parkland. They remove 244 tons of carbon dioxide, nitrogen dioxide, ozone, particulate matter, and sulphur dioxide.¹⁵⁷

¹⁵¹ Climate Choices, Children's Voices & Food Climate Research Network

¹⁵² Department of Energy and Climate Change. (2007). Meeting the energy challenge: A white paper on energy

¹⁵³ Making Local Food Work. (2010). Local Food and Climate Change: The role of community food enterprises

¹⁵⁴ CABE Space. (no date). The benefits of urban trees

¹⁵⁵ The Land Restoration Trust. (no date). Public Open Green Space Works

¹⁵⁶ Parks Victoria. (2008). The Value of Parks

¹⁵⁷ The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

- Philadelphia receives an average of 43.29 inches of rain per year. Its 10,334 acre park system is 81.3% pervious, the model developed by the Forest Service shows that Philadelphia's parks reduced rain water runoff in 2007 by 496 million cubic feet.¹⁵⁸

Adaptation:

With the recognition that changes in climate are locked into the system, green spaces provide the capacity to respond to the impacts of climate change. Green spaces moderate urban temperatures, through evapotranspiration and the provision of shade. Air under a tree's canopy can be as much as 5-10°C cooler compared to full sun.¹⁵⁹ This will help to ensure that towns and cities continue to be reasonably comfortable for people to live, work and visit.

Urban green spaces also provide a way to reduce the risk of flash flooding due to the permeable nature of the surface. They are able to drain water away and store it rather than it running into drains and sewers. The rate of run off for surfaces with trees and grass is estimated to be 10-20%, compared to 60-70% for hard landscaped urban areas.¹⁶⁰ Additionally, a 10% increase in green cover could reduce the volume of surface runoff in extreme rainfall events by 14%.¹⁶¹

With a warmer climate, it is likely that a more outdoor lifestyle will be adopted and parks and green spaces will be instrumental in providing spaces which people, enjoy and use in their leisure time to cope with the changes in climate change.

Of course this ability of parks and green spaces to both mitigate climate change and help humans and other species to adapt to its impact fully depends on staying green. Traditionally in this country the vast majority of green spaces receive little or no irrigation beyond that provided by natural rain fall. This is unlikely to be sufficient to retain a healthy vegetation cover throughout the summer months and grass, trees, shrubs, and other vegetation are all likely to struggle without some form of additional irrigation. Our ability to provide additional irrigation will depend on our capacity to collect and store water. As long as green spaces remain green their permeability will contribute to the replenishment of the water table however, this will no longer be enough of a contribution. Parks and green spaces will need to play their part in an integrated water management system linked to sustainable urban drainage systems equipping us to more efficiently harvest natural rain fall. This will necessitate the construction of new water courses and storm water gullies linked to new reservoirs and holding tanks which can be used for irrigation purposes during the height of summer.

Many indigenous and naturalised species, plant or animal, are very susceptible to changing conditions, a mature Beach tree for example can die off across a single season if exposed to severe drought. Without investment to moderate the worst of the potential extreme effects, the entire ecosystem becomes exposed to change and imbalance, the potential implications of which are at this stage largely unknown. Rather than wait until this happens, prudent

¹⁵⁸ The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

¹⁵⁹ Barton, S. (2008). Adapted from the lecture "the healing garden: social research" PLSC100: Plants and Human Culture. November 18.

¹⁶⁰ Department for Transport, Local Government and the Regions. (2002). Green Spaces, Better Places: Final report of The Urban Green Space Task Force

¹⁶¹ Community Forest North West. (no date). Green infrastructure to combat climate change

environmental management requires early pre-emptive intervention to support conservation measures. Although this requires investment, it is the kind of investment that will ultimately save more than it cost through reduced expense against other forms of storm water management for example.

An increased commitment to research is also needed to assist parks teams to understand more about which species are likely to become more vulnerable and fragile and to develop techniques to aid their conservation. Where green spaces are currently not contributing highly to biodiversity, the 'green dessert' amenity areas for example, whole scale replacement of the existing planting in preference for hardier less water dependent varieties may be the right approach. In this way these areas will remain green, maintaining permeability and contributing to air cooling etc. whilst allowing the water reserves to be better utilised elsewhere, conserving more ecologically valuable green environments.

- Trees moderate local microclimates – urban areas with trees are cooler in summer and warmer in winter and can help to alleviate fuel poverty.¹⁶²
- Well-positioned trees also improve the environmental performance of buildings by acting as a buffer or 'overcoat', reducing thermal gain in summer.¹⁶³
- In urban areas, just a 10% increase in tree coverage will counter the predicted 4°C temperature rise over the next 100 years caused by climate change and the heat island effect.¹⁶⁴
- The proportion of adults considering climate change one of the top three most important issues facing Britain was about a quarter (24%) in 2009.¹⁶⁵

Transport

A modern transport infrastructure is essential for a dynamic and entrepreneurial economy, as well as to improve well-being and quality of life. However, to achieve this it needs to be greener and more sustainable and must support sustainable travel initiatives including cycling and walking.

Parks and green spaces already play a significant role in supporting more sustainable patterns of transport. Of the 2.5 billion annual visits, almost 10% are in order to take a short cut to another destination, this rises to 15% when visitors who either walk or cycle to the park are examined in isolation. Over 70% of all journeys to parks are made either on foot (68%) or by bicycle (4%). Many miles of car free footpaths and cycle paths are provided by the networks of parks and green spaces within our towns and cities contributing to the national networks of:

- Sustrans National Cycle Network
- Safe Routes to Schools
- Rights of Way
- Bridleways

¹⁶² Forestry Commission England. (2010).The case for trees in development and the urban environment

¹⁶³ Forestry Commission England. (2010).The case for trees in development and the urban environment

¹⁶⁴ Plant for Life. (2009). Greener Planning, Greener UK

¹⁶⁵ The Department for Transport. (2010). Annual survey of public attitudes towards climate change and the impact of transport

This contribution to sustainable transport relies on the continued maintenance of the pathway systems, and ensuring that green spaces are attractive high quality spaces that people feel safe using. The contribution made could be greatly increased with continued investment in paths, entrances and signage, and through improved management of the urban green infrastructure with improved connectivity between different spaces to create more seamless and integrated green space corridors. This would also create benefits for nature conservation.

The average UK citizen makes around three journeys a day (1,000 journeys per year), travelling in total for about one hour and covering a distance of about 20km.

Around two thirds (63%) of all journeys are made by car¹⁶⁶, and yet:

- 20% of all journeys are less than 1 mile¹⁶⁷
- The percentage of journeys made on foot is declining while the percentage made by bicycles remains static¹⁶⁸
- The percentage of primary school children that are driven to school (43%) is increasing¹⁶⁹
- The average time spent walking or cycling for travel purposes has decreased by 15% (1995 to 2008)¹⁷⁰
- 23% of all journeys are made on foot¹⁷¹
- Only 2% of all journeys are made by bicycle¹⁷²
- From a survey of 5866 respondents, 86.5% agreed with the statement: "Improving off road footpaths and cycle-ways between open spaces is important."¹⁷³
- From a survey of 5844 respondents, 78% agreed with the statement, "Improved traffic free footpaths and cycle routes would encourage me to walk or cycle."¹⁷⁴

¹⁶⁶ Department for Transport. (2010) National Travel Survey: 2009

¹⁶⁷ Department for Transport. (2010) National Travel Survey: 2009

¹⁶⁸ Department for Transport. (2010). Transport Trends: 2009 Edition

¹⁶⁹ Department for Transport. (2010). Transport Trends: 2009 Edition

¹⁷⁰ Department for Transport. (2010). Transport Trends: 2009 Edition

¹⁷¹ Department for Transport. (2010). National Travel Survey: 2009

¹⁷² Department for Transport. (2010). National Travel Survey: 2009

¹⁷³ GreenSpace. (2010). GreenSTAT visitor survey system

¹⁷⁴ GreenSpace. (2010). GreenSTAT visitor survey system

3. Economic Value

High-quality green space has a significant impact on the economic life of urban centres. As towns and cities increasingly compete with one another to attract investment, the presence of good parks, squares, and gardens becomes a vital economic lever to first attract and then retain new businesses.

Attractive green space also offers very clear benefits to the local economy in terms of stimulating increased house prices, since house-buyers are willing to pay a premium to be near green space.

The value cities get from their parks system is now starting to be quantified to place this green infrastructure alongside other municipal spending. For example, the park system of Denver, USA, population 500,000, has provided the city annual revenue of \$71m, municipal savings of £3.6m, resident savings of \$517m and a collective increase of resident wealth of \$48m.¹⁷⁵

The asset value of parks is also starting to be realised. A recent study calculated the value of a major public park as £108 million: the value of its paths, planting, equipment and buildings. However, most councils value public parks at just £1 each!¹⁷⁶

Business Attraction and Retention

Quality of life is a major consideration when businesses are deciding where to locate, and green space and the recreational opportunities they provide are as important as low crime rates and safe streets.

- Owners of small companies rank recreation, parks and open spaces as the highest priority in choosing a new location for their business¹⁷⁷
- Corporate CEOs say quality of life for employees is the third most important factor in locating a business, behind only access to domestic markets and availability of skilled labour.¹⁷⁸
- Skilled and educated employees consider quality of life to be as important as salaries.¹⁷⁹

Increase in Property Value and Local Taxes

As early as the 1850s, landscape architect Frederick Law Olmsted justified the purchase of land for New York's Central Park by noting that the rising value of adjacent property would produce enough in taxes to pay for the park. By 1873, the park was responsible for an extra \$5.24 million in taxes each year.¹⁸⁰

¹⁷⁵ Trust for Public Land. (2010). The Economic Benefit of Denver's Park and Recreation System

¹⁷⁶ CABE Space. (2009). Making the Invisible Visible – the Real Value of Park Assets

¹⁷⁷ Crompton, Love and Moore. (1997) Characteristics of companies that considered recreation/open space to be important in (re)location decisions. *Journal of Park and Recreation Administration* 15 (1): pp.37-58

¹⁷⁸ Cushman and Wakefield (1989) in Crompton, J.L. (2002). Parks and Economic Development

¹⁷⁹ Trust for Public Land. (1999). Attracting Investment

¹⁸⁰ Olmsted, F.L. In Crompton, J.L. (2007). The role of the proximate principle in the emergence of urban parks in the United Kingdom and the United States. *Leisure Studies*, 26(2) pp.213-234

- In the UK a study in the North West of England showed proximity to city parks was found to augment property prices by nearly 20% for a detached property¹⁸¹
- In Ohio, Boulder and Columbus, homes next to parks sold for between 5% and 23% more than similar homes one block away. In Colorado, housing values declined by \$10.20 for every foot of distance away from a scenic wooded greenbelt; the effect extended for more than half a mile.¹⁸²
- Attractive well-managed parks and green space directly add value to adjacent properties, and this in turn generates additional property tax revenue. In Ontario, a statistical analysis of data for two neighbourhoods showed that there was an increase in property values of around \$8.00 per foot closer to green space. This equated to an increase in property tax revenue of 8%.¹⁸³
- In Philadelphia it has been calculated that the total benefit from all tax receipts from increased property value relating to proximity to green space is in excess of \$18m.¹⁸⁴
- Many cities are also now seeing that the redevelopment of high-quality public spaces aids the regeneration of an area, with commercial property prices increasing in those locations. Lease rates of properties facing Post Office Square in Boston, Massachusetts, command a 10 per cent premium over those without a park view.¹⁸⁵

Redevelopment and Renewal

The contribution and added value of green space to regeneration is well established throughout the world and successful examples can be seen in Melbourne, Toronto, New York, Minneapolis, Paris, Barcelona and Chicago. Community managed green spaces often begin on neglected or waste land which is redeveloped and regenerated by local people into a valued community resource.

- Aside from the perception, image, and quality of life benefits, Millennium Park in Chicago is expected to bring to the city over the next 10 years \$1.4 billion in enhanced property values, roughly \$2 billion in tourism, and hundreds of millions more in increased retail and business enhancement.¹⁸⁶
- In Chattanooga, Tennessee, a \$355 million makeover, centred on the acquisition and improvement of green space parks and trails, has generated 1,280 full-time jobs and 555 part-time jobs. Property values are up more than 124%, tax revenues are up 99% and the number of businesses is up 117%.¹⁸⁷
- Mile End park in the London Borough of Tower Hamlets has made a significant contribution to the local economy through the inclusion of new retail units within its design and generating additional customers for local retailers and caterers. In the longer term, it may also help with other business retention and attraction.

¹⁸¹ Neill Dunse. (2007). Urban parks, open space and residential property values, RICS

¹⁸² Nickson, A. (no date). The Economic benefits of Parks: paper to London GreenSpace Conference

¹⁸³ Crompton, J.L. (1999). Financing and Acquiring Park and Recreational Resources

¹⁸⁴ The Trust for Public Land. (2008). How much value does the City of Philadelphia receive from its Park and Recreation System?

¹⁸⁵ Phillips, P.L. (2000). Economic Research Associates. ERA Issue Paper: Real Estate Impacts of Urban Parks

¹⁸⁶ Will Rodgers for Lambda Alpha. (2007) Urban Parks – the New ROI. A presentation by Will Rodgers for Lambda Alpha, Chicago 5/16/07

¹⁸⁷ The Trust for Public Land. (1999). Open Space Investments Pay Big Returns

Health

The evidence for the preventative health value of high quality green space is growing. Apart from the ability of urban green space to reduce pollution, and the build-up of the particulates that can aggravate respiratory diseases such as asthma and bronchitis, green space contributes significantly to stress reduction, the alleviation of depression and dementia.

Obesity and cardiovascular diseases are rising sharply. Through easy and affordable access to recreational opportunities, and the growing use of GP referral schemes, parks can play a valuable role in reducing otherwise expensive treatments, saving the health service millions.

- Health problems associated with obesity and inactivity are estimated to cost the health service £0.5 billion annually, and cost industry an additional £2 billion annually in lost productivity.¹⁸⁸
- The Cabinet Office calculates that inactivity costs England £8.2 billion.¹⁸⁹
- Regents Park provides opportunity for physical activity and saves £3.1million and £463,000 to the economy and NHS respectively each year.¹⁹⁰
- The health value of Denver's park system has been calculated at £65m and this only relates to the value that can be derived from active lifestyles: the wellbeing assessment and the value in combating depression and dementia is not included.¹⁹¹
- A permanent reduction of 1% unit in the UK sedentary population (from 23% to 22%) is estimated to deliver a social benefit of up to £1.44 billion per year¹⁹²
- If just one in 100 inactive people took adequate exercise, it could save the NHS in Scotland as much as £85 million per year.¹⁹³
- The 'Parks Health Benefits Calculator' was applied to Sacramento's city residents where it was found that because 78,000 residents engage actively enough in parks to improve their health – 72,000 of them under 65 years old and 6,000 older - the medical savings realised in 2007 could be estimated to achieve a value of \$19,872,000.¹⁹⁴

Recreation

While city parks provide much indirect benefit, they also provide huge tangible value through such activities as team sports, bicycling, skateboarding, walking, picnicking, bench sitting, and visiting a flower garden. Economists call these activities “direct uses.” Most direct uses in city parks are free of charge, but economists can still calculate value by knowing the cost of a similar recreation experience in the private marketplace. This is known as “willingness to pay.”

In other words, if parks were not available in a city, how much would the resident (or “consumer”) pay in a commercial facility? Thus, rather than income, this value represents savings by residents. The model used to quantify the benefits received by direct users is based on the “Unit Day Value” method developed by the U.S. Army Corps of Engineers. Park visitors are counted by specific activity, with each activity assigned a dollar value by

¹⁸⁸ The Help for Health Trust. (1999). Obesity; referencing the 1999 Health Survey for England

¹⁸⁹ Dr William Bird for the RSPB. (2004). Natural Fit: Can Green Space and Biodiversity Increase Levels of Physical Activity?

¹⁹⁰ Dr William Bird presentation

¹⁹¹ The Trust for Public Land. (2010). *The Economic Benefit of Denver's Park and Recreation System*

¹⁹² The Forestry Commission. (2005). Economic Benefits of Accessible Green Spaces for Physical and Mental Health

¹⁹³ Bird, W. (2003). Nature is good for you! *ECOS*, Vol. 24(1) pp29-31

¹⁹⁴ The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

economists familiar with prices in the private market place. For example, playing in a playground is worth \$3.50. Running, walking, or in-line skating on a park trail is worth \$4, as is playing a game of tennis on a city court.

- Boston's 5,040 acres of parks and the pastimes these parks offer: jogging visiting the playground, tennis, attending events etc.- these and many more "direct uses" were measured in a telephone survey of Boston residents and were then multiplied by a specific dollar value for each activity. Based on the level of use and those values, it was found that in 2006 Boston's park and recreation system provided a total of \$354,352,000 in direct use value.¹⁹⁵

Environment

The management of surface water run-off through hard-engineering solutions is an expensive business, and the contribution that urban green space makes has a substantial economic value.

- A 1% increase in protected wetlands along a stream corridor can reduce peak flows by over three times. It is estimated that trees in the City of Atlanta have prevented the need for \$883 million in storm water retention facilities.¹⁹⁶
- Storm water cost savings due to parks in Denver has been calculated at \$804m.¹⁹⁷
- Philadelphia storm water management cost is 1.2 cents (\$0.012) per cubic foot. Thus, the park system, which reduced runoff by 496 million cubic feet, provided a storm water retention value in 2007 of \$5,949,000.¹⁹⁸
- The creation of 500 acres of wetland green space in Napa, California cost the state \$160 million but cured a river flooding problem that has caused \$500 million in flood damage since 1960.¹⁹⁹

Green space contributes to air pollution reduction in many ways; by reducing building heating and cooling costs, providing cycle and pedestrian routes, thereby reducing car dependency, by absorbing carbon dioxide and producing oxygen and by filtering out harmful particulates.

- In Chicago, the urban tree canopy removes 379 metric tons of greenhouse gasses, and 212 metric tons of particulates. This saves the city \$1 million a year in what would otherwise be spent on traditional pollution mitigation efforts.²⁰⁰
- Using the Air Quality Calculator developed by the US Forest Service the economic savings of the park system in reducing air pollution was estimated at \$1,534,000.²⁰¹
- Washington's 4,839 acres of general tree cover removed 244 tons of pollutants, the savings were \$1,130,000.²⁰²

¹⁹⁵ The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

¹⁹⁶ Robbins, C. (1999). The Value of Parks

¹⁹⁷ The Trust for Public Land. (2010). The Economic Benefits of Denver's Park and Recreation System

¹⁹⁸ The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

¹⁹⁹ Robbins, C. (1999). The Value of Parks

²⁰⁰ Liveable Places Update. (1999). Emerging Trends in Community Planning and Design

²⁰¹ The Trust for Public Land. (2008). How much value does the City of Philadelphia receive from its Park and Recreation System?

²⁰² The Trust for Public Land. (2009). Measuring the Economic Value of a City Park System

Tourism

Many towns and cities rely on tourism to provide a substantial part of their annual revenue. In most cases, the public parks and green space in, or immediately around, the town contribute to its attractiveness as a tourist destination. Whilst the green space may not always be the primary attraction, they are often the most visible; any significant decline in quantity, or quality, will quickly have a detrimental effect on visitor numbers.

Where green space is the major attraction, for instance, National Parks and some Country Parks, their conservation and maintenance are essential to the local economy.

- In 1994, the total spending by all visitors to the countryside was estimated at £9 billion; visitors to National Parks are higher spenders than day visitors to the countryside in general.²⁰³
- The contribution of the parks system to tourism in Denver has been estimated at \$18m for 2009.²⁰⁴

Events

A huge range of events take place in public parks and green space, from small local community-based events, through to those of national importance. The smaller events often assist community organisations to raise valuable money to support their charitable work. They also generate localised involvement, with the potential to stimulate interest in community improvement and cohesion, as well as promoting volunteering opportunities. The larger events generate substantial sums for the event organisers, releasing huge secondary spend within the host town. Park based music festivals such as Virgin's 'V' events, Carling's Reading and Leeds festivals, WOMAD, Tenants' T in the Park, and Radio One's four One Big Sunday events, usually attract around 100,000 visitors each across the festival weekend. All ten are held in public parks and between them attract around one million visitors. Whilst these are amongst the most noticeable of park-based events, there are many others: The Proms classical music; real ale and jazz festivals; open air theatre; community carnivals; craft shows; dog shows; the list is endless. Every large event will generate some degree of revenue; with secondary spend providing a significant boost to the local economy.

- The Royal Parks generated over £14m from events throughout the capital in 2009.²⁰⁵
- The Adelaide Park Lands, which ring the Central Business District, cover an area of 688 hectares. In 2005–2006 the park lands contributed over \$130 million to the South Australian economy from 2.7 million general visitors, 1.3 million visitors to its Botanic Gardens, 83,737 patrons of its golf links and the conduct of more than 800 events.²⁰⁶

²⁰³ Emagazine. (2001). Parks as Lungs

²⁰⁴ The Trust for Public Land. (2010). The Economic Benefits of Denver's Park and Recreation System

²⁰⁵ The Royal Parks. (2010). Annual Report & Accounts 2009-2010

²⁰⁶ Adelaide City Council. (2007). Sustainability fast fact sheet. Prepared for Strategy Reference Group Meeting, 1–8 March 2007.

Industry/Employment Value

In the UK, local authorities manage and maintain 27,000 parks and green space, at an annual revenue cost of around £1.1billion.²⁰⁷ There are in excess of 50,000 people directly employed within the public parks and green space industry; many others are employed in associated industries such as manufacturers of park-based equipment and products. In addition, community managed green spaces create hundreds of opportunities for full or part time employment plus thousands of volunteering placements across the UK, many of which actively promote work related skills. The money spent by organisations managing and maintaining their stocks of parks and green space, makes a substantial contribution to local economies.

²⁰⁷ NAO. (2006). Enhancing Urban Green Space