

Royal Commission on Environmental Pollution Study on Urban Environments, Well-being and Health

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**This work represents a review of the literature available on the aforementioned topics, and should in no way be seen as a new research or a new contribution to the field it discusses. All material is derived from existing research in the field.**

# **DESK STUDY: URBAN NATURE**

## **Introduction**

This report investigates the relationship between nature and human health and well-being in urban areas. It examines what is meant by the term 'urban nature', including a discussion of how nature is influenced by human interventions. The report specifically investigates the impact urban nature has on psychological well-being, child development, physical health and social health. It cites examples of how different types of urban nature (such as parks, gardens and derelict sites) influence health and well-being, both positively and negatively. The report concludes, based on relevant literature, that access to urban nature is essential to human health and well-being. It therefore suggests that urban nature areas must be provided and managed, to ensure equal access to all urban residents.

Many issues arise concerning what form appropriate management should take, in order to maximise the benefits to human health and well-being. Such issues discussed include the possibility of leaving areas unmanaged and the role of communities and partnerships in the management process. The funding and governance required for successful management of urban nature areas is also briefly examined.

## **1/ How do different aspects of urban nature relate to human health and well-being in urban areas?**

Before this question can be addressed, it is necessary to firstly examine the issue of how nature in urban areas is conceptualised, especially with regard to the unique relationship between nature and urbanisation.

### **What is urban nature?**

Current research funded by the Economic and Social Research Council (ESRC) discusses how urban areas are often not regarded as places for becoming acquainted with wildlife or enjoying open spaces. It suggests that there is a long history of separation between town and country that serves to divide cities from their local ecologies. Urban habitats and species are often considered somehow less natural than, or not as important as, their rural counterparts. The research argues however that there is now plenty of evidence to suggest that urban biodiversity can be higher in cities than surrounding rural areas and that unique assemblages of species and habitats can produce as much scientific and social interest as non-urban landscapes. Other evidence, (Sabloff 2000) argues that although people are disinclined to recognise any urban being as natural, nature is woven into the fabric of the city. Many species are attracted to the city precisely because of the cityscape itself.

Further ESRC research (Living Cities 2003) contends that the opposition between cities and nature has begun to be challenged by a 'greening' of urban policy over the last fifteen years or so. In the UK, this 'greening' of urban policy has gathered momentum because urban biodiversity is starting to be given the kind of conservation significance once reserved for rural and sparsely populated regions, as city gardens become the refuge for species expelled from the countryside by industrial farming practices. Other evidence from The Royal Society for the Protection of Birds (RSPB) supports these findings and suggests that gardens, parks and churchyards all support a wealth of wildlife, much of it thriving while its countryside counterpart faces problems.

Although the importance of biodiversity, species and habitats in urban areas is well acknowledged and documented, there is less evidence providing a concrete definition of exactly what constitutes urban nature. In the most basic definition, urban nature describes all living things (both plants and animals) in an urban area. But some distinctions need to be made. Is an intensively managed

landscaped garden as great a part of urban nature as a pocket of wilderness? Is a pest or a weed as valued a part of nature as a tree?

One way to distinguish between different types of urban nature, and define what is natural, is the degree to which wildlife or a habitat has been influenced by humans. All nature in urban areas has been affected by humans, but some landscapes have been influenced by a greater extent. Kendle and Forbes (1997) suggest that the very term urban nature seems counter intuitive to some people. For many, urban areas are associated with human control and influence whereas nature is associated with a lack of human intervention. They argue that "Perhaps the greatest distinction between the 'natural' and the 'unnatural' hinges...on the degree of perceived control and human influence that is associated with the landscape". Similarly, Kuser (2000) contends that naturalness can be defined based on the 'variability of external energy resources required to maintain a system in its present state' and the 'capacity for self-maintaining', ie the required degree of external human intervention. In this sense, perhaps the pocket of wilderness can be seen as more natural than the landscaped garden.

Using this distinction however assumes that humans are apart from nature. Krieps (1989) suggests that in fact the word nature has two meanings. One is 'modern nature': man controlling nature's destiny, and the other is 'mother nature': an organism made up of everything that lives. In the latter meaning humans are seen as a part of nature, so all that is living that they have a hand in creating, can also be seen as natural. Although there has been the emergence in many people's minds of two separate entities, humans and nature (Planning Policy Guidance note 17), we must consider whether human influences are a part of nature.

Using the distinction based on differing degrees of human intervention is also not useful when considering how pests or weeds are a part of urban nature. Although humans may not have intervened much in the growth of weeds, it does not necessarily mean that they are perceived as natural. A more useful definition of urban nature may therefore be one based on human values. Indeed, in considering whether landscapes that have been influenced by humans to differing extents are a part of urban nature, ultimately comes down to human values. Although there are many people for whom the essence of nature is that which is uncontrolled (Minter 1993), others value landscapes that are the result of more intervention. What is considered as natural in urban areas is often based on personal beliefs. This suggests from the outset that close consultation with urban populations about their values concerning urban nature is of utmost importance.

In sum, all nature in urban areas has somehow been influenced by humans. Humans can be seen as linked to nature because (i) they are a part of nature, meaning what they intervene in can also be classed as natural and (ii) what is considered natural is based on different human values. The question still remains however of how nature is linked to humans? How does nature adapt to humans and urbanisation?

### **How is nature affected by/ adapts to urbanisation?**

An RSPB study shows that more and more wildlife is learning to adapt to a town or city environment. Mabey (1999) argues that once a species has learnt to tolerate the presence of man, he is 'plainly going to have an easier time'. Adapting to urbanisation means additional food sources and a new range of nesting territories. Some species of bird now even depend upon man for their nest sites, for example the swift and the house martin (RSPB). Other bird species, such as pigeons and sparrows, now have the town as their predominate habitat (Chinery and Teagle 1984). Pigeons scrounge most of their food from man and nest in tall buildings which act as rock faces with ledges for roosting (Gilbert 1989). Mabey (1999) argues that the 'most adaptable of all garden birds is without a doubt the blackbird'. They are twice as common in urban areas than in the countryside, they are happy to nest in holes in the walls or in the bends of rainwater pipes and have also become almost totally omnivorous. An increasing number of birds of prey are also being seen in our towns and cities (Urbio 1, 2002). For a peregrine for example, a wall is as good as a cliff face, and they are

often seen nesting on buildings and artificial man-made structures. Additionally, kestrels are regularly seen in central London, where they rest in a variety of places, including the window ledges of office blocks (Goode 1986).

Although it is argued that mammals have shown less adaptability than birds (Gilbert 1989), many mammals are still seen thriving in urban habitats. The garden for example, offers a habitat within which foxes can survive. Foxes do however tend to be confined to certain parts of the city, for example in privately owned residential properties, because they have very specific habitat requirements (Chinery and Teagle 1984). Although in the most suitable areas, urban fox densities may be up to 5 times those seen in the surrounding countryside (Chinery and Teagle 1984), each year up to 60% of a town fox population dies, with half of the deaths being caused by road casualties (Gilbert 1989). High densities of squirrels can also survive in urban habitats because of the additional food supplied by local residents (Chinery and Teagle 1984). Squirrels hunt through litter bins and take food put out for birds. Additionally, the hedgehog is predominately a suburban specialist (Gilbert 1989). They are widespread in gardens, allotments, parks and golf courses. Urban areas provide a wide range of sites for them to build both their summer and winter nests. The milder winter climate in urban areas means late born litters have more chance of surviving the winter (Chinery and Teagle 1984).

Concerning vegetation, one of the biggest debates in literature centres on the differing adaptability of native and exotic species. Evidence (Buton and Sparks 1976), would suggest that native tree species are often better adapted to local conditions than exotics, meaning they are much more supportive of other wildlife (Sheffield Parks Regeneration Strategy, SPRS 1993). Exotic species might be decorative, or won't clog the drains or cause a problem with the telephone wire, but the habitat created is generally sterile (Hough 1984). This needs to be considered since native flora and fauna are often eliminated in gardens and green spaces by exotic species which grow more quickly and are easier to care for (Stren et al 1992).

Since it has been broadly established what urban nature is, and how nature interacts with humans, it is important to examine how urban nature specifically relates to human health and well-being. This is because the functioning of nature in urban areas should be to maximise the benefits for human inhabitants. It is necessary to fully understand the significant relationship between nature and health in urban areas, so that appropriate action can be taken.

### **What aspects of urban nature contribute to a high quality urban environment?**

#### **What is the functioning of the natural in urban settings?**

Many studies, for example 'A Space for nature' (English Nature) have demonstrated that people need nature. With all the stresses and strains of urban living we feel better for it. As a nation we provide much evidence of our devotion to nature (National Urban Forestry Unit, NUFU). For example there are 15 million domestic gardens in Britain (NUFU) and some 33 million people make over 2.5 billion visits each year to urban green spaces, with this estimate considered to be on the low side (Department of Transport Local Government and the Regions, DTLR, 2002). Research suggests that nature is particularly important through its relationship to (i) psychological well-being, (ii) child development, (iii) physical health and (iv) the health and well-being of society and communities at large, although these groups are all interlinked.

#### **(i) Psychological well-being (mental health)**

There is much evidence available in towns and cities of people trying to connect with the natural world, eg through their gardens (Minter 1993). It is important to question why people try to connect with nature in this way. One prominent theory that explains the need to bond with nature is the biophilia hypothesis (Kellert and Wilson 1993). Biophilia is the term used by Edward Wilson to describe humans' innate affinity towards nature. He suggests this affinity for nature is inbuilt in our

genotype; we need nature to feel whole because it is in our genetic makeup. According to Wilson, 'humans have an innate sensitivity to and need for other living things'. This theory suggests that we need to be close to nature as it increases our well-being. Similarly, other authors like Thoreau saw the sense of the wild as being essential to the health of the human spirit (Minter 1993), thus necessitating a connection with nature.

A study by English Nature (a Space for Nature), which reviewed recent environmental psychology literature, suggests that there are two major mental health benefits that arise from contact with nature. The first is the *immediate* mental health benefits, which help with stress recovery (see work by Ulrich; English Nature report 533, 2003), and the second is the *longer term* psychological benefits, which help with restoration (see work by Kaplan and Kaplan, also in English Nature report 533). There is much evidence available to support both of these psychological benefits.

In terms of immediate mental health benefits, literature shows that stressed individuals often turn to the natural world for relief, with gardens being sanctuaries of peace (Minter 1993). Research also shows that trees and woodlands, and contact with nature in general, can have a calming effect, helping to reduce stress (see Forestry Commission's London Tree and Woodland Framework, LTWF). Additionally, the visual appreciation of natural scenes provides a means to stress recovery (O'Brien and Tabbush 2003). It has also been shown quite conclusively that hospital patients recover more quickly when they have a view of a garden (Minter 1993). The healing value of hospital gardens or of nature views from hospital windows is a theme present in much literature (see Moore and Ulrich PPG 17, 2002).

In terms of longer term mental health benefits, according to Stephen Kaplan (in O'Brien 2004), nature acts as a restorative environment, providing restoration from mental fatigue. Contact with nature may also help to reduce anger and aggression over the long term. The act of gardening itself is also argued to have enduring therapeutic benefits (Minter 1993). The responses of plants to us (eg when they grow successfully) can produce tremendous pleasure, particularly in those who feel isolated. Additionally, if you are in a mundane job, the garden is often the only place where you can express yourself truly and creatively. Other research (see Kuser 2000) supports this contention that actual involvement in tree planting has important benefits for people.

Alternative studies provide a more in depth understanding of how urban nature impacts on psychological well-being. Rhode and Kendle (1994) suggest that urban nature brings emotional benefits (by lowering stress and increasing happiness), cognitive benefits (by reducing mental fatigue) and behavioural benefits (by encouraging adventurous behaviour). Mostyn (in Johnston 1990) similarly suggests that contact with urban nature is beneficial to people as it provides an escape from the city, a peaceful retreat to repair emotions and it allows for intellectual learning.

Evidence therefore clearly suggests that contact with nature is important for well-being. However, all these benefits that nature brings to human well-being are applicable to nature both in the context of rural and urban settings. It can be seen however, that since there is more everyday contact with nature in rural areas, we are less concerned with the impacts on well-being of a lack of nature. The implications of less contact with nature in urban areas are however more significant. In a major study, Lewis and Booth (1994, English Nature 533) found that people living in built up areas with access to gardens or green open spaces had a lower prevalence of mental disorder than people in built up areas with no such access. Lack of access to nature in urban areas impacts on people's mental health: 'Green space clearly supports the mental well-being of those who can access and enjoy it' (Department of the Environment 1993).



types of social interactions through activities like recreation and picnicking. More (2002, in O'Brien and Tabbush 2003) argues that these are activities that strengthen social bonding. Conservation work, for example tree planting, can also provide people with an opportunity to get to know others in their locality.

In sum, it can be seen that nature in urban areas can have a profound effect on psychological well-being, child development, physical health and social health. But so far the discussion has centred on nature in general. Different aspects of urban nature affect human health and well-being in differing ways and to differing degrees depending on the individual. It is therefore important to look more closely at some examples of urban nature influencing health and well-being. The different characteristics of urban nature examined below are a selection, and vary themselves between different types (for example the differences between landscaped parks and more unmanaged parks). Additionally, sites differ throughout the course of a year. Part of the attractiveness of natural sites is often their dynamic nature (Gilbert 1989), with sites differing from season to season and from year to year through succession.

### Examples of urban nature influencing health and well-being

Open space accounts for around 30% of all land in urban areas in England (Dept of Environment 1993). A statement from the Office of the Deputy Prime Minister argues that, 'In the words of John Ruskin, we believe that "the measure of any great civilisation is its cities, and the measure of any city's greatness is to be found in the quality of its public spaces, its parks and its squares"'. The vital importance of urban green space in enhancing the quality of city life has also been recognised in the Urban Green Spaces Task Force reports and the Urban White Paper (2000). It is important however, to examine how different types of open space affect well-being in urban areas. This next section will concentrate specifically on the contribution that parks, gardens, trees, derelict land, wildlife and rivers make towards enhancing human health and well-being. Where appropriate, aspects of urban nature that are an environmental challenge will also be discussed, as will some of the ways in which the quality of the urban environment can be enhanced through improvements to urban nature.

### Parks

The popularity of parks in urban areas is demonstrated by the fact that on average 15 million people visit St James Park in London per year, and 10 million people visit Hyde Park (CPNM 1999). Parks are an essential element in creating liveable towns; the urban park is a place to refresh the human spirit in peaceful surroundings (CPNM 1999). The House of Commons Environment, Transport and Regional Affairs Committee (TRAC) stated that parks were a key feature in the renaissance of urban areas. They reported that parks have been instrumental in the regeneration of New York, Barcelona and Paris.

In order to have a positive effect on human health and well-being however, parks need to meet a number of criteria. Gilbert (1989) contends that to be successful, parks need to fulfil a number of uses: recreation, strolling, sitting, dog walking, visual delight and appreciation of nature. At present, mown grass containing scattered trees is the leading habitat in parks (Gilbert 1989), so it must be questioned whether a park can meet the needs of all of its diverse users in this way. TRAC additionally argues that for parks to enhance well-being, people need to feel safe. They suggest that making parks safe, and making them feel safe, must be a priority for local authorities. They also suggest that the Social Exclusion Unit should give a high priority to making parks attractive places where all the community can enjoy themselves.

## Gardens

England and Wales have an unusually high proportion of houses with private gardens (78%) (Gilbert 1989), which suggests that gardens and gardening do have a positive effect on human well-being. Chinery and Teagle (1984) argue that it is our suburban gardens, with their amazing diversity of habitat, that contribute most to the variety of our town wildlife. The diversity of mini habitats in the garden ecosystem is provided by lawns, rockeries, walls, flower beds, ponds, fences, sheds, paths, cultivated ground and compost heaps. Gardens are not single habitats, but a mosaic of different habitats. The variety in the wildlife which is supported by this mosaic is vital to human well-being. An example of the variety is evidenced in the fact that 'suburban gardens are believed to support the highest density of breeding birds of any habitat in Britain' (Gilbert 1989). The value of the garden is also enhanced by the food that people put out for wildlife. A study in New York (Brown et al 1979 in Kuser 2000) demonstrated that 73% of residents showed an interest in attracting wildlife to their backyard. This shows that contact with nature is important for well-being. Human health and well-being could perhaps therefore be strengthened if nondescript green spaces were made into tenant's gardens (Stren et al 1992). The popularity of allotments in the UK for example (there are now some 30,000 occupied allotments on 12,000 hectares of land; PPG 17) suggests that gardening on your own plot of land is enjoyable since it provides an opportunity for regular contact with nature.

## Trees

The bulk of vegetation in towns is planted ornamental species like forest trees (Gilbert 1989). Ash, elm, and sycamore are all as common in urban areas as in the countryside. Mabey (1999) argues that it is trees above all else that are needed to break up the hard edged texture of urban living. Trees have many varied advantages for human health and well-being. One fully grown beech tree will for example consume 2.4kg of CO<sub>2</sub> and 20 trees will offset the pollution effects of one car driven for 60 miles (SPRS 1993) (which both help with atmospheric pollution abatement). In terms of absorbing pollutants however, what matters is not how many trees a city has, but rather how much foliage these trees have (Krieps 1989). An oak tree will also for example support up to 280 species of insect on which small birds and mammals can feed (SPRS 1993), which adds to the varied diversity of wildlife needed for well-being. Trees also provide a sense of place and permanence in areas that are rapidly changing (Countryside Commission 1993) and they additionally signal the changes in the natural world (Mabey 1999) (eg changing seasons).

There are currently seven million trees in Greater London, a quarter of which are in woodlands that occupy 8% of London's land area (forestry Commission 2004). Although this is a significant number, and all these trees need to be carefully managed, 80% of all urban trees are in fact likely to be found on land in private ownership (Dept of Environment 1993), meaning access to the benefits of these trees might be restricted. The importance of street trees in enhancing well-being for the average urban citizen should not therefore be underestimated (LTWF). People in London will come into contact with street trees more often than trees planted in other locations. Street trees are particularly beneficial as they enhance the quality of life for people living and working in urban areas by acting as a relief from the stresses of modern urban living.

## Derelict land

The effectiveness of wilderness in contributing to 'spiritually beneficial recreation and leisure experiences' is well documented (see PPG 17). It is often assumed however that this wilderness, and urban nature in general, can only be found in sites designated for the purpose of nature. But this is not the case. Derelict land and brownfield sites often support a wealth of wildlife that enhances well-being (Urbio, 3, 2002). Brownfield sites do have real wildlife value and distinctive natural worth (Urbio, 2, 2002). For example the black redstart, one of Britain's rarest birds, is an urban brown-field specialist and an estimated 12-15% of all 'nationally rare' and 'nationally scarce' insects

are recorded from brownfield sites. The contribution that nature on derelict sites makes towards well-being is of particular importance because these sites are often the first to be built on during development. The value of their underrated nature must therefore be fully expressed in order to be protected (Urbio, 2, 2002).

Case-study of preserving nature on a former derelict site (taken from English Nature, Urbio, 1, 2002)

A badly contaminated brownfield site at Padiham, on the outskirts of Burnley, has been developed into a business park in 73 acres of wildflower and landscaped grounds. By preserving the original grounds, some of the interesting flora and fauna that had colonised the site has been retained.

Wildlife

It is unquestionable that animals contribute to recreation and their presence gives aesthetic pleasure and enhances the quality of life (Wiesner 1992). However, animals can also act as reservoirs of infectious disease agents. This means that although it is important to preserve wildlife, these animals need to be maintained in healthy conditions for human well-being. Additionally, wildlife may be valued very differently by different people. For example, although a survey of Britain's city dwellers (see Chinery and Teagle 1984) indicates that the hedgehog is our most popular urban mammal, for some urban residents this creature is a pest. Similarly whilst some inhabitants may indeed try to encourage wildlife such as foxes to their gardens, others fear that foxes will spread rabies in the UK, as has occurred in other parts of Europe (Gilbert 1989). When trying to encourage urban wildlife for the well-being of some therefore, it is important to take into account the values and concerns of others, in order to not have a detrimental effect on their well-being.

Rivers

So long as water pollution is not too oppressive, rivers can be the richest of all urban wildlife sites (Gilbert 1989), and can contribute immensely to well-being. This is best represented through a case study:

Taken from English Nature Journal Urbio, 3, 2002:

Three years ago, the river in Wandle Park in south London was a sad and neglected channel. It flowed between concrete banks, polluted and ignored. But the river was given a glorious second chance. It now swings between natural banks that are covered with flowering plants and crossed by beautiful bridges. Alongside, there are safe play areas for children and new footpaths. The river is now a special place for local people and a valuable asset for the local community.

This demonstrates the impact a restored river can have on human well-being. A restored river gives local people an accessible, high-quality natural place and can provide opportunities for recreation and relaxation; 'It might just make us happier and healthier' (Urbio, 3, 2002).

**2/ What is a necessary 'level' of nature to provide, so that all urban residents can access it?**

The significance of urban nature for human health and well-being and how different parts of urban nature relate to well being is well acknowledged in literature and government rhetoric (see ODP and Urban White Paper 2000), even if there is a lack of convincing empirical medical evidence to support the relationship (PPG 17). Since nature in urban areas is accepted to be significant however,

issues of how all urban residents are going to access this nature must be considered. Justification of equal access to urban nature can be based on issues of environmental justice, ie the right of all urban inhabitants to have access to urban nature because its benefits are critical to their well-being.

Nature in urban areas has the potential to be socially inclusive because it is free. English Nature (A Space for Nature) believes that everyday contact with nature is important for well-being and quality of life, and that all people should be able to enjoy this contact without having to make any special effort or journey to do so. But there exist barriers to the access of urban nature that must be overcome before it can be enjoyed by all residents. These barriers mainly fall into two categories, physical barriers and social barriers.

### Physical barriers

English Nature (Report 153) suggests that physical constraints to accessing urban nature include distance from the home, severance factors such as roads, and the degree of independent mobility enjoyed by particular groups of adults and children. The Urban Green Spaces Task Force suggests that physical access issues relate not only to problems of the proximity of urban green spaces, but also issues of getting in to these spaces and ease of moving around within them. These access issues are of concern particularly to the elderly and to people with disabilities.

It is important that sites of urban nature are close to residential areas. In many cases people will only travel short distances to green space, which is particularly true of the distances that children (especially unaccompanied) travel. English Nature suggests that physical accessibility is greatly affected by how far different groupings of adults or children are able to, or are allowed to walk by themselves. It is also affected by availability of accessible transport to sites. Research in Kirby (see Urbio, 6, 2004) showed that 1/3 of residents living in some parts did not have access to a car. Nature areas therefore need to be near to where people live, or be serviced by regular public transport. This is supported by the Forestry Commission (LTWF) who recommend that public transport and cycling/walking routes to open areas need to be improved, especially for people with disabilities.

### Social barriers

The Urban Green Spaces Task Force identifies 5 main social barriers deterring people from using urban green spaces: (i) poor condition of facilities (ii) other undesirable users (iii) concerns about dogs and dog mess (iv) safety and other psychological issues and (v) environmental quality issues such as litter, graffiti and vandalism. Issues of safety are among the most prevalent mentioned in much other research. For example, one of the social factors that constrains access to urban nature identified by English Nature (report 153) is the fear of crime associated with public spaces and this effect on people's willingness to use natural places perceived to be 'risky'. Safety issues therefore involve not just how safe people feel travelling to green spaces, but how safe they feel wandering around. There is also a fear of nature associated with unkept wilderness, since people are anxious that undesirables might be lurking in the undergrowth (Gilbert 1989). Women in particular fear open spaces in this way and they can believe that risks to personal safety are too great to walk in green spaces unaccompanied (Urbio, 6, 2004). Neglected or poorly maintained environments are especially seen as barriers to accessing the outdoors. The last thing that people want is a piece of open space that looks untidy. Overgrown shrubberies and unkept lawns also repel visitors (CPNM 1999).

Another prevalent barrier cited in literature is the fact that disproportionately low number of black and ethnic minority groups visit parks and nature reserves (Urbio, 6, 2004). There is a need to make open spaces attractive to different sectors of the community (LTWF). There is additionally a need to improve accessibility for people from areas of high deprivation and the unemployed. As Jacky Ford suggests (See Urbio, 6, 2004), the worst thing you can do is create a nature reserve or wildlife area and then put a fence round it. It puts people off as they feel they don't have a right to be there.

## Overcoming the barriers

As suggested by the Urban Green Spaces Task Force, most of the barriers to access are resource issues which relate to the location, accessibility or environmental quality of urban green spaces. They could therefore be overcome if the planners, designers and managers of the spaces addressed them satisfactorily. What is needed is not just the creation of new areas of green space, but making existing ones better and more accessible. As Dr Bob Farmer stated, when talking specifically about the woodlands throughout Wales, there is significant potential for increasing woodland access as the woods are 'nowhere near saturation in terms of visits' (O'Brien and Tabbush 2003). But saying this, some new green spaces will need to be created so that too much pressure is not put on urban nature, making it unsustainable for future generations. This is what happened in the Victorian era, when people enthusiastically crowded into parks to make city living more tolerable, but since few parks were provided in areas of highest density and greatest need, the parks became too overcrowded (Nicholson-Lord 1987). Below are some suggestions from literature on how to overcome physical and social barriers to accessing urban nature.

### Overcoming physical barriers

Sociological research (CPNM 1999) indicates that people feel that a green space is nearby if it is found 5 minutes walking distance away. English Nature recommends that people living in towns and cities should have an accessible natural green space less than 300m from home. They also recommend that a statutory Local Nature Reserve should be provided at a minimum level of 1 hectare per thousand population; that there should be at least one accessible 20 hectare site within 2km of home; one accessible 100 hectare site within 5km of home, and one accessible 500 hectare site within 10km of home. The Forestry Commission (see O'Brien and Tabbush 2003) proposes that nature should be brought into places where people live, work and go to school, as these are the most accessible places. Following these recommendations for the provision of nearby urban nature would help to overcome many of the barriers people face in accessing open spaces.

### Overcoming social barriers

One strategy for making natural areas socially more accessible is to make them feel safer (English Nature Report 153). This involves improving sightlines (eg getting rid of overgrown shrubbery), reducing hiding and entrapment spots and improving lighting. It is also clear from a number of studies (especially ones from English Nature) that one of the most successful ways to encourage use is through the presence of more people on site (eg rangers or site wardens in distinctive uniforms). There is also a need for more women rangers and rangers from ethnic minorities. Additionally, fears are allayed if local people are involved in site management<sup>2a</sup>.

One way that safety issues can be overcome for women who feel threatened in green spaces is demonstrated in the following case-study.

#### Taken from English Nature, Urbio, 6, 2004

Research by Milton Keynes Parks Trust revealed that most women were not prepared to go to parks alone – even though the odds of being attacked were around 2 million to one. Women said they would like to walk in the parks but they wanted someone to go with. In response, the Trust established a walking network for women. About 120 women joined the network and up to 40 attended some of the walks.

In addressing safety issues however, CABE Space (launched by the Commission for Architecture and the Built Environment (CABE) as part of the government's sustainable communities initiative) argues that if our local authorities continue to adopt a 'safety first' approach, our public open spaces will become boring (Urbio 6, 2004). It fears that many of the features which we hold most dear

about great parks and public spaces could disappear because they are classified as too risky. But tackling the problem of safety does not necessarily have to be incompatible with the maintenance of a natural setting (Wheater 1999). There are solutions that both reduce the risk of fear and maintain an element of wildness. For example, ground visibility could be increased, and naturalness retained, by the reduction in shrub layers and the raising of tree canopies. Additionally, if more ‘tame’ design features are not welcomed by all users, the choice of visiting more natural areas elsewhere in a site could be provided (see Kendle and Forbes 1997), without infringing on those who have anxieties. Variety in the design of open space might be the answer to fulfilling people’s ambivalent feelings and complex reactions towards nature (English Nature Science, 22), especially the different requirements which children and adults have from open space (English Nature Report 153).

### Environmental Justice: the right of all urban inhabitants to access the benefits of urban nature.

Overcoming the physical and social barriers to accessing urban nature is particularly important in areas where at present, access is poor. Because experiencing the natural environment is so vital to the health and well-being of urban inhabitants, all residents should have a basic right of access to nature areas. This right is however denied to a greater extent in certain areas where the availability of urban nature is restricted. These areas tend to be where poorer urban residents live.

New trees and woodlands are most needed where they can provide people with access to nature and natural landscapes in areas presently lacking in such access (LTWF). Poor people and disadvantaged communities often live in environments which exact a toll on their well-being (Worpole 2000). A number of factors combine to make some urban areas healthier than others and amongst these is access to green space (Tzoulas). Deprived areas usually have limited access to a local green space and if there is one, it is likely that it will be poorly maintained and have negative associations.

Additionally, physical inactivity (which is detrimental to physical health) is a greater problem among certain groups, such as some ethnic minority communities and people in rented council accommodation (O’Brien and Tabbush 2003). These are often the groups with least available access to natural space. For low-income families, woodland use provides a low cost opportunity for outdoor exercise (a welcome alternative to the expense of toys or theme parks for example).

### **3/ Management: How will the necessary provision of urban nature be realised to maximise benefits to human health and well-being?**

Improving access to urban areas will not only involve enhancing access routes, (such as public transport) but will also involve the extra provision of urban nature. As discussed above, urban nature is greatly varied and different people attach various values to it. This means that when providing accessible nature, questions arise of what form/type this nature should take. It is important to enhance the health and well-being of urban residents without having detrimental effects on people with different values. Providing urban nature that is 5 minutes away will not in itself ensure that residents of an area will use the site. In order to provide a safe environment where all people want to spend their time, consultation with local residents will be necessary. This is true in all stages of management (including planning and design).

This all assumes that management is desirable however, which may not necessarily be the case. Before discussing appropriate management possibilities therefore, it is important to consider whether management of urban nature is always necessary. Should there be some spaces for unmanaged nature in urban areas?

## Unmanaged nature

The primary concern in deciding whether to manage nature areas in urban settings should be the desires of local residents. A major component of environmental justice should be equal access to the decision making process, or in other words the right of every citizen to decide upon how they want urban nature areas to be managed. Whereas an environmentalist may be concerned with the protection of biodiversity, a manager of urban nature must be concerned with what most enhances human health and well-being, while at the same time maximising nature conservation so that future generations can also enjoy it. Managers must therefore be in close contact with both professional environmentalists and representatives from all residential communities. As the Living Cities (2003) study shows, local people are already connected to nature in diverse ways that are poorly appreciated. The ecological knowledge of these people should be made to count when making decisions about the spaces of the urban commons.

As seen above, perceptions of what is natural in urban settings are often based on the apparent degree of human intervention. From an environmentalist's point of view, natural landscapes with the greatest biodiversity and conservation value may also be those which have been subjected to the least human intervention. Unkept landscapes have a far greater floral and faunal diversity than the intensely managed lawn or the city park (Hough 1984). It can therefore be seen that the values of environmentalists and local city residents may not be in opposition. Residents find enjoyment value in natural areas that have minimal human interference, and environmentalists find ecological value in unkept areas, where natural succession has been allowed to take its course.

If more natural and unkept landscapes are valued therefore, then there would appear to be a strong case for leaving some unmanaged areas of urban nature. There is much evidence to substantiate this case. The National Urban Forestry Unit, which aims to improve the quality of urban living by helping to create a more tree-rich urban environment, suggests that whilst the biodiversity potential of the urban forest can be enhanced by management and intervention, woods left unmanaged will equally develop a value of their own. There may be benefits that urban wildlife can offer, that differ from nature in a more ornamental or formal setting (Kendle and Forbes 1997). A very great part of the pleasure that comes from urban wildlife comes from its vitality and unpredictability. Some natural settings can inspire exploratory and adventurous behaviour, which can be of great developmental and health importance. Other studies (see Hough 1984) suggest that diversity is necessary to the health and quality of urban life and that interest in nature is increased with complexity and visual richness (Walsh et al 2000).

Literature (Johnston 1990) also suggests that people search for variety and enjoy more naturalistic landscapes rather than 'the boring institutionalised landscapes of traditional parks'. People like to spend time in 'places containing some form of natural features, particularly more primitive, ungroomed nature' Barker (1986 in Johnston 1990). Landscapes that arise often accidentally through neglect can additionally be appreciated (Gilbert 1989). For example in the 1970s, the Ministry of Transport did not have enough money to mow motorway verges. This supposed neglect produced what are now highly valued grasslands. Furthermore, small areas of semi-wildness allow city dwellers the pleasure of following the changing seasons and provide opportunities to study nature first hand (Carr and Lane 1993). Children in particular often value things which adults see differently (English Nature). There is a real risk that children will lose what they need for mental, physical and social development when places are tidied up by adults. 'Left over' pockets of land are also important for children's play (Box and Harrison 1993). Because these areas may not be appreciated and are seldom included in official open space inventories however, they are likely to be developed on.

Despite these arguments that show how well-being is affected by more unkept nature, much of the nature areas in urban settings are more formally managed. As evidence suggests, many of the best brown-fields are either being lost to development or are being 'greened' by well-being but ill-conceived landscaping (Urbio, 2, 2002); landscaping which results in 'mundane utility grassland'.

As Chinery and Teagle (1984) argue, all too many town parks consist mainly of what has been described as 'urban savannah', flat expanses of mown grass with isolated standard trees. Too many parks have never incorporated naturalistic landscapes to complement the formal areas (Box and Harrison 1993). Mabey (1999) suggests that 'stand at any point in the park and your view is much the same'. He goes on to argue that there is a need for life reflecting qualities in a park, but they can be emasculated by the pruning knife and the mowing machine. A park managed like this is 'little more than an estate, where the building materials just happen to be living'.

Literature (see *The Nature of Cities*, 1999) contends that this denial of natural landscapes is partly due to the fact that we are bombarded with the notion that packaged nature is an acceptable substitute for the real thing. This particular kind of nature found in cities is however regarded as 'denatured nature'. It is a planned and managed territory within which little wildness remains. Another explanation for why formal landscaping has generally been considered the most appropriate form of management for open space in the built environment (Carr and Lane 1993) is that the presence of wild areas where vegetation is allowed to develop naturally is often perceived as a sign of neglect. This perception extends to private urban nature areas as well. In gardens, much of the excessive tidying is a result of social convention; unkept shrubbery is a sign of un-neighbourliness (Mabey 1999). Additionally, evidence shows that open space which is managed is more intensively used than that which is not (Fitzpatrick 1987, in Johnston 1990). If footpath quality is improved for example, more visitors are attracted.

Many people are brought up to expect a well-kept city landscape (Gilbert 1989). The nurtured 'pedigree' landscape of lawns and flowerbeds has a high value in the public mind as an expression of care, aesthetic value and civic spirit (Hough 1984). Natural landscapes are often regarded as derelict wasteland in need of rehabilitation. This is exacerbated by the fact that urban wildlife sites often attract rubbish tipping (Gilbert 1989) and 'as natural spaces are among the few private spaces left where we are away from the gaze of closed-circuit television, it is not difficult to get the impression that they are places to go for illicit activities, including drugtaking' (O'Brien and Tabbush 2003). The psychological benefits of wilderness and complexity will not be experienced by people where the natural settings are perceived as threatening rather than inviting (Kendle and Forbes 1997). Also, some people simply don't see beauty in wild landscapes – for example because there may be a limited amount of colour.

It can therefore be seen that there is a tension between the values of different urban residents. There are those who find pleasure in the variety and diversity that results from unkept and unmanaged nature, whilst there are also those who find the same landscapes overgrown and threatening. It is possible to strike a balance between the two opposing values however. A more natural landscape does not necessarily need to be uncared for or unmanaged in all areas. Practical elements like paths and the areas surrounding them could be well kept, whereas nature further from the paths could be more untouched. As Kaplan et al (1998, in PPG 17) contend, natural settings need not be remote wildlands.

Perceived dangers should not be used as arguments to banish wild and natural landscapes from urban areas (Box and Harrison 1993). Such concerns should be acknowledged and taken into account in the design and management of natural greenspaces. Both public access and the maintenance of nature conservation value can be achieved. A wildlife zone with minimum maintenance (where natural selection could take its course) could be furthest away from buildings (Gilbert 1989), so people do not feel so threatened. As Moggridge (in CPNM 1999) contends, there needs to be a balance between wilderness and practicality. For example in Hyde Park, there will always need to be some mown grass and hard paths as there are so many visitors.

There are examples of the successful establishment of more natural and unkept spaces in urban areas. For example in the Netherlands, it has long been a policy to design semi-wild areas into city landscapes (Carr and Lane 1993). Every major park in its large cities contains wildlife sanctuaries and interpretive centres where animals and birds may be observed and studied in their particular

habitats (Hough 1984). Setting aside areas as wildlife reserves would not only enhance many city parks but would reduce maintenance costs as well. Hampstead Heath is another good example of what an urban park could be (Mabey 1999). 'Less than 20 yards off the road and you are knee high in meadow and rye grass' and the feeling of wildness envelopes you'.

In sum, it can be seen that a mix of intensely managed landscapes and areas of more unkept wilderness would be appropriate features of urban nature. This means that some areas within urban nature sites might most appropriately be left unmanaged, so that visitors have the choice of going to these sites. It should be noted however, that more natural and wild nature areas are not always associated with less management. Although leaving a plot alone for natural succession to take place involves little management, other more unkept and wild looking landscapes may actually require much maintenance. A specific labour force for example may be needed in more ecological management (Kendle and Forbes 1997) (for example the expert labour required in the mowing regimes of some natural sites). It should also not be assumed that a transition from a formal to a naturalistic landscape style will have lower costs. The added advantage of requiring some sort of management is that communities can be involved, which, as will be seen below, brings more benefits than just the upkeep of an environment.

Since some form of management is often necessary, it is important to question what form that management should take, especially with regard to the role of communities and partnerships in the management process. It is firstly necessary to briefly examine how urban nature areas are discussed in government rhetoric, as this will influence the guidelines within which they should be managed.

### **Government rhetoric**

The Urban Green Spaces Task Force is a body set up to advise the government on improving the quality of urban parks, play areas and green spaces. In 1998, the Urban Task Force, under Lord Rogers stated that 'We believe that cities should be well designed, be more compact and connected ... allowing people to live, work and enjoy themselves at close quarters.' The rationale in this manifesto for the compact city is that increased densities of urban development will help protect the natural environment in the countryside by redirecting development away from greenfield sites. The government announced in its Urban White Paper in 2000, that 'we have also been allowing too many new houses to be built on greenfield sites...we have therefore set a national target that by 2008, 60% of new housing should be built on brownfield land'. Box and Harrison (1993) suggest that the prospect of compact city forms will lead to the loss of natural greenspaces in urban places, rather than their conservation. Research on 'Living Cities' (2003) argues that in this proposal, 'the world of creatures and plants as active agents in the making of environments remains firmly outside the city limits and those feral spaces in the city that most sustain them are cast as 'wastelands' ripe for development'. The proposal conceptualises urban areas as built environments, rather than as living cities. Based on this, the prospects for the treatment of urban nature appear quite bleak.

Additionally, the report of the Urban Green Spaces Taskforce 'Green Spaces, Better Places' (2001) has been criticised by English Nature (Urbio, 3, 2002) for not breaking out of the 'parks and playing fields' box. It has been criticised for not taking a holistic enough view of the variety of urban open spaces and their potential contributions to increasing the attractiveness of towns and cities. Additionally, no mention was made in the report of the direct contribution of urban green spaces to people's well-being (Urbio, 1, 2002).

However, in the past 6 months the government has announced an £89 million Liveability Fund for innovative projects in public parks (Urbio, 4, 2003). Additionally it has established CABI Space (see above) to promote good design and improve the quality of public open space. The potential for the successful conservation and management of urban nature is therefore enhanced.

## **Examples of successful management of nature in urban areas**

The most frequently mentioned characteristics of the ideal urban green space are vegetation, water, play opportunities, comforts (seats, toilets, shelters), good access, sport and events (Urban Green Spaces Task Force). Research (CPNM 1999) suggests that urban nature must also be adaptive to new needs and new demands, for example by providing cafes, places for skate boarding and by adjusting hours to changed patterns of work. More naturalistic sites however, where the wildlife itself is the one of the defining characteristics, are also extremely successful, especially with children (with success being measured in terms of how popular a site is). If these sites are perceived to be safe environments, their more unkept and wild landscapes can have a positive effect on the well-being of many residents. The examples below demonstrate the success of two such sites on old industrial areas that would otherwise not enhance well-being. Because the nature reserves were successful in built-up inner urban areas, it is likely that such sites could be replicated elsewhere.

### **William Curtis Ecological Park:**

The William Curtis Ecological Park was created in 1977 to show how some of London's large stock of unused land might economically be put to creative use (Hough 1984). The park was built on the site of an old lorry park alongside the River Thames (Shirley 1996). Up to 15,000 visitors pa, many from local schools, used the site until it was redeveloped (Wheater 1999). Although temporary, the park demonstrated the range of wildlife which could live in well-managed open spaces surrounded by otherwise fairly inhospitable urban areas. 348 different kinds of plant grew there, of which 205 arrived of their own accord. 31 kinds of bird were recorded including heron (Shirley 1996). The success of this park has provided ample evidence that urban man's need for contact with nature can be met by study in the inner city (Hough 1984).

### **Camley Street Natural Park: (Taken from Johnston 1990)**

Camley Street Natural Park is a short walk from Kings Cross station; located on a former derelict coal yard in an industrial area on the banks of the regents canal. Interest in the site started when the Camden wildlife group found that the area had been colonised by a remarkable array of wild plants. The park was opened in 1985 and was welcomed as a local nature reserve in 1986. The London wildlife Trust management committee now oversees most aspects of running the park; but volunteers from the Camley street support group also have an active role in many aspects of running the park (which demonstrates involvement of the local community). A project manager and a project officer are employed by the Trust and are based on site in the nature centre (which will increase the perception of a safe environment). The site is 0.8 hectares and includes a pond, a meadow and a woodland. Around 10,000 school children visit the site each year.

## **Community Involvement in Management**

Consultation with communities is necessary in order to deliver the most valued form of urban nature to the majority of local residents. Community involvement is therefore one of the most important components of the management of nature sites. However, the specific way in which the community is involved is critical for successful management, and there are some problems associated with community involvement. It must therefore be examined in some depth. Involving communities extends further beyond issues of environmental justice (ie every citizen having the right to participate in the decision-making process) it also brings benefits to the sites community groups are working on (and hence enhances well-being), and to the communities themselves.

The greatest challenge in management is ensuring that the needs of the users of urban nature sites are addressed (Kendle and Forbes 1997). An important dimension of this is the need to allow local people to participate in the management of sites. The main objective of establishing a nature area is to provide local people with a facility that they will use and enjoy (Johnston 1990). Community consultation is one way to discover what local people want. Engaging residents can mean sites respond to specific localised needs and opportunities (Kendle and Forbes 1997) and that the appropriate design of sites is achieved. Community involvement in urban green spaces can lead to increased use, enhancement of quality and richness of experience, and in particular, to ensuring that facilities are suited to local needs (Urban Green Spaces Task Force).

Urban green spaces should not be led by outside expertise (Living Cities). It cannot be assumed that values held elsewhere will be shared by community groups tending to a site. Although environmental groups are often clear about what they want to achieve, they need to start from the position of the communities they are working with (Urbio, 6, 2004). There is wide recognition that city residents are vital to the success of urban green space renewal (Living Cities). 'In order to foster a diverse and valued range of urban green spaces it is essential to engage the energies and enthusiasms of city residents'. There is a growing realisation that there is a real knowledge and skills base that exists beyond the professional sector.

In order to create and manage an urban nature site that best enhances the well-being of its users, the users themselves will have to be involved. Involvement in such a way brings with it added benefits beyond the establishment of an appropriate site. When local people become involved in management it strengthens a sense of community (Carr and Lane 1993) and enhances social relationships within the communities. As Worpole (2000) suggests, there have been more successes in community development in recent years through environmentally based projects, than there have been through other large scale capital spending programmes. Increasing a local sense of ownership, and promoting communication and understanding between residents are also some advantages of community involvement (Urban Green Spaces Task Force). The processes of working together and creating a strong participatory community perhaps matter more than the end product (Kendle and Forbes 1997). Additionally, if someone has hands-on involvement or a sense of ownership of a particular area their enjoyment may increase further (O'Brien 2004). Involvement in woodland activities for example can improve people's sense of worth and self-esteem as well as enabling them to learn new skills and meet new people. Voluntary citizen action may also be one way of meeting the cost of making urban green spaces liveable (Living Cities).

Below are two examples of the benefits that involving communities in the management of urban nature sites can bring.

From ODPM, Living Places (2002)

The community was a key partner in the development of Clarefield Park in the London Borough of Barnet. The council worked in partnership with local people in planning the development of the derelict land near Brent Cross Shopping Centre. The involvement of a range of local people from the beginning has helped to ensure the park meets the needs of all users, developed a greater sense of local ownership, and helped to build relations between different members of the community. The park is now an attractive, accessible and well-used green space with a range of facilities for young people, families and the elderly.

### **Involving communities in tree planting:**

#### From Department of the Environment (1993)

Trees have generally fared better when local people have been involved in their planning, planting and long-term care. However, most decisions on tree planting and management appear to address short-term needs only. There is also a need to consider long-term maintenance. 85% of community and volunteer groups interviewed in a study for example undertook tree planting, compared with only 53% involved in maintenance. It is harder to motivate the involvement of people in urban areas compared with rural, to protect existing trees, because the population is more transient and there is less feeling of belonging to a community. Despite this close consultation with local communities over tree management has been found to be vital.

#### From Countryside Commission (1993):

Trees provide a focus for community activities. Involvement widens the sense of ownership of all trees. Community involvement is an important way to raise awareness of the benefits of trees. But there is a need to maintain trees after planting; trees die needlessly through lack of care.

Although 'DIY culture' is essential to urban green spaces, it is not enough on its own (Living Cities). There is a need for clear material, financial and institutional support procedures. 'We shouldn't expect too much from community groups' (Kendle and Forbes 1997). The means by which organisations engage cannot be solely bottom-up, expecting all the resources and expertise to come from immediate surroundings, especially since there is a high turnover of residents in a community (Living Cities). A seminar on community involvement (Millward 1983) questions whether it is reasonable to expect communities to commit themselves to the long-term maintenance and fund-raising that is required in managing a site. Evidence shows that projects can fail if professional input is withdrawn, for example Meanwhile Gardens in London that fell back into dereliction. However, although being able to secure necessary support is vital to urban green spaces, it can also threaten the commitment and enthusiasms of community groups (Living Cities). Local residents for example become angry with formal procedures if they spend all of their time filling in forms rather than out there enjoying nature. The ways in which organisations engage with groups is therefore crucial to the success of urban green spaces. An appropriate balance is needed between professional and community involvement. To sustain enthusiasm once a site is established, it is important to keep the community involved but not to demand too much from them (Johnston 1990). Although well-being and self-esteem will be uplifted if a community project is a success, there will be disillusionment if the project fails (Kendle and Forbes 1997). It is therefore necessary for community efforts to be appropriately supported.

It must finally be considered that there are problems in defining what a community is (Living Cities). Involving the local community is more complicated than involving a selection of local residents. Within the local population there may exist several community groups with different values about urban nature. It is important not to exclude any of these groups or favour some over others. If representatives from only one community group are involved, the benefits to this group of enhanced urban nature may be great, but other groups may be excluded from the site. It is therefore necessary to welcome all groups who have interests in a site, before planning or management progress gets underway.

## **Partnerships in Management**

It can be seen that involving communities in management not only directly enhances well-being through an improved environment, but also indirectly brings about other social benefits such as strengthened local relationships. Improvements to the natural environment in urban areas can therefore result in the same social benefits that other urban organisations are trying to achieve. It therefore makes sense that the managers of urban nature areas form partnerships with these organisations that have the shared agenda of maximising health and well-being (for both individuals and society). It has already been demonstrated that urban nature can deliver physical health benefits through encouraging outdoor exercise and through gardening, so it would seem sensible if urban health organisations had more contact and associations with urban nature managers.

There are several other examples which demonstrate the possibility for links between different organisations and interests. With regard to improving access for specific groups to urban nature for example, links could be made with social inclusion and community development groups, who are also working towards improving individual and community health (O'Brien 2004). James Friel<sup>2c</sup> for example suggests that managing a park addresses many of the health and well-being issues that BME (Black and Minority Ethnic) communities are also trying to address. As identified by the ODPM in 2002, good parks and green spaces are 'vital for a wide range of government priorities, such as regeneration, renewal... supporting healthy living, fostering neighbourhood pride and community cohesion'. It would therefore be appropriate to work together with organisations who are also trying to meet these priorities. Effective partnership working has been proven to achieve results that better meet users' needs and increase the sense of local ownership (ODPM 2002). Partnership working also makes more effective use of resources, facilitates the sharing of expertise and skills and can help to meet a range of community priorities.

The government's proposals on sustainable communities include the commitment (mentioned above) to introduce a new £89 million Liveability Fund to 'support significant local authority projects to improve parks and public spaces' (ODPM Liveability Fund). One of the objectives of the scheme is to encourage better use of funding available to local authorities for local environment management through closer integration with complementary programmes and initiatives, such as education, sport, health, regeneration and renewal programmes and local partnerships. Partnerships can be cost-effective in this way because organisations with shared agendas can pool resources. The possibility of pooling resources should not however be used as a justification to cut direct funding to urban environment projects.

Johnston (1990) suggests that partnerships between local authorities, local residents and voluntary organisations might in many cases be the most satisfactory way to run a nature area. Each type of organisation has particular skills and resources to offer. The local authority should be the enabler and should help with professional assistance, materials and grant-aid. Voluntary organisations are alternatively well placed to get local people involved.

In sum, it can be seen that involving the community, and forming partnerships with similarly driven organisations, can be beneficial to the management of urban nature sites. It is important however to look at how urban nature sites should play out on the ground. How should they be 'woven into the fabric of the city' (Sabloff 2000) and what should the sites themselves look like? The planning of urban nature will therefore briefly be examined.

## **Planning**

Planning the location of urban nature sites is particularly important in order that all urban inhabitants can have equal access to natural areas. Green corridors are one possibility for increasing access to urban nature, that have been much discussed in literature. Green corridors are essentially a means by which to sew together the green areas of the city (CPNM 1999). They are natural areas (for example rivers or disused railway lines) that connect urban nature sites throughout a location. They not only connect nature sites together however, but also connect people to nature, through an accessible, safe and attractive way. Paths for example may have a role to play in linking people with their local environment (Urbio, 2, 2002). English Nature (Report 256) suggests that multi-functional green networks could have 'the potential to achieve the minimum distance target for accessible green space in a sensible, cost-effective way and link smaller sites with major nodes', such as town parks and local nature reserves. The district council of Leicester (the first environmental city in Britain) (Moughtin 1996), adopted a city wide ecology strategy which aimed to develop a network of greenways and natural habitats. The strategy includes the full range of green space in the city, such as private gardens, canals, and railway lines.

Green corridors have additional benefits beyond improving access to urban nature. They are themselves aesthetically pleasing and hence add to well-being, but it has also been suggested that they can improve the biodiversity of other nature areas. It has been argued in Leicester that establishing a green network is import to secure biodiversity and a sustainable local ecology (Moughtin 1996). It should be noted however that other evidence suggests that there is no relationship between overall plant diversity of green sites and the nearness of green corridors (Urbio, 2, 2002). Despite this, literature (Millward 1983) suggests that a continuous network of urban nature (from streets to parks to regional green belts) should be the goal of all future planning and development efforts.

Planning is not only concerned with the design of urban nature within the city however, but also the design of urban nature sites themselves. Below is a selection from literature suggesting creative examples of what urban nature sites could look like.

### **Creative ways to plan urban nature:**

- \* Sports pitches and other extensive areas of green are sometimes an underused open space that have little ecological value (CPNM 1999). They could be planted up to enhance their significance as wildlife habitats and could even be turned into super allotments, like the flower and vegetable gardens in German cities.
- \* Green roofs: a new generation of green roofs could help to conserve biodiversity in towns and cities (Urbio, 3, 2002). In many parts of Austria, Germany and Switzerland, it is official planning policy to insist on 'green' eco-roofs for any new flat-topped building.
- \* New marshland habitat has been created in the middle of a car park on an industrial estate in south-east London. It has reeds, dragonflies and a shingle beach - and there is still enough space for 465 cars (Urbio, 3, 2002).

It is finally important to note that it is not just the design of new urban nature sites that is important, but also the need to accommodate wildlife in new development. When building houses on an urban site for example, it is important to consider how best to integrate the natural environment of the site into the new development. It should also be considered that at present, 'almost no reference is made by planners to psychological literatures' (Halpern, in PPG 17). Although it may have been accepted that urban nature influences well-being, these considerations have not yet made it directly into planning rhetoric, ie how to plan in order to maximise well-being. Planning should be undertaken to maximise human health and well-being and in order to achieve this, there must also be community and partnership involvement at the planning and design stage.

## **Who can make management happen?**

### Funding

Local authorities remain the primary financiers of open space (Johnston 1990). As demonstrated, additional funds for urban nature can be obtained through partnerships with other local organisations and community/ voluntary organisations. Many charities also offer financial support to urban nature projects (for example Wildlife Trusts). The Heritage Lottery Fund is additionally a big financial supporter of urban nature. Under the urban parks programme for example, £150 million was offered towards the restoration of 249 parks of all sizes and descriptions (CPNM 1999). Another important external source of capital is Section 106 Agreements (Department of Transport Local Government and the Regions 2002), under which developers may be required to meet certain planning obligations when they are given permission to develop, including the funding of green spaces.

### Governance

With reference to the importance of consulting communities to bring the greatest benefits to well-being, it is necessary to find out what is important to local people, rather than just attempting to deliver on policy aims pre-set by national, scientific, funding or other bodies (Living Cities). It is also interesting to note that supra-national governance could prove to be beneficial for urban environments. For example, in a decision that may cause unease for UK planning authorities (Urbio, 1, 2002), the European Commission formerly requested that an environmental impact assessment be carried out for the proposed Crystal Palace Park multiplex in London, as it was a large development. If support for urban nature can be attained from both the highest levels, and from local residents, the possibilities of maximising human health and well-being may be dramatically increased.

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Goode, 1986. *Wild in London*. A shell book.

Hough, 1984. *City form and natural process: towards a new urban vernacular*.

Jackson, 2003. The relationship of urban design to human health and condition. *Landscape & Urban Planning*, 64, 191-200.

Johnston, 1990. *Nature areas for city people. A guide to the successful establishment of community wildlife sites*.

Kellert and Wilson, 1993. *The biophilia hypothesis*.

Kendle and Forbes, 1997. *Urban nature conservation: landscape management in the urban countryside*.

Krieps, 1989. *Environment and Health: a holistic approach*. Based on the conference Man-Health-Environment. Chapters by Bernatzky and Bouchardeau.

Kuser, 2000. *Handbook of urban and community forestry in the northeast*.

Mabey, 1999 (first written in 1973). *Unofficial Countryside*.

Millward, 1983. *Seminar on Community involvement in urban nature conservation*.

Minter, 1993. *The Healing Garden: a natural haven*.

Moughtin, 1996. *Urban design: green dimensions*.

Nicholson-Lord, 1987. *The Greening of Cities*.

Sabloff, 2000. *Reordering the Natural World: humans and animals in the city*.

Shirley, 1996. *Urban Wildlife*.



## **Recommended Reading**

### **Policy-related Documents**

Department of Transport Local Government and Regions, 2002. Improving urban parks, play areas and open space.

Urban Green Spaces Task Force Report: Improving urban parks, play areas and green spaces.  
[http://www.odpm.gov.uk/stellent/groups/odpm\\_control/documents/contentservertemplate/odpm\\_index.hcst?n=4741&l=3](http://www.odpm.gov.uk/stellent/groups/odpm_control/documents/contentservertemplate/odpm_index.hcst?n=4741&l=3)

English Nature:

-A Space for nature

<http://www.english-nature.org.uk/pubs/publication/PDF/spacefornature.pdf>

-Journal Urbio (urban biodiversity and human nature). Issue 6, 2004.

Forestry Commission: O'Brien and Tabbush, 2003. Health and well-being: trees, woodlands and natural spaces. Outcomes from expert consultations held in England, Scotland and Wales 2002.

### **Academic Literature**

Gilbert, 1989. The ecology of urban habitats.

Johnston, 1990. Nature areas for city people. A guide to the successful establishment of community wildlife sites.

Kellert and Wilson, 1993. The biophilia hypothesis.

Kendle and Forbes, 1997. Urban nature conservation: landscape management in the urban countryside.

Mabey, 1999 (first written in 1973). Unofficial Countryside.

Minter, 1993. The Healing Garden: a natural haven.

### **Research and Organisations**

Habitable Cities: a two-year project, funded by the Economic and Social Research Council (ESRC), and hosted in the Geography Department at the Open University.

[http://www.open.ac.uk/socialsciences/habitable\\_cities/](http://www.open.ac.uk/socialsciences/habitable_cities/)

-Living cities: a new agenda for urban natures. Hinchliffe et al, 2003

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-Living Cities: Making Space for Urban Nature: Published in Soundings, Journal of Politics and Cultures, Jan 2003.

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Urban Nature: The University of Salford.

-Finding Links between urban biodiversity and human health and well-being. Tzoulas.

<http://www.els.salford.ac.uk/urbannature/Projects/Kosta1.htm#determinants>



