
Securing the value of nature in Kent

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Introduction

Nature gives us many benefits. The natural environment provides the essentials of life such as clean air, fresh water, raw materials and fuel, and also gives us enjoyment, inspiration and relaxation. Whether we live in the city or in the countryside, the natural environment underpins our economic, social and personal wellbeing.

‘Ecosystem services’ is a term for all of the benefits that we gain from nature. These are critically important to human well-being and economic prosperity but they are largely invisible in economic decision making.

Measuring the value of these benefits is challenging. Some already have recognisable financial value – timber, food and fuel for example. But the value of other benefits are hidden: the control of water supplies, the regulation of the climate, or the health benefits of access to nature. Nature and ecosystems work in an integrated way and changes in one part of the environment can affect the healthy functioning of the environment elsewhere. The holistic nature of living systems demonstrate that a joined-up approach is needed to protect these interlinked systems and to maximise their benefits to society.

This report explains the huge benefit of harnessing the value of nature to support:

- Business and the economy
- Public health
- Productive and environment all and management

It provides evidence from a variety of sources that quantifies the benefits that nature provides, and demonstrates the significant potential to realise these social and economic benefits through working in partnership.

The economic value of nature’s services

- Direct contribution to economic activity – crops for food production, fish landings, timber and water to produce paper, plant extracts for medicines, minerals and metals for manufacturing, silicon to make electronic circuits.
- Indirect contributions to economic activity – pollination services of insects for agriculture, cleaning and recycling of water.
- Avoidance of costs to the economy – carbon sequestration by forests, flood control by wetlands, trees that moderate city climates.
- Welfare enhancing services – nature-based amenity and recreation, health benefits from greenspace.

Adapted from: *Natural capital: supporting evidence and analysis to the Natural Environment White Paper* <http://www.archive.defra.gov.uk/environment/natural/documents/newp-evidence-nat-capital-110607.pdf>

Assessing the value of nature

Governments and business leaders recognise that prosperity and security rely on a healthy natural environment and that there are many economic and social risks attached to ignoring this. Maintaining natural capital is fundamental to sustainable economic growth and wellbeing. Recent international and national assessments have started to put a value on the services provided by nature:

The ***Millennium Ecosystem Assessment***(MA) produced in 2005 analysed the state of ecosystems across the world and discovered that human activity is having a serious and escalating impact. The Assessment concluded that net gains in economic productivity have been won at the cost of damage to many of nature's services.<http://www.maweb.org/en/index.aspx>

The ***Economics of Ecosystems and Biodiversity*** (TEEB) is a major international initiative led by economists that demonstrates the global value of nature and the economic and human cost of degrading it. The TEEB programme has shown that protecting the natural environment delivers economic returns of 100 times greater than the cost of protection. The size and scale of losses of natural capital from continuing to lose biodiversity at the current rate is estimated at between \$2 and \$5 trillion every year.<http://www.teebweb.org/>

The ***UK National Ecosystem Assessment*** (UKNEA) published in 2011 is the first time an individual country has undertaken a complete assessment of the services that nature provides. It builds on the global MA assessment and analyses the UK's natural environment in terms of the benefits it provides to society and continuing economic prosperity. The overall message is that 30% of the services that we get from nature are currently in decline.<http://uknea.unep-wcmc.org/>

The natural environment white paper 2011 ***Natural Choice: securing the value of nature*** sets out how the Government intends to put natural capital at the heart of economic thinking and decision making. The White Paper outlines a number of initiatives to restore the natural environment, new programmes for connecting people and nature, and several proposals for capturing the economic value of nature and measuring green growth alongside GDP.<http://www.defra.gov.uk/environment/natural/whitepaper/>

Natural value in Kent

Kent has a rich variety of landscapes, a long coastline and a stunning diversity of wildlife. The natural environment draws large numbers of visitors each year and provides an attractive backdrop for business and commerce.

Kent is one of the largest counties in England, with a population of over 1.4 million. As a gateway to Europe, Kent has enjoyed growth in jobs and housing in recent years and significant areas are earmarked for regeneration and development. This provides many opportunities to incorporate the benefits of the services provided by nature to deliver sustainable economic growth.

The land in Kent is very productive, with about two-thirds of the land area under agriculture. Caring for the natural environment will sustain the agricultural economy and there are many opportunities

to manage land for multiple benefits, including water management and adaptation to climate change.

Local Nature Partnerships

The Natural Environment White Paper recognised that partnership working is the best way to embed natural value into local decision-making and accounting and set a framework for the establishment of Local Nature Partnerships. Protecting the natural environment and maximising wellbeing and economic return requires an integrated way of working and a shared vision for a green economy.

In Kent, a Local Nature Partnership will be established to bring together a range of groups with a wide set of experience and skills. The multi-sector Partnership will encourage innovation and will:

- Develop plans that link improving the environment with economic and social priorities
- Improve the multiple benefits generated by the natural environment by working at a landscape scale
- Work closely with the Local Enterprise Partnership and Health and Wellbeing Partnership

This report will assist the Partnership in securing these ambitions. It demonstrates the benefits of looking after the natural environment and using nature's services to ensure long-term wellbeing and economic prosperity for Kent.

Business

The natural environment and its services underpin the economy and can be harnessed to support economic growth and the profitability of business. Business can contribute to the conservation of the natural environment, which in turn provides business opportunity.

Economic Development

The quality of Kent's natural environment, its coast and countryside, is a huge asset for attracting business and tourism to the region. A healthy natural environment is an important component of business and residential location decisions and destinations for recreation and tourism.

- Tourists say the countryside and landscape are two of the main reasons they come to Kent, bringing £2.5bn annually to the Kent economy¹
- The restored wetlands of Cliffe Pools on the southern shore of the Thames estuary in north Kent is expected to attract 40,000 visitors per year.²The economic impact of RSPB reserves on local economies across the UK has been estimated at 820 jobs and £15m per year³
- Visits by UK residents to the countryside and/or villages contribute £5.5 billion annually for the economy in England and visits by UK residents to the coast contribute £7.4 billion annually⁴
- A study in the south west showed that 35% of businesses relocating to the region quoted environmental attractiveness as the key reason for their move⁵
- The environment in the north west of England is estimated to generate £2.6bn gross added value and supports 109,000 jobs⁶

The natural environment is important for business and economic development across Kent, but is particularly important in its potential to support economic development and quality of life in regeneration and growth areas. The natural environment can be harnessed to support the objectives of the South East Local Enterprise Partnership including growth of the Thames Gateway, support to coastal communities and strengthening of the rural economy.⁷

For centuries, Kent has been renowned as the 'garden of England'. The county's rural character and coastline is why so many of us choose to live here. But our unique location can offer so much more. As a base for new economic growth and prosperity, I believe the county's potential is only just being realised. Paul Carter, Leader Kent County Council⁸

Development and regeneration

Nature and the services it provides is fundamental in securing the social and economic goals of new development and in particular regeneration and growth areas. The concept of green infrastructure is now widely acknowledged: a strategically planned network of multi-functional greenspaces and other environmental features vital to secure the sustainability of an urban area and its connection with its wider rural hinterland.

Green infrastructure also includes the extensive amount of vegetated land alongside the strategic road and rail network. These green corridors are of great importance for wildlife as well as contributing to the amenity of the millions of people using the transport network.

Green infrastructure includes parks and natural spaces, trees, water bodies, green corridors (such as vegetation along waterways, road and rail side and footpaths), sustainable urban drainage, vegetation within building design and use of renewable energy.

The benefits provided by green infrastructure include: improved air quality, reduced temperature extremes, storage of flood water, storage of carbon, reduction of noise, habit enhancement and increased wildlife, improved physical and mental wellbeing through access to greenspace, and improved community cohesion.

Green infrastructure is good for business in many ways. It has the overall economic advantage of providing a quality and sustainable environment which will attract inward investment and makes an area a desirable place to live and work.

Environment and climate change

Green infrastructure is important for providing a quality environment for business and for future proofing development and business against the potential impacts of climate change. Green infrastructure supports the effective management of water resources and can reduce the risk of flooding: greenspace can intercept and store rainwater and can be used to absorb and hold river floodwater. Sustainable urban drainage systems (SUDS) can make a major contribution to the conservation of water and control of flooding in urban areas.

Urban parks, gardens and street trees can help reduce temperatures in urban areas, reducing the need to cool buildings. Green roofs on buildings have been shown to reduce energy costs. Vegetation also filters and absorbs pollutants, maintaining air quality.

- Flood defences at Sandwich, including the use of a natural flood relief area, will protect 488 houses and key employment areas including the Discovery Park within the Sandwich Enterprise Zone⁹ (see flood alleviation page 20)
- Urban greenspaces can have a cooling effect of 1-2°C¹⁰
- A green roof on a store in Manchester achieved 25% reduction in fuel bills and 10% cuts in water rates¹¹
- Green roofs can store more than 80% of rainfall in some situations, reducing flooding in urban areas¹²

Green infrastructure also contributes to the mitigation of climate change by absorbing and storing carbon and can reduce carbon emissions from travel through provision of local recreation opportunities.

Healthy workforce

Well-planned green infrastructure will attract people to live in an area and can help maintain a healthy and productive workforce. Greenspace supports health by encouraging physical activity and provides a resource for relaxation and alleviation of stress (see physical health page 12). Greenspace

supports community cohesion and rates of crime and disorder have been shown to be lower in green urban settings.

- People living within 500m of greenspace are almost 25% more likely to be active at recommended levels.¹³ The overall cost to the economy of physical inactivity in England, most of which is through sickness absence, is estimated to be £8.2bn per year¹⁴
- Research has shown that well-vegetated residential areas can have 50 percent less crime compared with less vegetated areas¹⁵
- Research in the north west of England has shown that involving staff in land management and an improved working environment led to better staff retention, resulting in lower recruitment and training costs and higher productivity¹⁶

Inward investment and property values

Attractive environments support inward investment by encouraging business to relocate and stay in an area. Greenspace in urban areas has been shown to increase house prices and the value of commercial property.

- Property values increase near greenspaces as people are prepared to pay on average 18% more for houses close to parks than for similar properties further away¹⁷
- The development of a community woodland on a former colliery site in St Helen's is estimated to have directly enhanced existing property values by £15m¹⁸
- A survey of real estate developers and consultants across Europe found that 95% of respondents believe that open space adds value to commercial property and would be willing to pay at least 3% more to be in close proximity to open space¹⁹

Case study: Thames Gateway Parklands

The Thames Gateway is Europe's largest regeneration programme and stretches 40 miles along the estuary from Canary Wharf in London to Southend in Essex and Sittingbourne in Kent. Its Parkland programme is creating new high quality landscapes along the Thames estuary, underpinning economic growth and providing a flagship for sustainable living.

The programme is being delivered by three partnerships including the Greening the Gateway Kent and Medway Partnership, and has already achieved:

- 637 hectares of new green space
- 2013 hectares of improved green space
- restoration of 10.3 kilometres of waterway
- 118 hectares of new and enhanced habitat
- 95 kilometres of upgraded foot and cycle paths
- 5 new visitor centres
- 1070 properties at reduced risk of flooding

Working with landowners, farmers, charities, government bodies and others the Partnership will continue delivery through urban tree planting, sustainable urban drainage, flood protection, land reclamation, habitat management, farm improvements, new green development, urban renewal and transport schemes.

Parklands provides a considerable contribution to economic growth of the Thames Gateway,

Case study: Victoria Business Improvement District

The Victoria Business Improvement District (BID) is a business-led group established to improve the area of SW1 in London. Their 5-year ambition is to boost the local economy, improve the area for residents, workers and visitors using green roofs, rain-water gardens, green walls, trees and plants at street-level and 25 hectares of new greenspace. This initiative demonstrates the potential to harness the enthusiasm and dynamism of the private sector, together with the expertise and advice of the public sector, to transform the environmental quality of an area.

<http://www.insw1.com/Clean-and-Green-5632.html>

Business opportunity

Individual businesses depend on natural materials and services from the UK and overseas. Many companies are already assessing the sustainability of their supply chain to help future-proof their business. Managing energy, water consumption and waste will also benefit the natural environment and can reduce costs.

Businesses can gain by demonstrating corporate sustainable responsibility. Businesses can benefit by taking account of the natural environment within their environmental management systems and reporting. This can be attractive to investors and insurers who are increasingly looking to see that businesses actively manage natural resource risks and grow green markets. Business can also benefit by marketing their environmental credentials to consumers.

Case study: Biodiversity Benchmark –Bluewater shopping centre

The Biodiversity Benchmark is an award for business that recognises improvement of the natural environment. The benchmark, managed by The Wildlife Trusts, is compatible with existing environmental management systems and assesses an organisation's performance in management of its landholdings. Bluewater is working to achieve the benchmark for its shopping centre at Greenhithe. The first step has commenced with a biodiversity audit of their landholding. The benchmark encourages businesses to build partnerships and networks with local communities and enhance reputation with stakeholders, including suppliers, shareholders and customers.

<http://www.wildlifetrusts.org/biodiversitybenchmark>

http://www.bluewater.co.uk/content/sb_sustainability##

Case study: Rural Enterprise

Blooming Green is a florist marketing its high environmental credentials and supporting the rural economy. They are growing their own flowers and involving local growers in a sustainable way, growing organically, minimising waste, minimising their carbon footprint and managing land for nature conservation.

<http://www.bloominggreenflowers.co.uk/>

Stone Circle is the first organic livery stables in the UK and has achieved awards for 'Kent Environment Business of the Year' and 'Pioneering Rural Land Management.' The livery has an extensive conservation programme including tree planting, hedgerow creation, pond restoration and flower meadow restoration. The livery's mission is 'to be the pioneering green business in the equine industry'.

<http://www.stonecirclelivery.com/>

Businesses owning land can take advantage of managing it to enhance wildlife and to provide benefits for the local community. Involving staff in managing land and providing green work environments can attract and retain a well-motivated workforce. Managing land in an environmentally sensitive way can reduce maintenance costs, for example through reduced mowing and less use of herbicides and pesticides. (see pages 19-21 for further information on the management of land for environmental and economic benefit).

- Givauden in Ashford has provided space for nature, including wildflower meadows, ponds, riverside improvement, trees and hedges. The land is enjoyed by staff and the community and the company received a Kent Environment Award for Business²⁰
- UK agriculture is dependent on the pollination of crops by insects, yet insect populations have declined. Sainsbury's growers have sown a specially designed seed mix containing pollen and nectar crucial to the survival of bumblebees and other insects. 1000 hectares of land has been sown and bumble bee numbers have increased by 600%²¹
- Marks and Spencer have a commitment that 10,000 of their farm suppliers will be part of their sustainable agriculture programme, 'Farming for the Future by 2012. 10,000 M&S customers were involved in surveying butterflies which raised awareness about threats to biodiversity²²
- In the north west of England United Utilities are supporting their tenant farmers to manage land to help maintain water quality and reduce the costs of water treatment²³

Case study: Cliffe Pools

Cliffe Pools is a coastal wetland habitat of international wildlife importance on the southern shore of the Thames Estuary, managed by the Royal Society for the Protection of Birds. Its saline lagoons and shallow pools were created by clay extraction for the cement industry and have been used, under licence, by Westminster Dredging for disposal of river dredging deposits.

In the 1980s Westminster Dredging Ltd. agreed to infill the remaining pools for the benefit of nature conservation. RSPB and Westminster Dredging have agreed a 40 year restoration programme for the site including targeted disposal of dredgings to provide feeding habitat and nesting islands for wildfowl and a new visitor centre. Management of the site has also been supported by Waste Environment Ltd (WREN) using Landfill Tax Credits. The site is expected to attract 40,000 visitors a year and is an important asset for recreation and the local economy in the Thames Gateway.

<http://www.afterminerals.info/docs/cliffe%20pools.pdf>

The economy and business benefits from the many services that nature provides, particularly in supporting regeneration. Business can gain by demonstrating corporate environmental responsibility and will benefit from support and partnerships to help realise the potential offered by the natural environment.

Nature and Health

Mental health problems, rising obesity levels and lack of physical exercise are major concerns for society and have a substantial impact on the economy. The natural environment plays an important part in maintaining good health and wellbeing. Nature benefits everyone, from young to old, and can help to reduce health inequalities in society.

“Nature and greenspace can be seen as a great outpatient department whose therapeutic value is yet to be fully realised.” Dr William Bird MBE²⁴

There is substantial evidence that demonstrates the value of nature for improving mental well-being and physical health. The contribution to public health is currently undervalued; there are many opportunities to make more use of the benefits that nature provides as an effective and low-cost health resource.

Kent has a mixed health picture. Life expectancy is higher than the England average but there are considerable inequalities between areas of deprivation and areas of greater wealth. Estimated levels of obesity in adults and children are worse than the national average – nearly one-fifth of children are classified as obese. Physical activity rates for both adults and children are lower than the recommended level.²⁵

Increasing access to nature can improve public health and provide opportunities to foster social bonds within communities. The natural environment has much to offer to help secure better health for the people of Kent.

Health Benefits from the Natural Environment

Nature supports health and well-being in a variety of ways, from provision of clean air, water and medicines, to food and natural resources. But nature also makes a direct contribution to better mental and physical health and improved social engagement.

Mental health

Problems with mental health affect many people in the UK. Mental health and mental wellbeing are fundamental to quality of life and the productivity of individuals, communities and nations.²⁶ Mental illness has high direct and indirect healthcare costs and a strong negative impact on the economy.

Contact with nature can help to prevent, alleviate and assist recovery from mental health problems. In particular, natural environments help to lower levels of stress, enhance mood, increase concentration and boost self-esteem. Many researchers conclude that people have an innate need to experience nature; lack of interaction with nature and the outdoors is a growing problem amongst children.²⁷

- Just under 1 in 4 people in the UK suffer from some form of mental illness.²⁸ Around 163,000 to 190,000 people in Kent are living with common mental health problems (such as anxiety

and depression) and a further 60,000 people are living with severe mental illnesses (such as severe depression or post-traumatic stress disorder)²⁹

- The economic and social costs of mental illness were estimated at £77.4 billion for the year 02/03³⁰
- 40% of those on Incapacity Benefit are there due to mental illness – a million people³¹
- Having a view of greenspace from one's house increased emotional wellbeing by 5% and general health by 2%³²
- Contact with nature has been shown to reduce the severity of ADHD in children³³
- 90% of people who took part in green exercise activities said that the combination of nature and exercise is most important in determining how they feel³⁴

Mental well-being and the benefits of nature

- Viewing nature – in hospitals, at the workplace, from prison, for children at home;
- Contact with nearby nature – in urban parks, gardens or the rural countryside;
- Green exercise – synergistic health benefits of physical activity and exposure to nature;
- Green care – nature as therapy for vulnerable groups of people

Adapted from: *UK Millenium Ecosystem Assessment*, chapter 23: Health values from ecosystems, pp. 1159-62.

Physical health

Many prevalent chronic diseases are linked to lack of physical activity. These include common health problems such as cardiovascular disease, diabetes, some cancers and osteoporosis – all major costs to the NHS. Measures of physical activity in England consistently show that most people do not reach the nationally recommended levels for adults of 30 minutes of moderate intensity activity 5 times per week.

Access to nature can encourage participation in physical activity. Going out for a stroll or to simply 'get some fresh air' inspires people of all ages to be active. Evidence suggests that being outdoors in nature is an important factor that helps to maintain people's motivation to keep fit. For example, many join schemes such as the Green Gym (see page 15) for their health, but they stay because of the environment.³⁵ Many participants in health walks cite the changing seasons and variety of wildlife as a major encouragement to continue attending.³⁶ These examples of 'Green exercise' – physical activity undertaken in the outdoors – connect people to nature in their local area.

- in 2006, only 40% of men and 28% of women met the recommended level of 30 minutes of moderate intensity activity five times each week³⁷
- The cost of inactive lifestyles to the NHS is estimated at £1 to £1.8 billion each year. Additional costs to the economy of lost productivity due to sickness absence or premature death is estimated at an additional £6.5 billion³⁸
- Individuals with easy access to nature are 3 times more likely to participate in physical activity than those with poorer access and therefore are 40% less likely to become overweight or obese³⁹
- 90% of people reported an increase in self-esteem after an outdoor walk verses 17% indoors⁴⁰

- For every £1 invested in the Walking the Way to Health Initiative programme £7.18 worth of health benefit is delivered⁴¹

Social engagement

Greenspaces in the community can provide significant social benefit. This enhanced ‘social capital’ includes community networks, civic engagement, sense of belonging and equality, co-operation with others and trust in the community.⁴²

Availability and quality of local greenspaces is not evenly distributed; people in deprived urban areas can have five times fewer public parks and good-quality greenspace than people in more affluent areas,⁴³ and this is reflected in the poorer health and wellbeing of those communities. Quality of greenspace affects how people perceive their local park and therefore how often they visit. Nature and wildlife are an important factor in why some people visit their local park.⁴⁴

Evidence suggests that levels of social interaction can be directly influenced by the availability of greenspace, particularly in urban areas.⁴⁵ There is great opportunity to increase social interaction through schemes that encourage people to take part in improving their natural environment.

- People who live within 500m of accessible greenspace are 24% more active and fitter. Reducing the sedentary population by just 1 per cent would reduce morbidity and mortality rates and save £1.44 billion for the UK⁴⁶
- The most affluent 20% of wards in England have five times the amount of parks or general greenspace (excluding gardens) than the most deprived 10% of wards. Areas which are more than 98% white in England have 6 times as many parks as wards which are 40% non-white⁴⁷
- Survey data reveal that 91% of the public believe that parks and open spaces improve quality of life, and 74% believe that parks and open spaces are important to health and well-being⁴⁸
- The social return on investment (SROI) for conservation work on the Greenlink project in a deprived urban area was calculated at £7.63 for every £1 invested⁴⁹
- A recent large-scale study showed that exposure to greenspace reduced the links between income deprivation and mortality. Health inequalities related to income deprivation were also lower in populations living in the greenest areas⁵⁰
- Studies have shown the presence of vegetation is associated with a 50% reduction in violence and property crimes in otherwise identical public housing blocks⁵¹

Contact with nature benefits people throughout life

Children

- Satisfies children’s innate curiosity and need for nature and generates a sense of freedom
- Provides an incentive for healthy outdoor exercise
- Reduces anxiety and disruptive behaviour
- Improves development, cognitive function and independence

Adults

- Stimulates and sustains outdoor activity
- Provides relaxation and reduces stress
- Offers free or low-cost enjoyment

Older people

- Provides an incentive to remain active
- Offers opportunities for social engagement
- Helps maintain connection with the wider world

Using Nature to Support Health Services

Healthcare settings

Patients and service users benefit from access to nature at healthcare settings such as hospitals and community care centres. Benefits are gained from views of trees, shrubs and flowers through windows; walking or sitting in gardens and courtyards; watching nature and wildlife on webcams; or even seeing nature in pictures mounted on walls. Research has shown that even five minutes spent in a hospital garden can decrease stress and anxiety.⁵² The NHS, local authorities and private healthcare providers can help to improve the health of both patients and staff through greening their estate.

Case study: NHS Forest

This national project coordinated by the Centre for Sustainable Healthcare aims to:

- Improve health of staff, patients and communities through increasing access to green space on or near to NHS land.
- Green the NHS Estates and with a target of 1 tree per employee amounting to 1.3 million trees.
- Encourage greater social cohesion between NHS sites and the local community.
- Bring together a range of professionals and volunteers to produce woodland that includes the use of art, food crops, woodfuel and biodiversity.
- Help offset NHS carbon output.

<http://nhsforest.org/home>

Primary Care

Many people are not meeting recommended levels of physical activity and are therefore at greater risk of developing common chronic diseases. Promoting physical activity through primary care at general practice surgeries and community health centres is an important element in encouraging active lifestyles. About three-quarters of the population visit their GP each year, and around one in four people say that they would be more active if advised to do so by a GP or nurse.⁵³

Healthcare professionals can signpost their patients to outdoor physical activity and this can include self-directed green exercise opportunities such as gardening, walking and cycling, or participation in organised outdoor exercise such as health walks or conservation management.

Studies suggest that the most effective interventions to increase activity levels involve walking from home, rather than attendance at a facility.⁵⁴ Research has also begun to explore appropriate 'dose' levels for the benefits of green exercise, following evidence that the length of stay in nature is the strongest determinant of the restorative experience.⁵⁵

Case study: Walking4health

Walking for Health encourages more people to become physically active in their local communities. It was established in 2000 and now has about 650 local health walk schemes across England, offering regular short walks over easy terrain with trained volunteer walk leaders. The East Kent Healthwalk scheme is one of the largest, with over 80 weekly walks, more than 2,200 registered walkers and about 250 trained walk leaders. Kent Community Health NHS Trust commissioned Dover Volunteer Centre to manage the scheme and support the network of volunteer leaders.⁵⁶

The economic and health value of expanding the national walking for health scheme was evaluated in 2009. Illustrative estimates showed that each 'quality adjusted life year' (QALY) would be delivered at a cost of about £4000.⁵⁷ Other assessments suggest the QALY could be as low as £100.⁵⁸ (The National Institute for Health and Clinical Excellence (NICE) assesses that a treatment is cost effective where it has an upper threshold of £30,000 per QALY).

<http://www.wfh.naturalengland.org.uk/>

Case study: Green Gym

Green Gym is a scheme run by the BTCV which inspires people to improve their health and the environment at the same time. Experienced leaders guide volunteers through a range of conservation projects in the outdoors that benefit local greenspaces. People learn practical skills, boosting their confidence and improving strength and stamina.

The first Green Gym was launched in 1998 and there are now more than 80 nationwide. Evaluation of the Green Gym scheme in 2008 concluded that the overall physical health status of participants improved considerably, most significantly for people with the poorest physical and mental health.⁵⁹

In Kent, there are 2 green gyms, one at the Singleton Environment Centre in Ashford and another at Bedgebury National Pinetum in Goudhurst. Volunteers get involved in a wide variety of tasks such as pond management, scrub clearance, and coppicing woodland.

<http://www2.btcv.org.uk/display/greengym>

Social Care Services

There is great potential and many opportunities to use the benefits of nature in delivering a wide range of social care services: care management for older people, home care, residential and day care, facilities for those with physical or learning disabilities, services for children and families and youth support.

At care units and other care facilities, grounds can be enriched to provide sensory and wildlife gardens. Residents and day visitors can use gardens for enjoyment and relief from stress, and adults

and young people who are able can learn gardening skills. Horticultural therapy is particularly valuable for those with mental health problems. 'Green care' includes a diverse range of programmes that use nature as a basis for improving the health and well-being of vulnerable groups of people, and includes ecotherapy, care farming and therapeutic horticulture.⁶⁰ Green care is particularly suited to people with physical and mental disabilities, young people 'not in education, employment or training' (NEETs), young offenders on community service and the prison services.

Case study: Ecominds

Ecominds is a national initiative coordinated by Mind, the leading mental health charity. Ecominds is funding 130 environmental projects to provide outdoor green activities for people with mental health problems. Projects range from horticultural and agricultural schemes, through to walking groups and regeneration projects in local parks. They all encourage those attending to enjoy and benefit from nature and greenspaces. In Kent, projects include Let's Grow in New Romney near Folkestone and Grow2Grow in Edenbridge near Sevenoaks.

Let's Grow offers gardening, guided walks, and nature art projects for young people with mental health problems. Everyone gets the chance to enjoy all the benefits of fresh air, exercise, meaningful activity and socialising while learning new skills and connecting with nature. Based at the Romney Marsh Visitor Centre, the project is coordinated by the local Mind group and Kent Wildlife Trust. **Grow2Grow** provides therapeutically supported placements for vulnerable young people aged between 16 and 25 years. Referrals can be made by GPs, community mental health services, leaving care services, children and young people's services and Connexions. After a six-week trial/induction period, the project offers young people up to three days per week for up to two years. Grow2Grow is hosted by Commonwork at Bore Place, Edenbridge.

<http://www.mind.org.uk/ecominds>

Access to nature for everyone

Access to nature on an everyday basis helps to secure quality of life for all. This is widely recognised by both the public and voluntary sectors who have recently mounted mass participation programmes to encourage the public to get out in nature: for example, walk4life, organised by Walk England; muck in4life, an environmental activity programme part of the Change4Life initiative; and visit woods, an online database coordinated by the Woodland Trust for finding woods to visit throughout England.

Provision of places to access nature is important for giving everyone the opportunity to take advantage of the health benefits that nature provides. Nature is a free commodity that should be available to be enjoyed by all. But access to natural environments is not equal. Many areas do not have accessible natural greenspace to recommended standards.⁶¹ Only 13% of homes in urban areas are within 300 metres of a natural greenspace of at least 2 hectares in size. This is particularly so in areas with high levels of deprivation⁶². Addressing health inequalities in society is a key concern of public policy and it is widely accepted that inequalities are strongly linked to the 'wider determinants' of health – a range of social, economic and environmental factors which includes access to a healthy environment.⁶³

Case study: Access to Nature – Footprints in the Sand

Thanet is one of the most deprived areas of Kent and its health profile shows many indicators of poor health. Thanet Coast Project is running a 2½ year project to improve community health through access to nature.

The Thanet Coast in Kent is a huge expanse of accessible natural greenspace with numerous national and international nature conservation designations. This project will help local communities discover the wonders of the natural coastline on their doorstep, and use the coast as a resource for learning, skills development, social well-being and health benefits. A programme of activities encourages local communities who do not usually visit natural places to access and enjoy the Thanet Coast. The project also aims to increase pride and ownership amongst local people for their coastal heritage; develop an interest in coastal wildlife and natural features; increase participation in conservation and interpretation activities; and promote health benefits relating to the natural coastal open space. The project is funded by Natural England through its Access to Nature programme and managed by Thanet District Council.

http://www.thanetcoast.org.uk/projects_issues/footprints_in_the_sand.aspx

Land Management

The productivity of land relies on the services provided by nature. In turn, land owners and managers are stewards of the environment as the way land is managed determines biodiversity and environmental quality. There are opportunities to manage farmland, woodland and other land to harness many other benefits that nature can provide for society and the economy, such as recreation, water management and adaptation to climate change.

Productivity and the environment

Nature provides food, fuel and timber. The cultivation of these natural products relies on biodiversity and ecological processes which maintain water quality and supply, soil quality and pollination of crops. Land needs to be managed to support these services provided by nature that are essential to productivity. For example provision of habitats rich in wildflowers and reducing use of pesticides will support the insects required for pollination of crops. Avoiding compaction of soils will help retention of water and soil erosion from water run-off.

- The £6,600m which UK farmers generate each year could not be produced without the help of ecosystem services such as water purification and regulation, soil fertility processes and pollination⁶⁴
- The value of pollination to UK agriculture is £440m per year – 13% of the total value of agriculture⁶⁵
- 84% of European crops and 80% of wildflowers depend on wild insect pollination⁶⁶
- The absence of flowers throughout the landscape is a major factor limiting the number of insects available for the pollination of wild flowers and crops⁶⁷

Case study: Environmental Stewardship

Agri-environment schemes are voluntary agreements that pay farmers and other land managers to manage their land in an environmentally sensitive way. They enable productivity while supporting the natural environment and the natural services that it provides. The main scheme is Environmental Stewardship.⁶⁸

In Kent, through Environmental Stewardship, more than 4000 hectares of habitat has been improved for wildlife and more than 450 ha of habitat has been created by farmers and landowners across the county. These improvements amount to £19.5m being brought to Kent's farmland economy.⁶⁹

Agri-environment schemes account for approximately 80% of the support made available to farmers in England. Between 2007 and 2013 approximately £2.9bn will be invested in the countryside, mainly through Environmental Stewardship.⁷⁰

http://www.naturalengland.org.uk/Images/Farming%20with%20Nature%20-%20Nov%2009_tcm6-14724.pdf

Additional economic value

In addition to the direct value of food and woodland products, the section on Business (pages 5 to 8) has illustrated the value of a quality natural environment to the economy of Kent. Well managed landscapes can attract business investment and tourism, support regeneration and local enterprise and provide for outdoor recreation.

There are enterprising opportunities for landowners to capitalise on environmental management of their land, such as supply to woodfuel markets and using the grazing of conservation land to market meat products of premium value (see case study below on Kent Woodfuel Pathfinder).

Environmental benefits

Land owners and managers are stewards of the environment. In addition to the productivity of land, habitats such as grassland, woodland and coastal land can make a huge contribution to water management and adaptation to climate change. The services that these habitats provide can be harnessed to great effect in land-use strategies that aim to address these increasingly sensitive environmental problems.

Some of the environmental services that land provides have been recognised in government regulations in order to help maintain them. For some services incentive payments under agri-environment schemes are available (see case study above).

Government has recognised the need to review options for 'payments for ecosystem services' (PES); these are payments to land managers and others to undertake actions that increase the quantity and quality of desired ecosystem services, which benefit others, often remotely.⁷¹ Some innovative voluntary PES schemes are emerging, effectively demonstrating that markets for ecosystem services can be achieved. For example, in the north west of England, United Utilities, the Royal Society for the Protection of Birds and farmers are working in partnership to secure the environmental management of 20,000 hectares of water catchment owned by United Utilities to reduce the costs of water treatment for drinking water whilst increasing biodiversity and income for farmers. Most of the cost of the project is funded by United Utilities.⁷²

It is important for landowners and managers, utilities, public bodies and environmental organisations to work together to maximise ecosystem services in a cost-effective and apportioned way.

Water quality

Pollutants, including phosphorus and nitrogen from agricultural land, have significant impacts on water quality which are costly to remedy for public water supply. As well as minimising pollution from agricultural sources, semi-natural vegetation in water catchments, which are typically nutrient poor and can hold nutrients, can contribute significantly to maintenance of water quality.

- It is estimated that the annual cost of agricultural diffuse pollution in the UK is at least £238 million⁷³

- Land management for improving water quality in the south west is estimated to be resulting in a cost benefit ratio of 1:65⁷⁴
- Floodplain restoration projects can deliver significant water quality benefits, with gains outweighing costs by a factor of 2.5 to 4⁷⁵

Flood alleviation

Flooding is an increasing problem which is of great cost to society and the economy. In Kent 70,000 properties are estimated to be at risk during a severe rainfall event and 86,000 properties are estimated to be at risk from coastal and fluvial flooding.⁷⁶ Habitats such as woodland, meadows and wetlands have the capacity to slow water flow into rivers and watercourses. Well-vegetated floodplains can store floodwater and reduce the flooding of built-up areas.

Case study: Flood defence – Sandwich

Significant areas of Sandwich are at risk of flooding. The Environment Agency's flood alleviation proposals include provision of a natural 220 hectare tidal flood relief area outside the town. This will allow the river Stour to overflow in a controlled way during an extreme flood event. 60 hectares of wetland habitat will be created at Broad Salts, with footpaths and facilities to observe birds.

The scheme has been developed in consultation with the Royal Society for the Protection of Birds and others. It will provide protection for 488 households, the new Discovery Park which is part of the Sandwich Enterprise Zone, valuable infrastructure including the main coastal access routes, and key tourist and employment areas.

<http://www.environment-agency.gov.uk/homeandleisure/floods/111320.aspx>

Coastal defence

With rising sea levels and storm surges coastal defences are increasingly vulnerable. An alternative to engineering solutions is managed coastal re-alignment, for example using the restoration of coastal saltmarsh and mudflats as coastal defences.

- Coastal wetlands are valued at £1.5b annually in terms of the role they play in buffering the effects of storms and in controlling flooding⁷⁷
- Many managed re-alignment projects deliver positive returns on investments of many millions of pounds⁷⁸
- The annual benefit of coastal re-alignment at Alkborough Flats in the Humber estuary has been valued at £400,667 for flood protection, £535,000 for wildlife conservation and £14,553 for carbon storage⁷⁹

Climate Change

Natural vegetation such as woodland, peatland and coastal habitat play a large role in the mitigation of climate change through their huge capacity to store carbon. Wood can be used as a renewable carbon neutral fuel and the management of woodland for woodfuel can benefit wildlife as well as climate.

- Agri-environment schemes deliver green-house gas savings of 3.46million tonnes of CO2 equivalent per year. The value of these savings is estimated to be £180m⁸⁰
- The entire UK woodland and forestry estate stores around 150m tonnes of carbon⁸¹
- Around 15m tonnes of carbon dioxide was sequestered by forestry in 2006 and reduced the UK's carbon dioxide emissions by 3%⁸²
- Research has shown that 0.44 – 1.7 tonnes of carbon per hectare per year could be stored by recreating inter-tidal habitats⁸³
- The annual value of carbon sequestration from UK woodland is estimated to be £680m⁸⁴

Case study: Kent Woodfuel Pathfinder

The environment and the local economy will benefit from the Kent Downs Woodfuel Pathfinder scheme that will help develop the market for locally produced woodfuel. The scheme managed by the Kent Downs Area of Outstanding Natural Beauty (AONB) will deliver a targeted package of support to the forestry and renewable energy sectors.

The aim is to establish markets for locally grown wood, which will bring local woods into management and provide new habitats for wildlife. The scheme will also support the creation of 'green' jobs and new opportunities for people to get involved with their local woodlands through enterprise and conservation.

The scheme is targeting nearly a quarter of Kent, one of the most wooded landscapes in Britain. In the Kent Downs AONB if just half the estimated annual growth was harvested from the 15,000 hectares of woodland each year this would produce 40,000 tonnes of wood. This amount of woodfuel could heat the equivalent of around 5,000 homes and reduce carbon emissions by 8,000 tonnes each year.

<http://www.kentdowns.org.uk/viewarticle.asp?ID=69>

Landscape scale management and partnership

It is increasingly recognised that a partnership approach to supporting land management over large geographical areas is important to help realise the many benefits that nature can provide for social and economic wellbeing.⁸⁵

Ecosystems operate over geographical areas, for example provision of clean water and flood defence need to be managed over catchments. Habitats have become fragmented and isolated and require expansion and re-connection to improve biodiversity and ecological processes and the services they provide.

Case study: Valley of Visions

Valley of Visions is a project to conserve and enhance the landscape, wildlife, heritage, and access provision in The Medway Gap, between Maidstone and the Medway Towns. Working closely with landowners, farmers and local communities, the project has taken a landscape scale approach to biodiversity conservation. The £2.5 million scheme is funded primarily by the Heritage Lottery Fund and delivered through the Kent Downs Area of Outstanding Natural Beauty.

The scheme is working with landowners, tenants and partners to achieve maximum environmental benefit on land through agri-environment schemes, advice and support. Improvements for biodiversity include chalk grassland restoration involving removed scrub and small trees being sent to a biomass power station and the re-introduction of grazing.

The Valley of Visions Landscape Partnership Scheme is also working with local communities and schools to reconnect them with their landscape. In 2010, the work of the project was recognised with a commendation in the UK Landscape Awards.

<http://www.kentdowns.org.uk/Valley%20of%20Visions.htm>

Partnership is important as land provides multiple benefits and many ecosystem services are interrelated. To harness the many benefits of nature to society requires co-ordination and partnership between land owners and managers, the public sector and environmental organisations. Working together can help harness markets for ecosystem services for example, supply to woodfuel markets. Partnerships can access funding and help target financial incentives for improving ecosystem services.

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