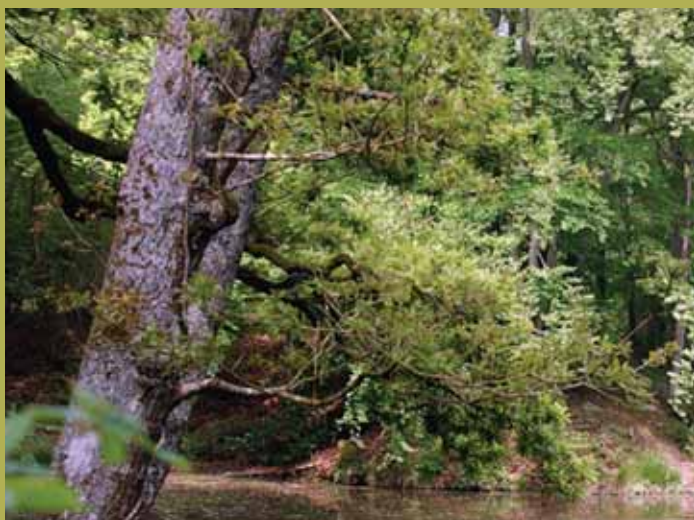


An invitation to shape the Nature of England



Discussion Document

July 2010

How to respond to this Discussion Document

How to respond to this Discussion Document

This document aims to encourage debate about how best we can protect and enhance our natural environment, and the valuable services we derive from it.

We are looking for a wide range of views on all of the issues set out in this document, or any others that you think we have missed.

The deadline for responses to this document is 30 October 2010

Please email your responses to: naturalenvironment@defra.gsi.gov.uk

Or submit comments over the Defra website at www.defra.gov.uk/environment/natural/

Or post them to:

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Foreword



A healthy natural environment has great personal value to each of us. Our contact with green spaces, countryside, wildlife, rivers and seas shape the quality of life in all of our communities.

But our natural environment has a broader national value. It underpins our economic prosperity, our food security, our health, our ability to adapt to a changing climate and to reduce the greenhouse gases which cause this change.

Yet despite our growing knowledge of the real value of our natural environment, and the significant improvements made in some areas over the last twenty years, it faces major challenges. For years, the economy and the natural environment have been pitted against each other as if they were competing choices, rather than being mutually interdependent.

For too long, we have been content to just limit the damage, rather than grow and enhance the value of a healthy natural environment. Globally, it is estimated that the degradation of our planet's ecosystems is costing us €50 billion each year – a figure that could rise to the equivalent of 7% of global GDP by 2050. We are choosing to lose the valuable benefits of a healthy natural environment on a massive scale. A vibrant natural environment is not a luxury for the good times – it is a necessity for economic recovery and sustainable growth for the long term.

We have the opportunity to be the generation which puts this right. It will take an ambitious and radical transformation, in our economy, our society and in securing our future. But the prize is worth it – and essential for our wellbeing.

We must grow a leaner, greener economy. One which properly reflects the true value of nature's services in the way it works – in its prices and markets. Working with the grain of nature will prevent the unnecessary costs of environmental degradation, open up new business opportunities and create new jobs.

This can be our opportunity to unlock the potential of local communities, local councils, businesses, consumers and civil society to play a greater role. We can shift power from the centre and top-down bureaucracy, to free up people to take action.

As the greenest Government ever, we will do our bit to help support this vital wider transformation. The Coalition Programme for Government already sets out a range of commitments both to protect and to enhance the natural environment. We will lead by example and put the value of our natural environment at the heart of Government policy making. As part of this, we will prepare a broad and ambitious White Paper on the Natural Environment – the first since 1990. This discussion document marks the beginning of that process.

This document is a big, open invitation to all, to help shape the future of our natural environment, and in so doing, help shape a brighter future for our economic prosperity and quality of life. I welcome all views and ideas, and very much hope you will participate.

A handwritten signature in black ink that reads "Caroline Spelman." The signature is fluid and cursive, with a large initial 'C'.

Caroline Spelman
Secretary of State for Environment, Food and Rural Affairs

July 2010

Deficit reduction and ensuring economic recovery are the Government's top priorities. But we also know that we can no longer afford the costs to our economy and quality of life which arise from a degraded natural environment. This discussion document seeks to open a national debate about how best we can work together to protect and enhance our natural environment both for its own sake and for the multiple benefits that we all receive from it.

Our natural environment underpins our economic prosperity, our health and our wellbeing. Whether we live in towns and cities, small villages or open countryside, we rely on natural systems for our food, our water, the very air we breathe. Our land, seas, rivers, woods and fields, parks and open spaces provide us with benefits so fundamental that they are often overlooked. These natural assets have an enormous collective value and as a nation we are, rightly, passionate about the places where we live and the landscapes that surround us. However, in recent years we have seen an ongoing decline in many aspects of environmental quality, over which many people feel they have little control. We now have the opportunity to be the generation that finally puts a stop to the piecemeal degradation of our natural environment and, instead, seeks active opportunities to enhance its value.

We now know more than ever before about the value provided by natural systems and the costs associated with their degradation. The time has come to make sure we act on that knowledge. As part of this Government's aim to be the greenest Government ever, we have made the delivery of a Natural Environment White Paper a top priority. In Spring 2011, we will publish a bold and ambitious statement outlining the Government's priorities for the natural environment, setting out a framework for practical action by Government, communities, businesses and civil society organisations to deliver on that ambition.

The natural environment touches upon all aspects of our lives and so the White Paper will need to be broad in its scope, addressing policies on biodiversity and habitats, the marine environment, water quality and availability, air quality, soils, trees, woodlands, forests, landscapes and recreation. It will also need to reflect the important contributions of farming, food, waste, land use and the planning system. Climate change mitigation and adaptation will be key themes; as will the impact of England's footprint on the natural environment overseas. These issues will, for the first time, be addressed in an holistic way designed to reflect the interdependency of the services and resources we receive from nature and the wide range of different factors that impact upon them.

Of course, we will need to deliver on our ambitions for the natural environment within the context of our primary aim to reduce the deficit, and reflecting the Government's plans for reducing regulatory burdens including introducing a one-in-one-out system for new regulations. We will need to seek new innovative ways of working to achieve the outcomes we need.

This is not a process in which policies will be dictated from the centre. In line with our commitment to shifting the balance of power from 'Big Government' to 'Big Society' we want to work closely with all the interested parties – individuals, businesses, civil society groups, land managers and local authorities – to articulate a new, compelling and integrated vision for sustaining and managing our natural environment. It will set out a programme of actions designed to put the value of the natural environment at the heart of Government and identify new ways of enabling local authorities and local communities to protect and enhance the natural environment.

An opportunity for change

We are preparing a Natural Environment White Paper now because we are becoming more aware than ever about the value of nature, because some progress has been made to protect this value but more is needed and because big new challenges face us ahead.

Natural value

The more we understand about the natural world, the more we realise that it supports us in ways which may not always be visible but which have real value. Our natural environment is a source of personal relaxation and enjoyment, community pride, public health and economic security. For example, the value of natural resources extracted for use in the UK economy in 2007 was £41 billion¹. There are also costs to economy and society from environmental degradation, for example, the annual cost of soil erosion in the UK is around £40 million². And there are opportunities to create additional value – for example, action to prevent degradation can have a benefit to cost ratio of as much as 100:1³. But these costs and benefits are often not adequately reflected in the way we make the decisions that impact on our natural environment, leading us to squander valuable natural resources.

The natural environment means different things to all of us and has many different kinds of value. Lots of people appreciate the 'innate' value of the natural world and consider we have a moral duty to respect and protect it. The huge membership of nature-focused voluntary organisations in England pays tribute to the strength of this feeling. For others, the value of nature comes from what it can supply for us – food, timber, fuel, water – things essential to the lives and livelihoods of people across the globe.



¹ ONS, 2007: http://www.statistics.gov.uk/about/methodology_by_theme/inputoutput/latestdata.asp

² Environment Agency (2007): The total external environmental costs and benefits of agriculture in the UK; Evans, R. (1996): Soil Erosion and its Impact in England and Wales. Friends of the Earth Trust.

³ The Economics of Ecosystems and Biodiversity (TEEB) www.teebweb.org

We know now that nature is not static, but a series of living, working systems ('ecosystems') that change over time. We also know that humanity is inescapably part of those systems: that we depend upon them, but also that we have the power to change them radically, either intentionally or without meaning to. Looking at the natural environment in this new way makes it easier to understand the many ways that the environment is valuable to us. It allows us to appreciate the array of "ecosystem services" on which our health, happiness, and prosperity depend.

If we look at an area like the Peak District, many people enjoy exercising in the fresh air, and tourism is an important part of the local economy. At the same time hill farming provides wool and lamb and has helped shape the character of the landscape that people value so much. But, unseen, the area is also purifying water for the city of Manchester, and locking away huge quantities of carbon which might otherwise be released into the atmosphere and contribute to climate change. All of these services are valuable to individuals, society and the economy, but often only some are considered when we make decisions about how we use and manage our land and seas.

Understanding the value of all these services, and the way that they depend on each other makes it possible to look for new solutions to problems, or to manage our environment in ways that enhance its value to society, whilst respecting its innate value. We can consider creating coastal wetlands to improve flood defence. Such a scheme on the Humber is providing £400K every year in flood protection benefits, in addition to habitat for 150 bird species⁴. We can look for more efficient ways of purifying our water. A project in the South West has found that working with farmers to reduce pollutants from their land entering rivers should return benefits of 65 times the investment costs for water companies, and saves individual farmers money⁵.

This 'ecosystems approach' can also help communities and individuals. Studies have shown the presence of vegetation can halve the incidence of violent and property crimes in otherwise identical public housing, and that crime is lower in inner city areas with more areas of natural vegetation⁶. More people socialise in public space with trees and grass, resulting in residents knowing more of their neighbours. Green spaces are associated with better health regardless of socio-economic status, for every 10% increase in local green space there can be a measurable reduction in health complaints within the community (equivalent to a five year reduction in the average age)⁷. Increasing access to the natural environment can provide both mental and physical health benefits. Evidence from the Natural England / Department of Health Walking for Health scheme suggests that for every £1 invested in the scheme, £7 worth of health benefit is delivered⁸.



Question 1 – What do we need to do to embed the true value of our natural resources in decision making at all levels?

a. How can we reflect all the different kinds of value described above?

⁴ See: <http://publications.environment-agency.gov.uk/pdf/SCHO0409BPVM-e-e.pdf>

⁵ See: <http://www.tamarconsulting.org/wrt/projects/water.htm>

⁶ Kuo F, Sullivan WC, (2001) Environment and Crime in the Inner City: Does Vegetation Reduce Crime. Environment and Behaviour 33 May 2001

⁷ de Vries S, Verheij RA and Groenewegen PP. (2001) Nature and Health The Relation between health and green space in people's living environment. See; [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61669-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61669-4/fulltext)

⁸ See; www.naturalengland.org.uk/Images/TIN055_tcm6-12519.pdf

An opportunity for change

Progress to date

The last Environment White Paper: *This Common Inheritance: Britain's Environmental Strategy* was published in 1990. The intervening 20 years have seen a wide range of measurable improvements to our natural environment, for example:

- **The air we breathe is cleaner** today than at any time since before the Industrial Revolution. We have achieved this through tighter controls on emissions of pollutants from industry, transport and domestic sources. From 1990 to 2001 these policies helped avoid an estimated 4,200 premature deaths and 3,500 hospital admissions per annum⁹.
- **The quality of the water in our rivers has improved** measurably since 1990, demonstrated by the return of otters, salmon and other wildlife to many rivers for the first time since the Industrial Revolution. Between 1990 and 2008 the percentage of rivers of good biological quality in England rose from 55 to 72%. These improvements are attributable to the positive impact of investments by the water industry and pollution control measures¹⁰.
- **The country's very best wildlife sites are in better condition** than at any point in recent years. We expect to have 95% of Sites of Special Scientific Interest (SSSIs) in favourable or recovering condition by December 2010. This represents more than a million hectares of our most spectacular and beautiful habitats where effective management measures are in place to resolve problems and protect and sustain valued features¹¹.

Today's Challenges

But, although we have made important progress in these and many other areas, major pressures on our natural environment remain. We have continued to use natural resources beyond their capacity for renewal – leading to damage to our natural systems. For example, despite progress in some areas, biodiversity continues to decline. In 2008, 19 out of 45 Priority Habitats (42%) were assessed as declining in extent in the UK¹². In 2008, 50% of our fish stocks were still classed as unsustainable. These continuing pressures are different in character to those that we have successfully addressed and therefore require new approaches and solutions. In addition, there is a range of new challenges to which we will also need to respond if we wish to protect and sustain the natural environment for future generations.

The White Paper will need to address the following three interconnected, overarching challenges influencing the future of the natural environment:

Climate change

The impacts of climate change on the natural environment are already becoming apparent. We can see the effects of changes to the timing of seasonal events such as spring leaf growth, flowering, and breeding patterns. Four out of every ten farmers believe that climate change is having an effect on their farm now, and a third are already taking action to adapt. As the climate continues to change we can expect to see more changes to our landscapes and the plants and animals that live in them.

⁹ See: Air Quality Strategy p7 <http://www.defra.gov.uk/environment/quality/air/airquality/strategy/documents/air-qualitystrategy-vol1.pdf>

¹⁰ See: Defra Statistics <http://www.defra.gov.uk/evidence/statistics/environment/inlwater/iwquality.htm>

¹¹ *ibid*

¹² Main Results of the 2008 UK Biodiversity Action Plan Reporting Round. See: 2010 <http://www.jncc.gov.uk/page-5398>

At the same time, our natural environment is our greatest asset: the basis on which we can build a future in a rapidly changing climate. Natural systems regenerate soils and pollinate crops, regulate the climate, cool urban areas, capture and store drinking water; and help to control floods. Our future priorities will need to take account both of the potential impacts of climate change on the natural environment and of the central role of a healthy natural environment in enabling us all to adapt to climate change.

The natural environment is equally fundamental to our plans to minimise the extent of future climate change, by reducing the amount of greenhouse gases being emitted, and by maximising our ability to remove CO₂ from the atmosphere – for example, through growth of forests and generation of renewable energy. We are committed to achieving 15% of our energy from renewable sources by 2020. A certain amount of temperature rise is inevitable and we will need to adapt to this but the global consequences for water, ecosystems, food supply, coastal regions, and public health will become more severe if emissions continue and temperatures keep rising. A balance needs to be struck between achieving our climate change mitigation and our conservation goals, both of which are legally binding and important objectives. We must deliver these goals in a sustainable way.

Demographic changes

The global population is increasing, by 2050 it is expected that it will grow by approximately 40% and GDP will grow by a factor of approximately three to four. We are already depleting the world's natural resources and clearly demand for resources such as energy, food and water increases with the number of people but the way we consume is also a major issue. There is more food available to each person today than there was 40 years ago, and it is of a higher quality and lower cost. We need to consider how to address these demands whilst minimising damage to ecosystem services. As well as ensuring supplies of food, energy and clean water, we also need to focus on the provision of regulating, cultural and supporting services such as carbon storage, flood management, soil protection, cooling cities and opportunities for recreation and enjoyment, which help us manage the impacts of climate change and sustain and enhance quality of life, health and wellbeing.

Incremental impacts

Many of our most significant environmental challenges do not stem from a single cause but result from a range of incremental impacts on the wider system. For example, many previously common species such as the house sparrow have declined considerably over the past 20 years. Unlike many of the challenges we have addressed in the past, there is no single factor that can explain such declines. Instead, there is a range of causes – including habitat loss and fragmentation, inappropriate management, environmental pollution and a range of other pressures. Similarly, there is widespread concern about the decline in the numbers of bees and other pollinators. Honeybees, hoverflies, wasps, bumblebees, moths and butterflies play a vital role in feeding people through the pollination of crops and if the current decline continues it could cost the UK economy up to £440m per year¹³. Again, there is a wide range of contributory factors including a decline in the number of wild flower meadows and other changes in the way we use land, agricultural practices; and disease. Because these are systemic problems with multiple causes we need to develop new solutions capable of addressing the whole system, to sit alongside those focusing on individual behaviours or groups.

Question 2 – Have we identified the right overarching challenges for the White Paper to consider?

a. If not, what should we focus on?

b. How should we approach these challenges?

¹³ Insect Pollinators Initiative see: <http://www.bbsrc.ac.uk/pollinators/>

Tackling the erosion of our natural value

We know that the pressures we place on the natural environment both at home and abroad are driving use of natural resources beyond their capacity for renewal, causing damage to our natural systems. The evidence shows clearly that the social and economic costs of this damage are not sustainable in the long term.

Protecting and enhancing England's natural assets

As a nation we are in environmental as well as economic deficit and, just as we must live within our means to ensure future financial sustainability, we must also show restraint in our use of natural capital if we wish to protect our childrens' prosperity and quality of life. The pressures we currently place on the natural environment include impacts on:

Our biodiversity

In modern times we have seen significant declines in our native biodiversity. Since the Industrial Revolution 24% of butterfly, 22% of amphibian and 12% of terrestrial mammal species have been lost from England¹⁴. These rapid declines, which continued well into the last quarter of the 20th century, have begun to slow and in some cases even halted or reversed. As a result of successful conservation action we have seen increases in species such as otters, bitterns, and stone curlews. Of the 33 measures used to compile the UK biodiversity indicators in May 2010, 24 (72%) were improving or showed little or no overall change over the last decade.

However, we have not yet succeeded in halting the overall decline in biodiversity. In our lowland landscapes, semi-natural habitats have often become reduced to small fragments. For example, 84% of lowland heathland has been lost since 1800, 97% of flower-rich meadow since 1930¹⁵.



¹⁴ *Lost Life: England's lost and threatened species* (Natural England 2010)

¹⁵ Fuller, RM, 1987. *The changing extent and conservation interest of lowland grasslands in England and Wales: a review of grassland surveys 1930-1984*. Biological Conservation, 40, 281-300. Farrell, L., 1993. Lowland heathland: the extent of habitat change. English Nature Science No. 1, Peterborough.

Tackling the erosion of our natural value

Many of our previously common species associated with urban areas such as the house sparrow, hedgehog, song thrush and starling have declined considerably. The British Trust for Ornithology estimated in 2009 that there were 10 million less house sparrows in the UK than 25 years ago. We need to understand why these familiar species are declining and how to address such declines. Causes of declines in habitats and species include habitat loss and fragmentation, inappropriate management, environmental pollution and a range of other pressures such as invasive non-native species, wildlife crime and development. Climate change compounds these pressures and presents new challenges. Restoring and expanding priority habitats remains a major hurdle to overcome if reversing the loss of species and habitats is to be achieved.

In March 2010 the EU agreed a new target “to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020 and to support efforts to avert global biodiversity loss”. The Convention on Biological Diversity Conference of the Parties in Nagoya (October) is aiming to secure a post-2010 international biodiversity target. The new international and EU targets present an opportunity to develop a new strategy for biodiversity in England which could set out our approach to future policy on issues such as Sites of Special Scientific interest (SSSIs) and mechanisms for delivering landscape scale habitat conservation.

An independent review into England’s network of wildlife sites ‘*Making Space for Nature*’ chaired by Professor Sir John Lawton is due to report later in the summer. It is considering whether England’s collection of wildlife areas represents a coherent and robust ecological network resilient to climate change and other pressures. We already know from progress updates that this review is likely to conclude that we do not currently have a coherent and resilient ecological network in England, but that establishing one will both help to reverse the declines in our biodiversity and deliver many other benefits to society, such as soil protection, clean water, flood attenuation and carbon sequestration. The review will make recommendations relating to the protection and management of our remaining wildlife-rich areas (taking account of landscape designations, local wildlife sites and green spaces), and how the ecological connections between them can be improved.



Tackling the erosion of our natural value

Our seas

The UK's seas are central to our economic, social and environmental health. They generate wealth worth an annual total of £47bn¹⁶ and are an important source of food, transport and recreation. Our seas are critical to our ability to mitigate and adapt to climate change. We are committed to achieving 15% of our energy from renewable sources by 2020; much of the energy required to meet this target will come from marine sources such as wind, wave and tidal technologies. Globally the world's oceans are an enormous carbon sink, having absorbed 25% of global carbon emissions from human activity over the past two centuries. The state of the UK seas is improving. We have achieved this through tighter controls on releases of contaminants, more effective licensing of marine industries, better fisheries management and the establishment of marine protected areas to protect vulnerable habitats and species. This has led to many estuaries being cleaner with an increased diversity in the number of fish species and an improvement in some fish stocks.

Many aspects of our marine environment have improved over recent decades but there are still significant impacts (e.g. those on the seabed resulting from trawling, and climate change) which need to be addressed to achieve our vision of clean, safe, healthy, biologically diverse and productive seas. Our seas are starting to show the effects of climate change. In the last 200 years, ocean acidity has increased by 30% with serious implications for marine biodiversity and climate regulation. Fish stocks are at historically low levels – only 50% of those stocks that we have been able to assess are at full reproductive capacity. At the same time, our increasing use of the sea for many competing interests is putting further pressure on marine habitats and species. We must make sure that the marine environment can cope with these changing conditions and increasing pressures.

Across Europe there has been recognition of the fact that existing legislation to protect the marine environment was sectoral and fragmented, and failed to deal with the cumulative impact that man-made pressures have on marine ecosystems. The reform of the Common Fisheries Policy and the need to achieve Good Environmental Status in our seas under the Marine Strategy Framework Directive will set the context for improving the way we manage marine resources across Europe, with all Member States playing a part.



¹⁶ See: <http://chartingprogress.defra.gov.uk/>

Tackling the erosion of our natural value

Within the UK, implementation of the Marine and Coastal Access Act 2009, as well as reviewing our domestic arrangements for managing our fleets and fish stocks, will lead to more strategic and integrated future management of our seas. The Marine Policy Statement, being developed as part of our new marine planning system, will provide consistency and clarity in the management and use of our seas across the UK and ensure that biodiversity and environmental protection is integrated into decision making. It will govern the development of marine plans which, with the involvement of local communities, will define what we want to achieve from our marine area and shape the decisions that need to be taken to achieve that vision. For the first time we will be planning what we want to achieve with our seas and integrating this with our terrestrial planning system, recognising the interconnectivity of our land and seas, and protecting our unique biodiversity and ecosystems across administrative boundaries. Marine Conservation Zones will complement existing Marine Protected Areas and those currently in the process of being designated under European Legislation. The aim is to create a coherent network that will conserve important marine ecosystems for future generations.

Our rivers and water bodies

The UK's water quality has improved considerably over the past 20 years. In 2009, 78.5% of monitored river lengths were assessed as 'good' in relation to chemical quality (compared to 55.2% in 1990). 72.0% of monitored river lengths were assessed as 'good' in relation to biological quality (compared to 55.4% in 1990). 77% of water bodies are assessed as having flows compliant with the current environmental standards, with just 6% falling significantly below this goal. 46% of water bodies can support further abstraction that will be reliable for 95% of the time, while 22% of water bodies can support new abstractions for less than 30% of the time.

While improvements have been made by addressing chronic pollution of water bodies, there is much more to be done. Dominant issues to be addressed include diffuse pollution from agricultural and urban land, physical modifications of water bodies and threats from invasive species. In the future climate change and increasing demand for water in homes and businesses, is expected to reduce the predictability and reliability of water resources. We can expect a decrease in summer rainfall, particularly in the South East where it is projected to fall by 8% in the 2020s, by 19% in the 2050s and by 23% in the 2080s¹⁷. Impacts of decreased water availability include: reduced stream flow, which affects water quality and biodiversity, and less water for abstraction for the public water supply, and use by business and farmers.

The EU Water Framework Directive sets out the blueprint for further action on the water environment and requires us to prevent further deterioration and aim to restore all water bodies to good ecological status by 2015. This raises the bar for management of rivers, ground waters, lakes, wetlands and estuaries and requires an increased understanding of the interactions between land and water management. In 2009 26% of water bodies were classified "good" and this is expected to rise to 31% by 2015. There is therefore much to be done to deliver the objectives of the WFD. However while this is a challenge it provides us with an opportunity to think differently about how we can protect the water environment, taking an holistic view of land and water and ensure that we take appropriate action to protect ecosystem function.

Our air

Air quality has improved significantly in recent decades, with benefits to human health and the natural environment. Policies to tackle emissions from homes, transport and industry have seen emissions of sulphur dioxide (SO₂), particulate matter (PM₁₀) and nitrogen oxides (NO_x) fall by 86%, 53% and 49% respectively since 1990¹⁸. European legislation sets national ceilings for emissions of key pollutants and limits for pollutant concentrations in air, with the risk of substantial fines for non-compliance.

¹⁷ UK Climate Projections 2009, South East central estimate, based on medium emissions scenario

¹⁸ See: <http://webarchive.nationalarchives.gov.uk/20100304105307/http://www.defra.gov.uk/evidence/statistics/environment/airqual/download/pdf/100211%20-%20stats-release.pdf>

Tackling the erosion of our natural value

The rate of decline in some air pollutants is now levelling off and improvements are increasingly costly to achieve. However, air pollution still reduces life expectancy by an average of six months, with social costs estimated at £8 to 17 billion per year. It also damages plants and animals, impacting on biodiversity, affecting valued habitats and crop yields. This impacts on the services that ecosystems provide – the effects are more difficult to quantify and monetise than human health impacts, but are nevertheless important. Working towards compliance with EU air quality limits for particulate matter (PM₁₀) and nitrogen dioxide (NO₂) in our urban areas is the short-term priority for the UK and other EU Member States. Working towards compliance with EU air quality limits for particulate matter (PM₁₀) and nitrogen dioxide (NO₂) in our urban areas is the most urgent priority for the UK and other EU member states. In the short term, the most pressing compliance challenge relates to NO₂ levels in large urban areas including in London.

In the longer term, the UK commitment to build a low carbon economy will reduce air pollution but the choices we make will affect the scale of improvements. Optimising take up of ultra-low carbon vehicles, renewable sources of energy not involving combustion, energy efficiency measures and reducing agricultural demand for nitrogen are some of the measures that will help to deliver future air quality and climate targets in tandem, benefiting human health and our natural environment.

Our soil

Soils provide a wide range of essential functions for society: including food production, water management, support for biodiversity and carbon storage. UK soils store over 10 billion tonnes of carbon. However, their ability to continue to provide these important functions in future is threatened by unsustainable soil management, drainage, industrial pollution, development pressure, extraction and climate change. Our agricultural soils can suffer degradation, primarily from erosion by wind and water, compaction and organic matter decline, and although important progress in tackling soil degradation has been made, it still costs the economy around between £150m-£250m a year.



Tackling the erosion of our natural value

Existing policy measures are focused on preventing degradation, and include the Soil Protection Review, a requirement of cross-compliance under the Common Agricultural Policy which is applicable to all those (currently around 107,000) who receive payments under the Single Payment Scheme. There continues to be good uptake of soil protection options by farmers through Environmental Stewardship schemes; and a range of supporting policies also contribute to soil protection, including the England Catchment Sensitive Farming Delivery Initiative, which provides targeted advice to farmers on soils in priority river catchments.

We anticipate that threats to soil quality may be magnified by a changing climate, and increasingly the focus of policy will need to be on building the resilience of our soils for future generations. This will be particularly important for peat soils. The UK has around 15% of Europe's peat resource, and our peatlands are already significantly degraded as a result of human activities and pollution. As well as supporting valuable wildlife and playing a vital role in the water cycle and flood management, peat soils are a significant and concentrated store of carbon (five billion tonnes). The protection, sustainable management and careful restoration of our peatlands is therefore essential if we are to maintain the ecosystem services that they provide.

Question 3 – What are the existing policies and practices aimed at protecting England's natural assets (including but not limited to those set out above on our biodiversity, seas, water bodies, air and soil) that currently work most effectively?

a. What works less well – what could we stop doing or do differently?

Question 4 – What mechanisms should we focus on to ensure we manage our natural systems more effectively in future?

a. How should we define success?

b. How can we agree on common goals and assess our progress towards them?



Tackling the erosion of our natural value

England's footprint on the natural environment overseas

As consumers and businesses we have an impact on the health of the natural environment overseas as well as at home. This impact is a result of the natural resources used in the production or processing and transportation of the goods and services we import. For example:

- Water – the average consumer in the UK uses 150 litres of water a day (equivalent to one full bath) but a further 3000 litres of water per person, per day are embedded in the food and goods which we import. Globally, one billion people do not have sufficient access to clean drinking water.
- Timber – we import timber to meet the needs of our construction and clean energy industries and timber is used in the production and processing of many goods for the UK markets. Illegal logging in some of the world's poorest countries undermines efforts to tackle deforestation and hence tackle climate change.
- Palm Oil – is the world's cheapest and most consumed vegetable oil. Expansion of palm oil plantations is the most prevalent cause of permanent forest loss in South East Asia and also drives the conversion of carbon-rich peatland soils to plantations resulting in globally significant greenhouse gas emissions and loss of valuable tropical habitats, threatening species like the Orangutan.
- Fish – in 2008 the UK imported around 110,000 tonnes of cod, over 65,000 tonnes of haddock, 80,000 tonnes of shrimps and prawns and over 110,000 tonnes of tuna. The Food and Agriculture Organisation reports that global fish stocks continue to decline as a result of exploitation.

We also rely on many of the wider services which are provided to us by healthy ecosystems in other countries. For example, regulating our climate, providing new medicines, and providing healthy soils and water supplies that can grow the food we need to import as part of a balanced approach to our food security.



Tackling the erosion of our natural value

In last 300 years global forest area has shrunk by approximately 40%. Forests have completely disappeared in 25 countries, and another 29 countries have lost more than 90% of their forest cover¹⁹. Since 1900, the world has lost about 50% of its wetlands²⁰. More than 75% of world fisheries are fully or over-exploited. Overall, approximately 60% of the Earth's ecosystem services have been degraded by human impacts in the last 50 years²¹.

There are significant economic costs to us from the degradation of ecosystems overseas as well as economic opportunities to be gained from protecting them. For example, deforestation is responsible for approximately 18% of greenhouse gas emissions and is therefore a major driver of dangerous global climate change. In developing countries it is often the poorest who rely most on the materials and services they obtain directly from a healthy natural environment and if properly valued and maintained, these services can help build economic prosperity. This is part and parcel of the Government's approach to international development and poverty alleviation. We aim to reduce our impact on natural resources and ecosystems abroad, whilst maintaining our support for increased free trade and sustainable development with other nations.

In England, there is a role for Government, businesses and consumers to help ensure that our supply of products and goods protect the range of important services provided by a healthy natural environment abroad. We need to both reduce our own environmental footprint and promote better environmental management in other countries in order to benefit our own and the global economy.

Question 5 – How best can we reduce our footprint on the natural environment abroad, through the goods, services and products we use?



¹⁹ See: www.teebweb.org

²⁰ TEEB Interim report. See: www.teebweb.org

²¹ Millennium Ecosystem Assessment 2005

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For too long, we have suffered from a poverty of ambition in our environmental goals. Despite the wealth of scientific and economic evidence that demonstrates the value of a healthy natural environment and the real financial and social costs associated with its degradation we have been content simply to seek to limit the damage, rather than aspiring to grow and enhance that value.

A greater role for the big society

The Coalition Government has set out a clear commitment to shifting the balance of power from 'Big Government' to 'Big Society'. We want to give individuals, businesses, civil society organisations and local authorities a much bigger role in protecting and enhancing the natural environment and a much bigger say about our priorities for it. Our first instinct should be to devolve power and decision making to local level and this means providing the incentives and information needed to support those who want to take a lead in securing natural value for our communities, families and for future generations.

In seeking to encourage businesses, people and communities to manage and use natural resources in a sustainable manner we need to build on best practice – both here in England and in other countries – and develop new and imaginative approaches. We need to make sure that we have a framework which allows innovation, led by communities, to happen. In particular, we want to look at the scope for actions to offset the impact of development on biodiversity.

Question 6 – What best practice and innovative approaches to protecting and enhancing our natural environment do you think should be considered as we develop the White Paper?



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Enabling citizens and consumers

Our relationship with the natural environment is part of our day-to-day lives. It is both our shared heritage and something uniquely personal to each of us. Whether our experience of the natural environment comes from time spent in our own back garden, a local park or the open countryside; the natural environment influences our quality of life, health and wellbeing.

Over the past 20 years, there has also been an increasing focus on the role of the consumer in influencing the wider environmental behaviour of businesses and the markets. Environmental factors are already an important part of many people's decision-making in our day to day lives – on what we buy, how we travel, what we eat and how we dispose of waste. And as the numbers of consumers for 'green' products have risen the prices have fallen. Consumer-driven campaigns such as those against the use of disposable plastic bags and in favor of reducing food miles have been successful in raising the profile of environmental issues both locally and globally.

Question 7 – How best can we harness and build on public enthusiasm for the natural environment so people can help improve it through local action, as informed consumers or by shaping policy?

Enabling civil society

Civil society organisations play a vital role in helping to manage and conserve our natural environment. National campaigning groups and locally-focused charities channel the passions of hundreds of thousands of individuals. They have an important role as independent advocates, challenging and influencing decision making at a local, national and even global scale. They are frequently much more effective than Government in building the capacity of communities to influence their environment. And they often have more success in generating the trust needed to influence a shift to more sustainable behaviours at home and at work. Civil society organisations play a key role in the management of valued sites, particularly at the local level and can provide an effective governance model for the management of our natural assets.

Question 8 – What should be our vision for the role of Civil Society in managing and enhancing the natural environment and for engaging individuals, businesses and communities in setting the agenda for that work?

Enabling local action

The Coalition Government has embarked on a radical programme of reform to free up local councils from top-down bureaucracy, and devolve responsibility to the local level. Within this new framework, local authorities have a key role in protecting and enhancing the natural environment. Local authorities can help build a strong society where individuals and communities are more able to take on responsibility to improve their environment. The value of nature is increasingly being recognised for supporting local jobs, housing, education, public health, recreation and community safety. Local Planning Authorities have a particular role, to identify the necessary environmental infrastructure needed to support growth, and ensure that the real value of nature's services has been considered as part of the appraisal of local planning policy.

Whilst there have been good examples of progress on the natural environment at the local level, further innovation will be needed if we are to protect and enhance nature's services which local communities rely upon for prosperity and quality of life. This will require a better understanding of the natural environment locally, its social and economic importance.

Where mandatory minimum environmental standards exist, for example European requirements on air quality and habitat protection, the liabilities for any local breaches currently rest with central Government. In creating a framework of greater freedoms for local councils, the right balance must

Building and enhancing our natural value



be struck between the sharing of risks and costs. Central Government will continue to have a role in providing an enabling framework. Local government increasingly has a role to work with their partners and local communities to decide priorities where they can make a real difference, devise innovative ways of working, and support each other in developing best practice. In addition, there is a new opportunity to hand over control to local people, in providing services which benefit the natural environment and directly managing it for the future. Some issues will require partnership working between neighbouring local authorities, because nature and its services do not align themselves neatly to administrative boundaries. For example, on water management, biodiversity and habitat protection, green infrastructure and air quality. The Government is also considering ways to support Local Economic Partnerships, and provide an opportunity at this level to further promote the economic benefits from a healthy natural environment and all its services.

Question 9 – How best can Government incentivise innovative and effective action on the natural environment, across England, at the local level?

- a. How best can local Government and other local partners work together to improve local outcomes on the natural environment, and pursue a more integrated approach linking a healthy natural environment to economic prosperity, sustainable development and a better quality of life, health and wellbeing?**
- b. What are the most effective mechanisms for managing the natural environment where cross-boundary issues are involved, and making the link to other mechanisms for economic growth, transport and planning?**
- c. How best can the value of the natural environment be considered within local planning?**

Building and enhancing our natural value

Creating a smarter, greener economy

The whole economy relies on a healthy natural environment. Our businesses and industry rely on it for resources and materials – from the timber, water and raw materials required in construction and manufacturing, to the natural functions which filter air and water pollution and maintain the healthy soil required for the farming and food sector. And all sectors can save money by using these resources efficiently. For too long we have failed to challenge the misconception that we must choose between a healthy natural environment and economic growth. The evidence shows that in order for the economy to continue to grow at a sustainable rate consumers, businesses and the economy as a whole need to work with rather than against the grain of nature.

New jobs and opportunities can be created from activities which protect and enhance the natural environment. Growth in these expanding or new sectors will create jobs and business opportunities, for example through specialist skills in the water and waste industry, sustainable tourism, renewable energy from organic waste and new medicines from plant research.

However, the move to a green economy relies on the correct price signals and currently the market fails to price the value of the natural environment. In order to correct this, the costs of environmental degradation need to be better understood, and reflected in business, investment and consumer decisions. This is a complex issue, especially given the gap which often exists between those who benefit from nature's services and those who own, invest in or manage them. However, progress can be made. In England, there are already examples where companies are reflecting the wider value of nature's services in their payments to those who manage the natural environment. We need to think about how we might facilitate such approaches to help ensure that our economy and society is set for smarter, greener growth. Innovation has a key role to play, and environmental regulation can raise performance when used wisely. As a country, we also need to consider ways of reflecting the value of a healthy natural environment in the ways we assess and value growth, to show that the state of our natural assets is very much linked to our country's productivity and progress.

Question 10 – How best could the economy reflect the true value of nature's services in the way business is done, to drive smarter, greener growth?

Question 11 – Responsible businesses are already looking for ways to reduce their impact on the environment. How can we encourage more action like this?



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Managing our land: thinking big and joining up

We know that land provides us with multiple benefits. For example, agriculture is the major land use in England, covering around 70% of our country. But farmed land does not simply provide us with food and other crops, important as those things are, but also with rural jobs, places for wildlife to thrive and people to enjoy nature. We know that we need to secure a sustainable food economy to support an increasing global population but that food economy must allow a healthy natural environment to continue providing the wider benefits and services it gives to us, because ultimately, our food security relies upon nature's services. Similarly, England's trees, woods and forests, ranging from individual street trees to networks of woodland in the countryside are a unique asset – rich in biodiversity, popular places for recreation and leisure, producers of products such as fuel and wood for use in our daily lives and an important part of our response to climate change. We need to manage and expand this resource sustainably – for our generation and for future generations – recognising all of these multiple benefits.

The natural environment creates benefits in our towns and cities as well as in the countryside – it contributes to liveable, attractive and prosperous places to live and work in. Planning decisions which incorporate the value of the natural environment can produce multiple and diverse benefits for people, local businesses and the environment. For example, we now know that we can manage flood risks by taking a much broader view than we have in the past, using woodland, soils and salt marshes as natural barriers to reduce run-off or protect our coastal areas. We know that peat bogs do not only operate as important sinks for carbon and key habitats for biodiversity but as a vital component of the water purification systems for many of our major cities. And in those cities, we know not only that parks, green spaces and waterways are valuable to the health and wellbeing of individuals and communities but also that, properly managed, they form a network of “green infrastructure” that can help us manage surface water flooding, filter pollution and cool the city air by between 6 and 12°C²² – something that will become increasingly vital in a changing climate.

This understanding of the interconnected nature of our natural systems is the basis for a growing consensus that, on issues such as planning, food production, water, flood risk management and biodiversity, where the impacts of our decisions do not stop and start with administrative boundaries, we need to move towards more integrated, management approaches that work at the spatial scale that best addresses the challenge. These are often called “landscape scale” approaches. At the same time we need to start making decisions that encompass all of the multiple benefits we receive from



²² Goode, D. (2006). Green Infrastructure. Report commissioned by the Royal Commission on Environmental Pollution. Available at: www.rcep.org.uk

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land rather than just focusing on one objective at a time – an approach which is wasteful at best and at worst limits our capacity to manage real risks such as flooding and climate change. Recommendations by the *Making Space for Nature* review will address how we can embed a landscape scale approach to restoring habitats.

We receive multiple benefits from and make multiple demands on our land. Pressures on land are increasing because of climate change (both mitigation and adaptation), population increase, other demographic change (such as inward migration to the South of England), economic growth, societal preferences for living alone and in some cases new technology²³. We need to respond to these pressures in a sustainable way that protects and enhances the ecosystems services upon which we all rely. In our Coalition Programme the Government stated that it will publish and present to Parliament a simple and consolidated national planning framework covering all forms of development.

Question 12 – What are the barriers to joining up and seeking multiple benefits from our natural assets?

Question 13 – What are the barriers to thinking big and taking a landscape scale approach to managing our natural assets?

Influencing Europe and working internationally

The UK Government and the Devolved Administrations work together for a strong UK position in EU negotiations over environmental policy. The UK will be a positive participant in the EU, to influence and shape their activity. There is already a comprehensive suite of EU environmental regulation in place, covering water quality, air quality, habitats and industrial pollution. The Government's focus will be to ensure this is implemented in the most appropriate and cost-effective way and that the EU adopts a 'smarter regulation' approach – reviewing the need for old or ineffective measures when possible to do so. As the Government presses for EU Budgetary reform, in the context of reduced public spending, we will ensure that available resources are used effectively. We will press for reform of the Common Agricultural Policy and the Common Fisheries Policy so that expenditure is better targeted at environmental challenges that are most significant from a pan EU perspective. The economic and social value of a healthy environment means that the EU should consider the way in which all its measures could have a positive impact and help protect or enhance it. Encouraging better integration of these issues within the EU will be key.

The UK is supporting strong and collective EU action on a range of international environmental issues. These include negotiating new targets to protect biodiversity under the Convention on Biological Diversity, maintaining the moratorium on commercial whaling, taking forward the global deal on climate change, tackling illegal logging in developing countries, establishing sustainability criteria for biofuels and maintaining the ban on ivory sales. The UK is also supporting the establishment of a new International Platform for Biodiversity and Ecosystems Services – which will assess and monitor the changes to our global natural capital, as well as the important services we derive from them. We are also working for a green economy and sustainable natural resource management through the G8/G20 and preparations for the 2012 UN Conference on Sustainable Development (Rio+20).

Question 14 – What should be the priorities for the UK's role in EU and international action, to protect and enhance the natural environment at home and abroad?

And finally

Question 15 – If you could choose just one priority action for the Natural Environment White Paper to drive forward locally, nationally or internationally – what would it be?

²³ Land Use Futures: Making the most of land in the 21st century, which was published in February 2010

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