RICH IN NATURE





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FOREWORD

The world can change so much in 25 years.



One generation ago, in 1992, global leaders proclaimed the Rio Declaration on sustainable development. In the same year, they agreed the United Nations Framework Convention on Climate Change. These high-level agreements have changed the world, in particular helping to clean up energy production.

Now the UK Government is setting out an Environment Plan for the next 25 years. I am delighted to support that ambitious aim, which should help to transcend the short-termism of politics and day-to-day living, to make sure that our country is a wonderful, wildlife-rich place to live.

At WWT, in our 70th anniversary year, we are also setting out our own plans for the next 25 years. There are so many aspects of our natural world that are continually damaged—our water, our wetlands, our wildlife—that ensuring a country rich in nature in 2040 will need some truly inspiring leadership.

In this report, we offer our recommendations to Government for its plan. There are many other areas to work on—invasive species, diffuse pollution, and lead ammunition to name but a few—but here we offer our thoughts on the most transformative, affordable and feasible changes to benefit nature in the heart of England's towns and cities, across the countryside and coastlines, and around the world.

Photo Credit: Teri Pengilley





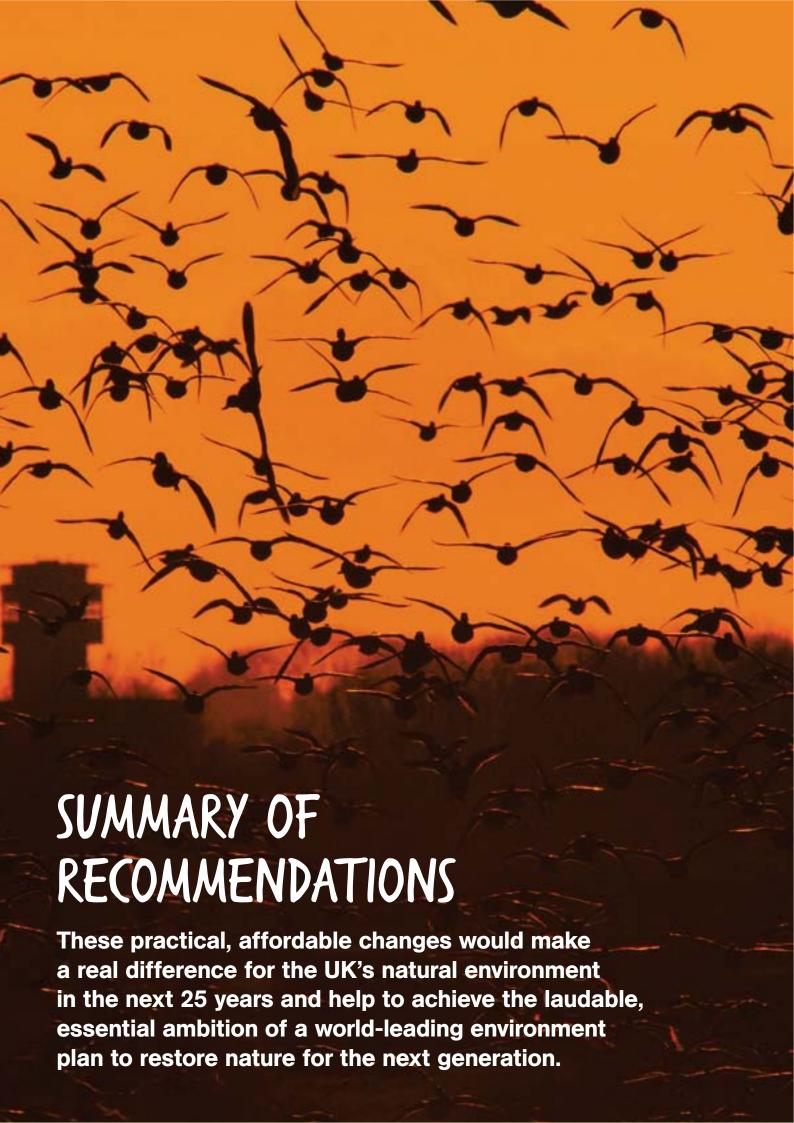
INTRODUCTION



This year, our government is due to produce a document of potentially monumental impact: a report that will be scrutinised by everyone with an interest in our environment, so... well, everyone with a pulse! The Environment Plan sets out a framework for the future of nature in this country for the next twenty five years, and this timescale is vital. Perhaps the greatest challenge facing conservation is that a standard government's term is not sufficient to implement real change and strategies. Everything takes time and long-term commitment, and this statement of intent could affect the choices of an entire generation.

The British countryside I grew up in and adore is in flux, affected by a bewildering multitude of complex conundrums. We need to make sure that people in government are seeing, feeling, tasting and touching those changes for themselves, understanding potential impacts on an experiential level - and that they use those experiences to inform decisions on everything from economics to planning and healthcare. We need clear systems to put nature in the heart of democratic decision-making. It's essential that we have powerful advocates in high places, and that people care as we do, for every part of the puzzle, from the bugs and the birds, to the wider wonders of our wild places. The environment cannot be perceived as a troublesome shackle that is always dragging back progress. Nature must be seen as a treasure to be cherished.

STEVE BACKSHALL



In this report, we make the following main recommendations:

1.

Commit to a 25 year environment plan, with open public and Parliamentary consultation

- Regularly update both Houses and relevant Committees on progress with the plan
- Seek cross-party consensus and establish key components of the plan in legislation

2.

Ensure UK environmental protection is as strong or stronger in our new relationship with the EU

- Strengthen international collaboration and leadership on biodiversity and climate change
- Account for the impacts of UK consumption on the environment in other countries

3.

Introduce an annual Natural Wealth Statement to account for our natural capital

- Set a suite of natural environment objectives and milestones for delivery, including creating 100,000 hectares of new wetlands by 2040
- Establish a Natural Wealth Fund, capitalised by a levy on exploitation of non-renewable natural assets, to fund future investment in natural wealth

4.

Appoint catchment commissioners, with powers of mapping, coordinating and commissioning

- Release the data sets required for multi-habitat, multi-benefit ecological opportunity mapping
- Ring-fence £175 million of new flood funding for investment in natural capital assets

5.

Establish guidance and accreditation for recognised green prescription providers

- Set equitable access to natural greenspace standards as a planning objective for local authorities
- Require sustainable drainage in all new developments and publish a national sustainable drainage retrofit strategy

NATURAL WEALTH

The UK has long been a leader of change.

In the Industrial Revolution, the UK was a trailblazer of new ideas that created jobs, goods and services and improved the lives of millions of people, changing the world forever. We call this economic growth.

But that growth came at the expense of nature. To fuel our economic appetite we used up natural assets, like coal, gas, green spaces and wetlands. 100,000 hectares of UK wetlands were destroyed every year between 1840 and 1880 to clear the way for development and that destruction has continued. Each year, we took more from our environment and from our children's inheritance without investing in the natural assets that will sustain their future.

Now the UK is at the forefront of a new change. We are pioneering a new way of thinking that recognises nature as the bedrock of our economy. There would be no economic growth without fertile soil, breathable air, clean water and thriving habitats and species. We call this our natural wealth, or "natural capital".

Wetlands and the wildlife they support are a key component of our natural wealth. At WWT, our mission is to protect and restore wetlands because they are fabulous. They sustain our wildlife and enrich our lives. But we appreciate more than ever that our wetlands are also integral to our economy and social wellbeing.





100,000 Hectares

We are calling for the creation of 100,000 hectares of new wetlands.

The 25 year plan for nature

The Government has recognised that we cannot continue to grow as a society without investing in nature. It is working on a 25 year plan to restore the environment. We support that bold, modern objective.

We are calling for the creation of 100,000 hectares of new wetlands as part of the Government's 25 year environment plan, as part of a set of environmental objectives for 2040—clean water, pure air, healthy habitats. Creating 100,000 hectares of wetlands will cost money, but we will be richer as a result.

This should be part of a natural revolution in Government, recognising our need for nature. We have to put the environment as a whole at the heart of our decision-making.

So, to support the Government in its 25 year plan, and to help deliver 100,000 hectares of new wetland, we propose a simple series of changes from the top to the bottom of the way our society works:

International

No country can save nature alone: only by working together can we ensure we leave a thriving natural world for the next generation. As the UK's relationship with the EU and the rest of the world changes, we must ensure that environmental protection is strengthened. The 25 year plan is a chance to set the targets, funding and regulations to make this possible. It should also be a plan to play a leading role in other international agreements, from climate change to species protection.

National

Our natural wealth is invisible in Parliament. Each year, the Budget Statement sets out economic results with scant regard for nature. We need a "natural wealth statement" that makes our natural wealth a key part of the Budget, plus a "natural wealth fund" to ensure that we provide for future generations.

Regional

The way we spend money on the environment is often inefficient. It can be uncoordinated, short-term and untargeted. We call for catchment commissioners across the country to coordinate investment in our natural wealth in a way that works with the local environment.

Local

The poorest and most vulnerable people have least access to nature, particularly among children. We propose national support for green prescription schemes and planning guidance to improve equitable access to high-quality natural environments.

Crucially, these advances will complement direct conservation approaches, such as species and habitat protection under the EU Birds and Habitats Directives and under national legal protections, including Sites of Special Scientific Interest (SSSIs) and Marine Conservation Zones (MCZs). Accounting for nature and natural capital investment should be seen as a valuable way to incorporate nature's importance in decision-making, but they should never be seen as an alternative to legal

Together, these steps will improve lives today and in the future. They will help restore our wetland environments and the species that depend upon them and maintain our natural heritage. They will make us more resilient to risks like flooding and creating safer, greener places for communities and families. They will reinforce the natural assets that underpin our businesses. Crucially, they will help make us the first generation to invest more in nature than we take away.

protection for our environment.

A PUBLIC PLAN

The Conservative Manifesto committed the Government to develop 'a 25 Year Plan to restore the UK's biodiversity, and to ensure that both public and private investment in the environment is directed where we need it most'.

To realise such a high ambition, the plan will need the support of the public. It should be understood and valued by communities across the country: the businesses that depend on nature, the families who enjoy it, and the parents concerned for the wellbeing of the next generation.

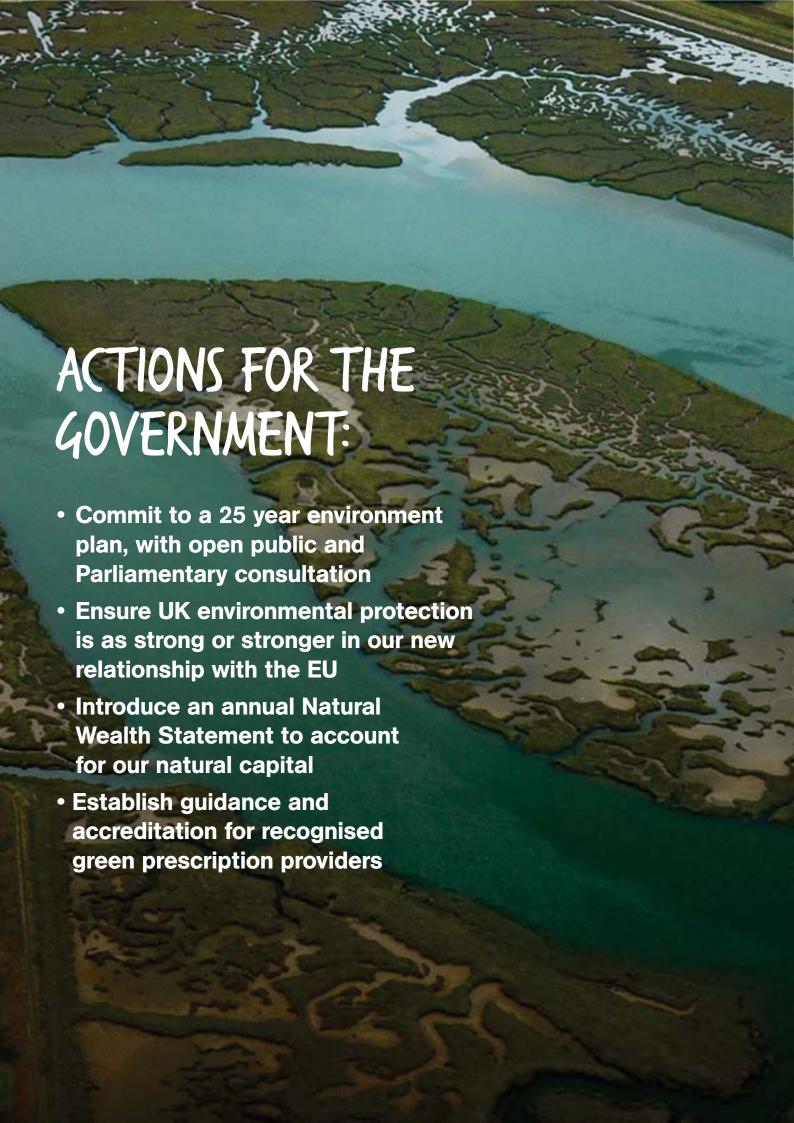
At WWT, we asked some of our members what they would like to see in the plan. The first replies have been inspiring, challenging and uplifting and they have helped to inform this report. Thanks to our members for their contributions.

If the Government publishes a plan quietly, without consulting the public on their priorities and aspirations, the plan is unlikely to achieve its transformational aim. The Government has signalled that the watchwords of the plan will be openness and localism: with that in mind, our first recommendation to Government is to make sure that the communities that care about nature can be part of the production of the plan.

Over the months to come, we will continue to work with our members and the public to help inform the plan. We hope that Government will do the same and ensure that everyone can have a say in developing a plan for which there is so much at stake.









OUR WAY TO 100K:

a wetland vision

Wetlands are diverse and dynamic, often fragile environments: marshes, ponds, lakes, fens, rivers, floodplains, swamps and estuaries—any land that's permanently or periodically saturated with water. These environments are a crucible for wildlife and they occur across our landscape, from uplands and seas to the inner city.

Our goal of 100,000 hectares of new and restored wetlands is ambitious, but it is realistic and it can be delivered in a way that delivers huge benefits for people and wildlife. Success will mean some large-scale habitat creation, like WWT's 300 hectare saltmarsh at Steart in Somerset, but it will also mean lots of small scale changes across the landscape. Collectively these can deliver major environmental and social benefits.

In the uplands:

Today, only 4% of England's 355,000 hectares of upland deep peatlands are in good ecological condition. The Peak District, the Pennines, the North York Moors, Bodmin Moor, Dartmoor and Exmoor, are all important wetlands and a part our natural heritage. What's more, restoring and preserving deep peat can store huge amounts of carbon (reducing climate change), make millions of pounds worth of improvements in water quality, soak up flood waters and create wonderful, wild landscapes vital for some amazing species. We support the recommendation of the Committee on Climate Change to triple the amount of peatland being restored.

In the lowlands:

Three quarters of England is farmed, but farm wetlands have been disappearing. Farm wetlands can filter out water pollution and provide habitats for wildlife (including pollinators and other invertebrates), and a network of small wetlands could combine to help clean up our farmed landscape and benefit both us and its wildlife.

On our coasts and estuaries:

Coastal wetlands can help guard against flooding and climate change risks and provide valuable habitats for wildlife. On the banks of the Severn Estuary about 12,000 ha of low-lying land is potentially vulnerable to tidal inundation under climate change projections. Together with our partners in the Severn Vision project, we would like to see 6,000 hectares of intertidal and associated habitat created on the banks of the Severn, which could deliver millions of pounds of value to local communities and help protect them against coastal flooding.

In our cities:

Wetlands can be important parts of a cityscape. They can create places for people to enjoy, with health and wellbeing benefits. For example, sustainable drainage systems can replicate natural processes that reduce flooding. New developments should already incorporate sustainable drainage wetlands wherever possible and many communities and companies are looking at how to incorporate wetlands in established developments.

INTERNATIONAL ACTION

No country can save nature alone. Of all political challenges, environmental protection is perhaps the most inherently international.

Many of the species we think of as "our wildlife" we share with others. For example, Bewick's swans (featured on WWT's logo) fly thousands of miles from the Russian arctic tundra and through the EU before they arrive with us in the UK each winter. The Bewick's swan is a European protected species and the swans' protection relies on cooperation all along the flyway.

Our climate is a shared system. The process of decarbonisation in the UK—so vital for reducing our greenhouse gas emissions—only makes sense as part of an international effort. The part the UK has played in prompting international action has begun to change the world. The next step is for the UK to ratify the 2015 Paris climate deal that we helped to forge.

Other challenges like invasive, non-native species can only be faced effectively by cooperating with others too. New diseases like ash die-back and bluetongue cost commercial forestry and farmers millions of pounds. It is much cheaper and more reliable to tackle these threats before they reach our shores by cooperating.

This cooperation is founded on regional and global agreements. For example, many of the UK's most important laws for wildlife, air and water have come from the EU and are only partly transferred into UK domestic law. Some laws—like the Invasive Alien Species regulation, which will be vital for wetland conservation—could be lost entirely.

More broadly, international agreements like the Ramsar Convention on wetlands have a global reach, but their rules are not as strong as the binding laws set out by the EU. The EU offers a more effective form of international environmental cooperation than any other multilateral framework in existence. They have helped to turn the UK from "the dirty man of Europe" to a leader in environmental protection.

However, our relationship with the EU and the rest of the world is changing. With any change comes risk. In this case, there is a critical risk that increasing insularity will undermine environmental protection, both in terms of the rules we adopt (like the Birds Directive, or the Water Framework Directive) and the part we play in international efforts. At home, old certainties could be lost like the Common Agricultural Policy helping to sustain farming. We must ensure that their replacements are ambitious in their support for wildlife-friendly, nature-positive land management across the British countryside.

The 25 year plan is a crucial opportunity to head off those risks and maintain and strengthen the UK's part in international conservation efforts. We must not step back from international environmentalism, but step forward to lead the world.

We recommend that the Government uses the plan to set out how it will not only maintain but strengthen the level of environmental protection in the UK, however our relationship with the EU changes. The plan should be a manifesto for improved environmental collaboration, as well as a plan for full implementation of international environmental law. This should almost certainly involve new legal protection, alongside innovative ways of accounting for and financing investment in nature.



INTERNATIONAL ACTION

Taking responsibility

In economic terms, the poorer you are the more important natural wealth is for your livelihood. In the UK, the food sector alone is responsible for about 6% of GDP—a hefty component of the economy—but in poorer countries, ecosystem services can be even more important. Natural capital accounts for around 90% of GDP for the 20 million poorest people in Brazil and 47% of GDP for 350 million small-scale farmers in India. For example, subsistence farmers depend closely on the condition of the land they farm.

At WWT, we see some of this first hand through our work in some of the most natural-capital dependent countries in the world. Unsustainable agriculture in Madagascar has destroyed or degraded almost every wetland. In the last 15 years more than 50% of Cambodia's wetlands have been lost. These losses have exacerbated the poverty of thousands of people whose livelihoods depend on the land and clean waters.

This means that every pound spent on restoring nature in poorer countries can deliver even more value. Our work on Madagascar Pochard in Madagascar and Sarus cranes in Cambodia also helps thousands of people who are most reliant on nature. By restoring the wetlands and working with the local communities on natural resource management, we are also enhancing the livelihoods of wetland-dependent people.

As well as an ecological responsibility to act, we also have a moral responsibility. The intensification of land use around the world is largely driven by consumption in developed countries, including the UK. For example, the water used to produce food and goods we import is worsening water shortages in the developing world. Most of our tap water comes from UK sources, but most of the water used to create the goods we use ("embedded water") comes from abroad.

Our economy and wellbeing also depend on natural assets around the world. In a global economy, British companies' supply chains are at risk from impacts on natural capital overseas and England's potential future wellbeing is eroded with the loss of global natural capital. Think of the oil we import from the Middle East, the rare earth elements that fill our phones, the foods we enjoy all year round-all of this consumption depends on the environment in other countries Even as we start to clean up the environment in England, we are exporting our exploitation of nature abroad. This is unsustainable in the long-term and inequitable in the short-term.





NATIONAL ACTION

Natural Wealth

Even a ripple in UK economic fortunes causes a furore. Why is it, then, that nature targets can come and go unremarked? It is certainly not that people are unconcerned. When the environment is on the agenda, the public is ardent in its green commitment: over half a million people recently signed a petition to defend the EU Nature Directives. But the UK continues to perform poorly on a host of environmental measures: internationally binding biodiversity targets; air quality laws; flood risk management; and water quality.

Part of the difference is that economic results are reported regularly and publicly to Parliament. For nature to do the same, we need targets and milestones for the long-term plan, combined with regular and prominent reporting on progress. Every year, alongside the Budget Statement, the Government should deliver a "Natural Wealth Statement". When we account for monetary wealth, we should also account for our natural wealth.

Of course, we will never be able to give an economic value to all of the wonders of nature and nor should we try. It will always be worth saving nature for its own sake. At the moment, though, the value of nature is often taken to be £0—it is completely ignored in decision-making. A natural wealth approach is one way to help ensure that we afford nature the protection and investment it deserves.

THESE STEPS WOULD HELP TO STRENGTHEN THE UK'S ECONOMY AND ENVIRONMENT.

Headline targets

Creating clear objectives will not necessarily require many new targets. The UK already has legal commitments to elements of natural capital like air quality, water quality, and biodiversity. These should be set out as the headlines of the 25 year environment plan, as part of a suite of natural environment objectives, comprising:

- Habitat protection and creation goals, including 100,000 hectares of new wetlands
- Abundance and diversity objectives for UK wildlife
- Quality controls for key natural capital assets, like clean water, clean air and rich soils
- Access to natural greenspace standards

Targets should be set on the basis of independent scientific advice from the Natural Capital Committee and other experts. A "ratchet mechanism" should be built in for tightening targets if necessary.

Natural Wealth Statement

While many long-term environment targets already exist, they are not afforded the same importance in Parliament or in decision-making as other economic objectives, like the Government's growth targets, despite being as important for social and economic success.

Environmental targets are often pursued only by the environmental departments (DEFRA and DECC), with little bearing on decision-making in other Departments and—sometimes—counter-productive policies in other areas. This is economically inefficient.

A Natural Wealth Bill

The Natural Capital Committee recommended that the 25 year plan be set on a legislative footing.

A Natural Wealth Bill would create a framework for annual reporting on natural capital assets in Parliament.

It would take the agenda forward by:

- Creating a Charter of Environmental Responsibility for the Treasury;
- Requiring an annual Natural Wealth Statement in Parliament;
- Ensuring that regulators focus on promoting natural wealth

Together, these steps would help to strengthen the UK's economy and environment. You can find a draft bill at the end of this section.

An annual Natural Wealth Statement to report on progress will ensure political accountability for the state of nature. This may seem like an abstract gesture alongside the practical "on the ground" components necessary for an effective 25 year environment plan, but it is significant. Elevating the politics of nature and valuing nature properly will mean that Government can really be held to account for our environment.

Even a partial estimate of UK natural capital shows its huge value. Natural assets are often valued on an individual basis. For example, there are many estimates of the value of pollinators, carbon, and flood risk mitigation on individual sites. However, even the most comprehensive study to date, the National Ecosystem Assessment, gave only a partial picture.



NATURAL CAPITAL REPRESENTS A HUGE PROPORTION OF UK WEALTH.

For example:

£690 million

The value of pollinators in the UK economy each year

£18.08

per tonne

The value of carbon (according to the UK Carbon Price Floor)

£7
billion

Wetlands provide £7bn of value every year in the UK

£ 1

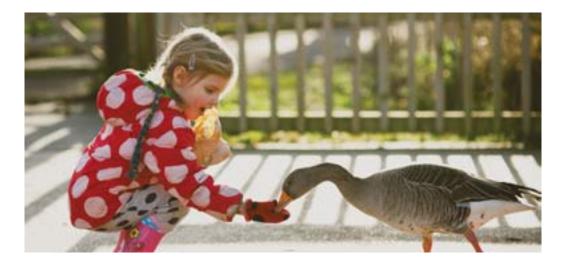
Protected sites like WWT Steart Marshes which produces around £1m in ecosystem services each year

More rational spending and regulatory choices could be made by undertaking this kind of accounting and reporting nationally, on a systematic basis. Ultimately, this should include a national balance sheet of the value of natural assets, estimates of depreciation and a more modern way of presenting national accounts.

The quality of this reporting will improve over time, leading toward an aggregate assessment of UK natural capital, as well as reporting on individual components of our natural wealth.







Doing so will enable the Government to make informed decisions on a cross-departmental basis. It will also provide new information for businesses that depend on natural capital assets and open up opportunities for new markets in nature-positive measures.

Natural Wealth Fund

Of course, like other valuable public assets, natural assets often require maintenance to keep them in good condition. At a time of tight public finances, one way to ensure that nature is not neglected would be to use some of the revenues from use of natural resources today to fund investment in natural wealth in the future.

Some natural capital assets are renewable—wise use can keep them in good condition so that they can provide for our needs and for the needs of future generations. Others are non-renewable—they can only be exploited once, so using them today means that we benefit at the expense of future generations.

In order to balance out the benefits of using non-renewable resources today with future needs, the UK should establish a Natural Wealth Fund, similar to Norway's sovereign wealth fund, which would generate revenues that can fund future investment in natural assets. Norway's \$900bn was capitalised by oil revenues and is worth almost double the country's GDP. A UK Natural Wealth Fund could provide a long-term, secure capital base for investing in nature.

ACTIONS FOR THE GOVERNMENT:

- Introduce an annual Natural Wealth Statement, mandated in law, to account for our natural capital
- Set a suite of natural environment objectives and milestones for delivery, including creating 100,000 hectares of new wetlands by 2040
- Establish a Natural Wealth Fund, capitalised by a levy on exploitation of non-renewable natural assets, to fund future investment in natural wealth

NATURAL WEALTH BILL

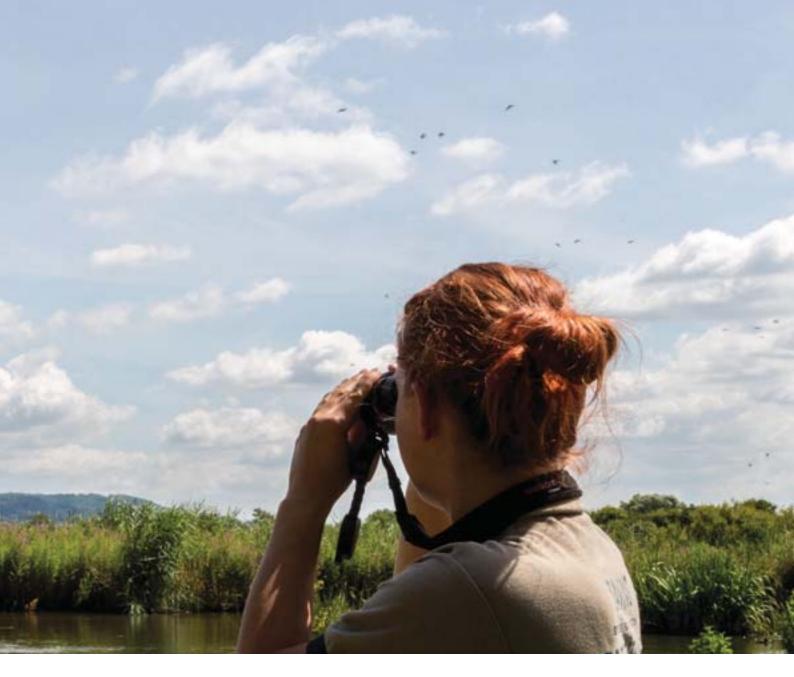
A Bill to make provision for a Charter for Environmental Responsibility and for the publication of Natural Wealth Statement and Natural Wealth Report; to establish an environmental wealth duty; and for connected purposes.



Charter for Environmental Responsibility

- The Treasury must prepare a document, to be known as the Charter for Environmental Responsibility, relating to the formulation and implementation of fiscal policy and policy for the management of the National Natural Wealth.
- The Charter must in particular set out A) the Treasury's objectives in relation to policy for the management of the National Natural Wealth.
 - B) the means by which the Treasury's objectives in relation to the management of National Natural Wealth will be attained ("the natural capital mandate"), and
 - () matters to be included in a Natural Wealth Statement and Natural Wealth Report prepared under section 2.

- The Charter may contain such other material as the Treasury considers appropriate.
- 4 The Treasury must lay the Charter before Parliament.
- The Treasury may from time to time modify the Charter.
- When the Charter is modified the Treasury must lay the modified Charter before Parliament.
- The Charter (or the modified Charter) does not come into force until it has been approved by a resolution of the House of Commons.
- The Treasury must publish the Charter and any modified Charter once approved by the House of Commons.



Annual Natural Wealth Statement documents

- The Treasury must prepare a Natural Wealth Statement and Natural Wealth Report for each financial year.
- 2 The contents of a Natural Wealth Statement and Natural Wealth Report must conform to any provision set out in the Charter.
- The Treasury must lay each Natural Wealth Statement and Natural Wealth Report before Parliament.
- 4 The Treasury must publish each Natural Wealth Statement and Natural Wealth Report.

Exercise of regulatory functions: environmental wealth

- A person exercising a regulatory function to which this section applies must, in the exercise of the function, have regard to the desirability of promoting natural wealth.
- A Minister of the Crown may by order specify the regulatory functions to which section applies.

Interpretation

In this bill, "natural wealth" means the stock of natural capital assets in England and Wales.

BETTER OFF WETTER



The wonder of wetlands is a brilliant showcase for why we need to invest in our natural wealth. In England, 90% of wetlands have disappeared since the industrial revolution. 100,000 hectares of wetlands were destroyed every year between 1840 and 1880. We are calling for Government to protect what we have left and restore 100,000 hectares over 25 years, as part of a suite of habitat creation objectives.

Environmental degradation, including wetlands, has made us poorer and left our economy and communities more vulnerable. Restoring wetlands will make us richer in nature and help solve serious social problems:

Flooding:

In England, flood damage costs £1.3–£2.2bn a year and causes misery for communities and businesses. Wetland creation can help reduce flooding, if it is targeted in the right places. Upland wetlands are natural sponges that trap and slowly release waters, slowing flood peaks and reducing erosion. Urban wetlands

can counteract the increased rate and volume of runoff from pavements and buildings. Coastal wetlands reduce storm surge and slow its velocity. Preserving and restoring wetlands and other water retention measures can often affordably deliver a level of flood control otherwise provided by expensive dredge operations and levees.

Water quality:

Four fifths of English water bodies are not in good ecological condition, despite an EU target for all waters to be healthy by 2015. This is terrible for wildlife and costly for people. For example, water companies spend many millions of pounds to clean up our water for drinking. Creating wetlands in the right places can remove chemicals and improve the condition of our water bodies. Improving and restoring existing wetlands can also help purify our water. According to the Environment Agency, achieving "good" status for all water bodies could bring £21bn of benefits at a cost of £16bn.

38% of freshwater mammals

and over

25%

of freshwater amphibians

are threatened with extinction.



OUR WAY TO 100K:

Natural flood management

Natural Flood Management uses natural processes to manage the sources and pathways of flood waters. By restoring and enhancing natural features, we can reduce flood peaks, or delay downstream flows. These techniques work alongside traditional, engineered defences.

Natural flood management works in many ways. We can store water by creating ponds, ditches and embankments. We can soak water away by increasing soil infiltration. We can slow water down by planting trees or creating woody dams. We can stop flood waters building up interrupting surface flows with water storage or new planting.

Natural Flood Management can be used from top to bottom of a catchment. We can block grips and restore peat in the uplands. We can connect flood plains back to the river in the lowlands. We can create sustainable drainage in cities. We can create salt marsh and mudflats to buffer storms on our coastlines.

One great example is WWT Steart Marshes.

Rising sea levels are putting the squeeze on our coast, so WWT and the Environment Agency have created Steart Marshes, one of the UK's largest new wetland reserves. Hundreds of hectares of saltmarsh and freshwater wetlands buffer homes and businesses from rising sea levels, and provide habitat for a rich mix of wetland wildlife including otters, egrets, owls, waders and wildfowl. The Severn Estuary saltmarshes and mudflats alone support more than 70,000 water birds.

Saltmarshes can help manage coastal flood risk at the same time as creating amazing habitat and recreational spaces. Marshes can reduce wave height by 60–70% and total wave energy by an average of 82% (up to 90%).

As well as being a natural buffer, providing protection to the newly created flood banks, the saltmarsh is farmed for specialist saltmarsh lamb and beef, its creeks are a nursery for the fry of important fish stocks, and it is absorbing tonnes of climate-polluting carbon as it matures. In this way, it produces as much as £1 million worth of goods and services every year.

Paths, bridleways and hides have been created and improved to help more people enjoy the landscape. WWT plan to develop opportunities at Steart Marshes for young people to learn conservation and heritage skills that will lead to jobs for the South West.

Unlike traditional, engineered defences, the benefits of natural flood management are often long-term and spread widely across a catchment. They often rely on networks of interventions across the landscape, rather than one or two big projects. So, we are recommending ways to ensure widespread, long-term changes in land-management across a landscape. This will provide flood relief benefits as well as a host of other advantages.





Delivering the scale and breadth of change needed to grow our natural wealth—contributing to biodiversity, water quality, air quality, public health, and flood management—will require widespread action and investment in land-use change. However, the environment is made up of complex, interwoven systems. Changing one piece of the puzzle can have myriad effects, often with unexpected consequences.

This complexity has led Governments to split up the problem, dealing with aspects of the natural environment one-by-one: action for wetland wildlife is often separate from work on water quality, which is separate again from flood risk alleviation. While not all solutions to environmental problems require an integrated approach (for example, if a wetland species is declining due to factor unrelated to its habitat, like overharvesting or lead poisoning) many of them do. Lack of integration can be seriously inefficient, leading to costly, short-term, and untargeted projects.

Effective environmental improvement will require joined-up action, using local knowledge to improve whole environmental systems: a landscape or catchment approach. Part of the answer will be creating and protecting new areas of high-quality habitats, like large wetlands, but just as important will be changing the way we manage the wider landscape.

Achieving change will sometimes need regulation, but this should be complemented by fairer financial incentives that reward land managers who invest in our natural wealth. At the moment, good land management often goes unrewarded. Farmers who invest in nature receive some money from the Common Agricultural Policy (CAP), but many ways of investing in natural wealth are not remunerated. Where farmers are willing to use their fields for flood storage, or to create wetlands to filter our water, then we need to recognise that they are delivering a service and afford them a long-term, secure income for doing so.

For example, flood prevention funding is often allocated inefficiently. Projects that would deliver multiple benefits are overlooked because funding tends to be issue-specific, short-term, poorly focused and based on conventional cost-benefit analysis. We know that natural approaches, working alongside conventional flood defences, can deliver flood reduction benefits, but these benefits are widespread and long-term. They need to be incentivised for the long-term, sometimes on large-scale.

So, to link up local knowledge with national priorities, coordinate different objectives and commission and reward change across the landscape, we propose new Catchment Commissioners.

Commissioners will be a lynchpin in local investment in nature, creating new commercial opportunities for investment in natural capital. Long-term revenues for natural capital investment will help land-managers to diversify the income they receive from managing their land well.

However our relationship with the EU evolves, the CAP system of farm support must surely change. Our money must reward farmers for all the public goods they deliver, not just production and landholding. Our countryside is about so much more than production—Catchment Commissioners can target spending to reward those who work with the land to invest in our natural wealth.

Mapping

The first role of a Catchment Commissioner is to map the potential for investment in natural wealth in their area. Detailed mapping will be necessary to identify where there are problems (such as flood risk, poor air and water quality, or lack of quality green space) and which natural capital assets can be improved to alleviate those problems (such as wetland creation or tree-planting): ecological opportunity mapping.

Ecological opportunity mapping can coordinate investment to deliver multiple benefits. By stacking up different data, it can help locate the areas where the benefits of investment are clearest. For example, wetland creation can simultaneously reduce flood risk, filter out diffuse pollution, provide habitat, and give local people a wonderful new place to enjoy.

Understanding how a catchment works is essential to ensuring the right interventions are made—a commissioner will need to know how water flows, how habitats connect, and how people interact with their surroundings. Commissioners should draw on local knowledge to bring the mapping to life.

In this way, Commissioners will identify synergies and prioritise sites for investment, they will integrate

funding, reach agreement with local landowners and commission the scale of natural capital investment needed at catchment scale.

Catchment Commissioners

To achieve improvements across the country in accordance with local conditions and national priorities, Catchment Commissioners should be appointed with landscapescale responsibility. For example, there could be 14 Catchment Commissioners-one for each of Natural England's work areas. The Commissioners could sit within Local Enterprise Partnerships (LEPs), Natural England, or the Environment Agency. More important is that they have access to local expertise and funding to create widespread, longterm change.

They will look up to shared environmental targets, and down to on-the-ground delivery, achieving national targets in locally-appropriate ways. They require three core powers and responsibilities:

Mapping: identifying multi-benefit, long-term investments.

Coordinating: making sure that environmental plans are integrated at development stage.

Commissioning: ensuring long-term funding for projects to improve land and water management.







Open Data

Investing efficiently in nature needs lots of information to map a range of habitat types and natural assets. Some of the necessary data is already available open source. Mapping can draw on a number of established sources:

- River basin, flood risk, shoreline, and catchment flood management plans
- Local plans (required by the NPPF to map local ecological networks)
- Environment Agency flood risk maps
- Water Framework Directive monitoring for status of waterbodies, drinking water, and catchments
- Air quality monitoring information

However, Defra could improve the process of ecological opportunity mapping by making valuable new sources of information available. This data will help to create new commercial opportunities for land managers, identifying valuable investments in natural capital. In particular, as part of the Open Defra project, the Government should make available several important data sets that currently remain under licence.

The kinds of data needed for ecological opportunity mapping that all ought to be available include:

- A Climate change: Environment Agency climate change spatial datasets
- Flood risk: Defra, EA modelling of flood risk for the Climate Change Risk Assessment 2012; Environment Agency's fluvial Flood Zone maps
- Soils: the National Soils Maps; hydrology of Soil Types (HOST) dataset; National Soils Resources Institute (NSRI)/National Soil Map of England and Wales (NATMAP) vector soil data



- Land: Rural Payments Agency Rural Land Register; Land Registry landcover information
- **E Rainfall:** 15 minute data or source tipping bucket data for as many gauges as possible
- Streamflow: the National River Flow Archive; the digital stream network for England and Wales
- 4 River basin boundaries: gridded dataset of the riparian zones across England and Wales
- H Elevation data: digital down to 2m resolution
- Groundwater abstractions: including borehole data
- Detailed River Network: Environment Agency's network data

- Agricultural pollution: ADAS Phosphorus and Sediment Yield Characterisation In Catchments for Phosphorus (PSYCHIC-P) and National Environment and Agricultural Pollution Nitrate (NEAP-N) modelled rates of pollutant loss/usage (based on 2010 agricultural statistics)
- Pesticide usage

OPEN DATA

Combining data to provide a detailed visualisation of areas of risk and opportunity can help to direct investment in wealthcreating natural capital: ecological opportunity mapping. Ecological opportunity mapping has already been undertaken for some natural assets at different scales, including **Forestry Commission tree-planting** maps; the Severn Vision; and the **London Green Grid. This needs** to be done systematically, across catchments, across habitat types to give a full picture of the most cost-effective interventions.

Of course, an open data approach should not mean that the Government abdicates its own responsibility for data collection. The decision to cut funding for Local Environment Record Centres in the name of open data risks dismantling a critical network of environmental information across the country. In other areas, the Government could play a more direct role in collecting environmentally and commercially important data.

For example, there has been no comprehensive analysis of the status of priority species since 2008, when an analysis of progress in England suggested that 11% of species were increasing, 32% were stable, but 22% were still in decline. Survey work in the offshore environment has been even more sparse. Resuming monitoring exercises like the UK seabird breeding census, last conducted in 2000, would help to guide ecological action, as well as avoiding costly planning delays for infrastructure like offshore wind farms.

The Government should draw on the combined ecological opportunity maps at the catchment level to produce a strategic plan for national natural capital investment, identifying major projects with national and international benefits worthy of additional support. This kind of strategic level natural capital investment could be added to the remit of the National Infrastructure Commission.







Dimension 1.

Interdepartmental coordination:

Defra cannot achieve environmental improvement if policy and practice in other Departments is not properly aligned: DCLG has a role to play in planning for green and blue infrastructure; DECC has a role to play in achieving decarbonisation in harmony with nature. Local inter-agency cooperation is also essential. Too often, flood mitigation schemes consider biodiversity only as an after-thought.

Dimension 2.

National—local:

Environmental improvement must reflect the preferences and knowledge of local communities. Early and open consultations, including face-to-face discussion, are essential for deriving locally-appropriate solutions. However, investment also needs to be guided by national and international priorities; if a particular natural capital asset or species is nationally scarce, then this cannot be ignored.

Dimension 3.

Issue-issue:

If individual environmental issues are dealt with in isolation, this can sometimes cause problems in other areas. For example, the London Congestion Charge was an environmentally rational move from the point of view of tackling climate change, but the focus on greenhouse gas reduction led to policies that increased diesel emissions and worsened air quality. Environmental improvements must be based on a systems view, rather than focus on one aspect at a time.

Dimension 4.

Short-long-term:

Some environmental risks and opportunities require prompt action. The immediate misery of flooding must be alleviated quickly and decisively. However, this should not stand in the way of long-term investments. For example, the 6-year framework for flooding investment means that projects with longer-term benefits are frequently ignored in favour of a series of stop-gap measures.

The Catchment Commissioners should play a key coordinating role, aligning national needs with local priorities and drawing together the right people to make each project a success. In particular, local planning authorities, Local Enterprise Partnerships, Defra's agencies, land owners and water companies should all expect to consult with one another and with the Catchment Commissioner at the master planning stage of projects that could affect the local environment.

COMMISSIONING

At the moment, funding for natural capital investment is ad-hoc and issue-specific. Grant schemes only provide partial recompense for the value of investments and land managers are obliged to meet the difference.

Where these investments are largely for the public good, the market often does not create a sufficient incentive for landowners to invest.

The third role of catchment commissioners would be to commission widespread, long-term investment in natural capital across landscapes. Using opportunity maps, and drawing together funding from multiple sources, catchment commissioners could create new revenues for encouraging investment, with long-term certainty that land use change will be rewarded.

Investment should be guided by ecological opportunity mapping, but completed by appropriate bids from landowners in the catchment.

For example, a commissioner may open a tender for investment in habitat creation with air quality and flood mitigation benefits, and accept a tree-planting bid from a landowner close by and upstream of a town; another area may require investment in habitat that brings water quality and amenity benefits, leading to investment in sustainable urban drainage options.

There are already multiple sources of funding that can pay for change. Established funding sources include the Regional Growth Fund, the Heritage Lottery Fund, S.106 agreements, and the Landfill Community Fund.

However, these are often invested inefficiently and hard to coordinate because of barriers of timing, co-financing requirements, and incompatible terms of reference.

A long-term, landscape scale, multibenefit approach can amplify the benefits of every pound spent. In order to coordinate spending and smooth over short-term funding horizons, money should be made available from these sources for Catchment Commissioners to pay for natural capital investment.



Mapping would work by overlaying and stacking maps to show where there is greatest synergy.

They could be supplemented by revenues from private sources, such as water companies that would benefit from investments that reduce pollution, or from businesses that depend on natural assets. Alternatively, obligations could be created for businesses that degrade natural assets-internationally or locally-to pay into the Catchment Commissioners funds for investment in natural capital. This would follow the "polluter pays" principle more closely, simultaneously providing an incentive for reducing environmental damage among businesses and creating a flow of capital for the Catchment Commissioner. If combined with a bidding process for land-use change, this would provide a triple efficiency: reducing damage. creating funds, and delivering the most cost-effective investment.

A system for mandatory offsetting for certain kinds of natural capital degradation could be included in this framework. It should rule out irreplaceable habitat, retain a preference for local investment, and include a multiplier for ensuring adequate compensation. Additionally, and particularly in the longer term, sums could be set aside from major Government schemes, such as grantin-aid flood funding.

As an initial step, the Government should reserve £175 million of the additional £700million of new flooding funding announced after the 2015–16 floods for natural capital investment that can help alleviate flooding.

In this way, new revenue streams will be created for land management choices that deliver the maximum public benefit for the least cost.

In summary, Commissioners would plan investment at the catchment scale. Mapping would work by overlaying and stacking maps to show where there is greatest synergy. This would be applied on the ground by local coordination, and new commercial opportunities would be created through a bidding and commissioning process:

Mapping: data on site condition, such as value of assets at risk, or costs of water pollution, and ecological opportunity maps, aggregating data for different habitat types

Coordinating: local site knowledge and preferences of local communities with national priorities

Commissioning: through bids by individual land managers willing to undertake change in return for long-term investment.







LOCAL ACTION

Our connection with nature

The idea that we need nature and nature needs us is as true for individuals as it is for the economy. People's mental and physical wellbeing are inextricably linked to the environment and a growing disconnection from nature is having serious implications for health and wellbeing. On the other side of the coin, protection of nature depends on people caring for the world around them and feeling a sense of pride and stewardship.

Any long-term plan for nature must include steps to reconnect people with the natural world.

Getting into nature

The UK has a proud tradition of naturalists, amateur and professional, and a culture of connection with the countryside around us. However, that tradition is being eroded. Our connection with nature is being weakened by the digital age, by the disappearance of natural environments around our homes, and by an increasing sense that it is not safe to allow our children to roam free and experience nature first hand. Since the 1970s, there has been an almost 90% decline in the area around home where children are allowed to roam unsupervised. The proportion of children who play in wild places has fallen from half to less than one in ten.

The problem is more pronounced for the poorest, most marginal and most vulnerable in our society—arguably those who need nature the most. Natural England has found that the frequency of children's visits to the natural environment is linked to ethnicity and socioeconomic status, with those from black, Asian and minority ethnic (BAME) and poorer households less likely to get out into nature.

According to Natural England, the places visited most often by children were urban parks and play grounds. Again, nature reserves tended to be visited more often by wealthier, non-BAME families.

Why it matters

Limiting exposure to nature can have serious physical and psychological health ramifications. Children disproportionately suffer the long-term developmental consequences of limited experiences in nature. For example, the Ramsar Convention and the World Health Organisation recognise that 'wetland ecosystems, and their changes, including their degradation, will have consequences for the mental health of populations who live in a wetland setting'.

Separation from nature may not have caused modern health crises, but it certainly contributes:

- At least one in four people will experience a significant mental health problem. About 35,000 children in England are being prescribed anti-depressants.
- Around three in ten children in England aged between two and 15 are either overweight or obese.

Taking part in nature-based activities helps people who are suffering from mental ill-health and can contribute to a reduction in levels of anxiety, stress, and depression. It can help people overcome physical health problems, warding off heart disease and diabetes. Natural England has shown that where people have good access to green space they are 24% more likely to be physically active. If everyone were afforded equitable good access to green space, the estimated saving to the health service could be in the order of £2.1 billion per annum in England alone. Educational benefits such as increased concentration and reduced stress also offer improvements for equity and productivity.

So, improving access to nature is good for health, education, community, economy and for the environment.

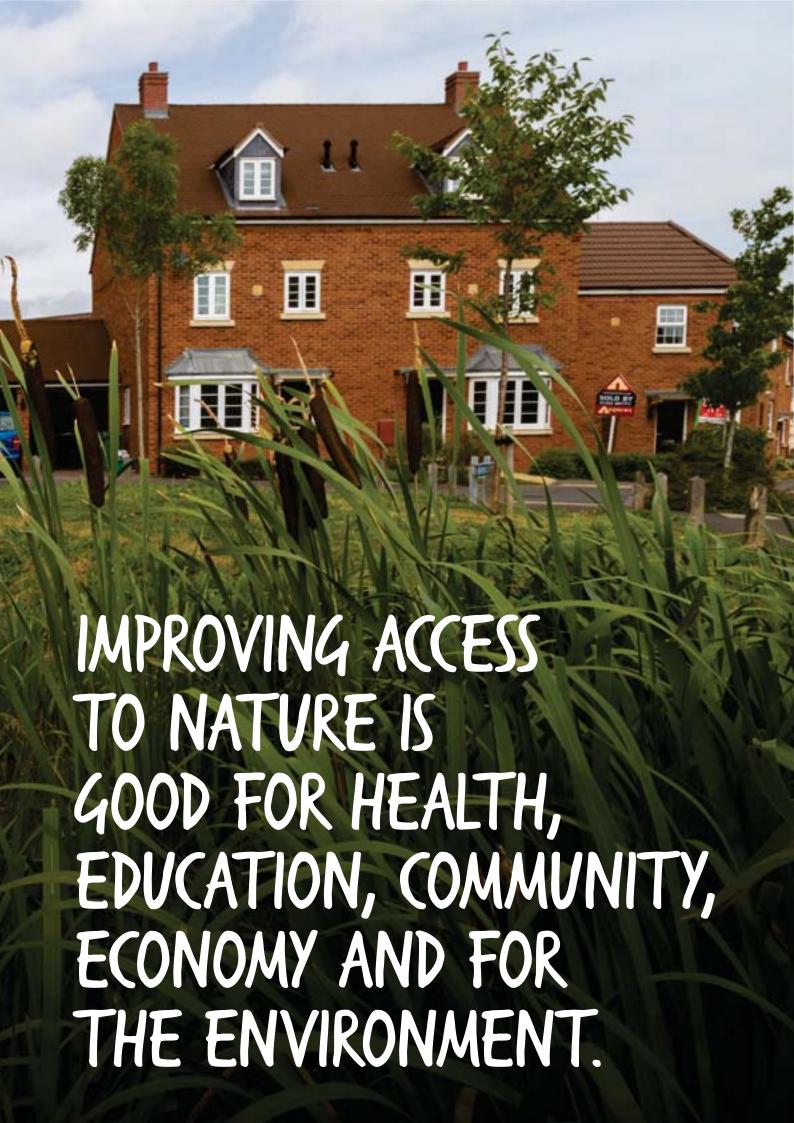


DIVERSITY FOR BIODIVERSITY

At WWT, we recognise that nature is for everyone and nature needs everyone.

It is totally unacceptable that some demographic and social groups enjoy more of the benefits of a healthy environment. So, creating equitable access to nature for BAME communities, for example, is a matter of social justice.

We also know that conservationists need to do more to reach out to different communities to inspire the next generation to enjoy and care for nature.



MAKING A DIFFERENCE

Keeping our connection with nature is not about holding back time or progress. There is space for nature in a modern economy, urban and rural. The reasons for our disconnection are also cultural or institutional and here the Government and civil society have a role to play.

For example, educational practices often militate against direct experience in nature, with a focus on risk-averse policies and an exam-driven culture. Physical constraints arise if planning does not provide for green space near to communities. Crucially, this must also be accessible and safe, addressing risks like traffic that stop children roaming freely. Other barriers are personal or cultural.

We know that even short experiences in nature can make a real difference. WWT has recently offered free visits to schools with a high percentage of children from more disadvantaged families. Emerging evidence indicates that poorer children are less interested in being outdoors in nature than better-off children, but that difference can be turned on its head after just one day spent learning outside. The opinions of pupils from different schools were analysed from the day before their first visit and for a further year. The responses of pupils from schools in poorer areas were less positive about nature before the visit, but when researchers followed up afterwards, they found this group had developed a greater interest and positive attitude, including wanting to do things to help wildlife.





The benefits of learning outdoors have never been greater. As our society becomes more sedentary, the opportunity to give young people the chance to be immersed in nature not only supports their social and citizenship skills, but encourages academic achievement and application.

In New Zealand, almost 70,000 people are expected to be referred to the Government-backed "green prescription" scheme this year. This is intended to offer preventative care for mental and physical health in a simple, affordable way. Across the UK, there are also experiments in social prescribing. However, these can be held back by a lack of formal structures for delivery and by practical constraints. This is especially true in urban areas, where access to high-quality green spaces may be limited. 85% of the UK population now live in urban environments, including many of those who would benefit most from increased contact with nature.

The 25 year plan is an opportunity to ensure that in the next generation, children from all socio-economic backgrounds have the chance to roam in wonderful, wild environments.

More pocket money?

The Government's programme of pocket parks has the potential to improve access to quality greenspace in urban areas. DCLG put £1.5m to fund 87 pocket parks by 2016.

This kind of local scheme can be a brilliant way to provide communities with nature nearby. Perhaps DCLG and Defra could fund a further programme to include "pocket ponds", providing places for quiet reflection that are often the heart of a community.

This kind of direct support could complement stronger planning guidelines recognising everyone's need for nature nearby.

85% of the UK population now live in urban environments **Actions for the Government:** Establish guidance and accreditation for recognised green prescription providers Set equitable access to natural greenspace standards as a planning objectives for local authorities • Require sustainable drainage in all new developments and publish a national sustainable drainage retrofit strategy

OUR WAY TO 100K:

Sustainable drainage and urban wetlands

- Four million people are currently at risk of surface water flooding
- By 2060 there will be a 20 to 40 per cent increase in rainfall which will produce a 30 to 110 per cent increase in flood damages to surface water flooding
- Over the past 10 years the number of front gardens with gravel or paving instead of grass has tripled





Sustainable drainage systems (SuDS) are features set into the urban environment which mimic nature's natural processes to slow and clean water.

They can provide a vital role in reducing flood risk, cleaning water, providing valuable green/blue space in urban areas and important stepping stones and habitat for wildlife.

WWT, in partnership with Thames Water and the Environment Agency fitted ten schools in the Pymmes Brook catchment in London with SuDS. In July 2013 there was a heavy downpour that would have previously forced the cancellation of the Hollickwood Primary School fair the next day. Instead, the water was held at bay thanks to the wetland that had been built along the edge of the playing field, leaving behind just a few puddles. Data shows that water runoff is delayed at least an hour before it enters the main drain, thanks to the SuDS.

In addition, the SuDS have helped improve the health of the Pymmes Brook itself. And they've also made the schools' outdoor spaces greener and more natural, brought more wildlife into the school grounds, and become a focus for pupils to learn about the environment and conservation.

We need sustainable drainage in new developments and to be retrofitted where feasible, not only to reduce flood risk but as opportunities for mini-wetlands throughout the urban (and rural) environment.

CONCLUSION AND RECOMMENDATIONS

The Government's 25 year plan for nature could be a triumph for community, economy and environment. Ours could be the first generation to give back more to nature than we take.

This could not come at a better time: we face concurrent crises in public health, air and water quality, biodiversity, flood risk and climate change. All of these would benefit from a new approach to decision-making in the UK that puts our natural wealth at the heart of the way we manage our economy and society.

In this report, we use wetlands as our example of a brilliant ecosystem that needs help. By protecting the wetlands we have today and aiming to create 100,000 hectares of new wetlands, we can benefit from more wildlife, cleaner water, lower flood risk, climate change mitigation and, of course, wonderful new places.

We can deliver this wetland creation by grasping opportunities along our coastlines, in our uplands, across the farmed landscape and in our towns and cities.

By 2040, wetlands and their wildlife can be thriving and increasing. Everyone can have access to wetlands that provide amazing experiences and inspire support for conservation. Wetlands could be recognised as part of our natural infrastructure, providing space for wildlife and vital services for all.

To achieve these advances, we need to recognise the importance of nature from top to bottom: from the impact we are having internationally, through the importance of targets and reporting in Parliament, to the potential for new mapping and markets for nature at the catchment level. We need to reach down right to the individual level, so that everyone can benefit from more nature around them. And, first, we need to involve the people for whom this plan is being written in its production.







- l. Commit to a 25 year environment plan, with open public and Parliamentary consultation
 - A. Regularly update both Houses and relevant Committees on progress with the plan
 - B. Seek cross-party consensus and establish key components of the plan in legislation
- 2. Ensure UK environmental protection is as strong or stronger in our new relationship with the EU
 - A. Strengthen international collaboration and leadership on biodiversity and climate change
 - B. Account for the impacts of UK consumption on the environment in other countries

- 3. Introduce an annual Natural Wealth
 Statement to account for our natural capital
 - A. Set a suite of natural environment objectives and milestones for delivery, including creating 100,000 hectares of new wetlands by 2040
 - B. Establish a Natural Wealth Fund, capitalised by a levy on exploitation of non-renewable natural assets, to fund future investment in natural wealth
- 4. Appoint catchment commissioners, with powers of mapping, coordinating and commissioning
 - A. Release the data sets required for multi-habitat, multi-benefit ecological opportunity mapping
 - B. Ring-fence £175 million of new flood funding for investment in natural capital assets



- 5. Establish guidance and accreditation for recognised green prescription providers
 - A. Set equitable access to natural greenspace standards as a planning objective for local authorities
 - **B**. Require sustainable drainage in all new developments and publish a national sustainable drainage retrofit strategy.

For further information, please contact:

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NOTES



A generation ago the world began to wake up to climate change and today we can celebrate the steady successes that are building toward a low-carbon revolution. Change came because people could see the need for action, because campaigners spoke up for the people, and because Government listened and took action.

Climate change is, however, not the only great environmental threat we face. It is one of many.

This year, we're on the cusp of another unique opportunity. Nature is on a knife-edge and the Government has promised to adopt a 25 Year Environment Plan to help restore the balance. The plan is to be based on the inspiring ambition for us to be the first generation to leave the natural environment in better shape than we found it. A great idea, if we can achieve it.

In this report, WWT sets out affordable, practical proposals that will make us richer in Nature and help to achieve the overall aim of that plan. By putting our need for Nature at the heart of decision-making we can make our economy stronger, our communities happier and healthier, and we can protect our precious wildlife. WWT illustrates the case through the wonder of wetlands, but recognises that we need to treat our environment as a whole: climate, water, air, earth — and people.

People care about nature, campaigners are speaking out, the time is right for action. I urge Government to listen and make this Plan for Nature a real turning point for Nature, because what is good for the health of the natural environment will in the end be good for our country, its economy and its people.

TONY JUNIPER