

An aerial photograph of a verdant valley. A river winds through the landscape, bordered by stone walls that divide the land into fields. The hills in the background are covered in dense green vegetation.

Natural partners

Why nature conservation and natural capital approaches should work together



**green
alliance...**

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By Sue Armstrong Brown,
William Andrews Tipper and Nicola Wheeler

Green Alliance

Green Alliance is a charity and independent think tank focused on ambitious leadership for the environment. We have a track record of 35 years, working with the most influential leaders from the NGO, business, and political communities. Our work generates new thinking and dialogue, and has increased political action and support for environmental solutions in the UK.

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Green Alliance
36 Buckingham Palace Road
London SW1W 0RE
020 7233 7433

ga@green-alliance.org.uk
www.green-alliance.org.uk
blog: greenallianceblog.org.uk
twitter: @GreenAllianceUK

The Green Alliance Trust
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Executive summary

Pressures on the UK's natural environment have been managed for over 150 years using nature conservation, an approach centred on the need to protect wildlife, natural habitats and ecosystems from the most damaging effects of human activity. While it has had some notable successes, it has not reversed the long term trends of ecosystem decline and habitat and species loss.

Over the past decade, new thinking has emerged based on the idea of natural capital. This suggests an economic rationale for investing in the maintenance and improvement of natural systems, by assigning a value to natural assets and the benefits they supply to society.

These two approaches are often set in opposition to one another. Natural capital thinking has attracted strong criticism relating to the morality and efficacy of valuing nature. There is also concern that viewing solutions solely through a business lens would lead to a retreat in state involvement and the neglect of issues where there is no clear business case. In turn, natural capital advocates have been dismissive of nature conservation.

In this report, we argue that both approaches have something to offer, but that neither is enough on its own. A strategic combination of both would be a more effective route to managing environmental challenges.

Pros and cons of the two approaches

Natural capital accounting highlights that there is currently a considerable gap between the costs to business from natural capital depletion and the value lost by society as a whole. Yet the costs of action to preserve natural capital may be considerably lower than the value of the natural capital, creating opportunities for business to invest in actions that can improve conservation outcomes and reverse natural capital depletion.

However, the costs of restoring natural systems at any meaningful scale are so great that the benefits to a business are likely to be insufficient to support a case for action. New government approaches or mechanisms are needed to change how natural capital value is reflected in calculations of the business value of environmental protection.

Conversely, nature conservation policy instruments can be used to address a wide range of situations effectively. From an environmental perspective, there is a strong case for most policy interventions across the spectrum of need. Incentive payments and land sparing through reserves can effectively maintain important environmental components and restore natural systems, and regulation is the strongest tool for preventing environmental harm.

In theory, there is no reason why conservation policy instruments could not be used to solve environmental degradation in the UK, but the approach is limited by the practical and political difficulties of restricting commercial activities.

An aligned approach

“In some cases, the cheapest and most effective way to secure an environmental outcome is to pay or legislate for it directly.”

In some cases, the cheapest and most effective way to secure an environmental outcome is to pay or legislate for it directly. The need for a regulatory framework for nature conservation will not diminish and, in fact, it may strengthen as threats to the environment rise. But there is also a role for government to accelerate and amplify the uptake of the natural capital approach by business, and to help ensure the value of natural capital is increasingly reflected in markets.

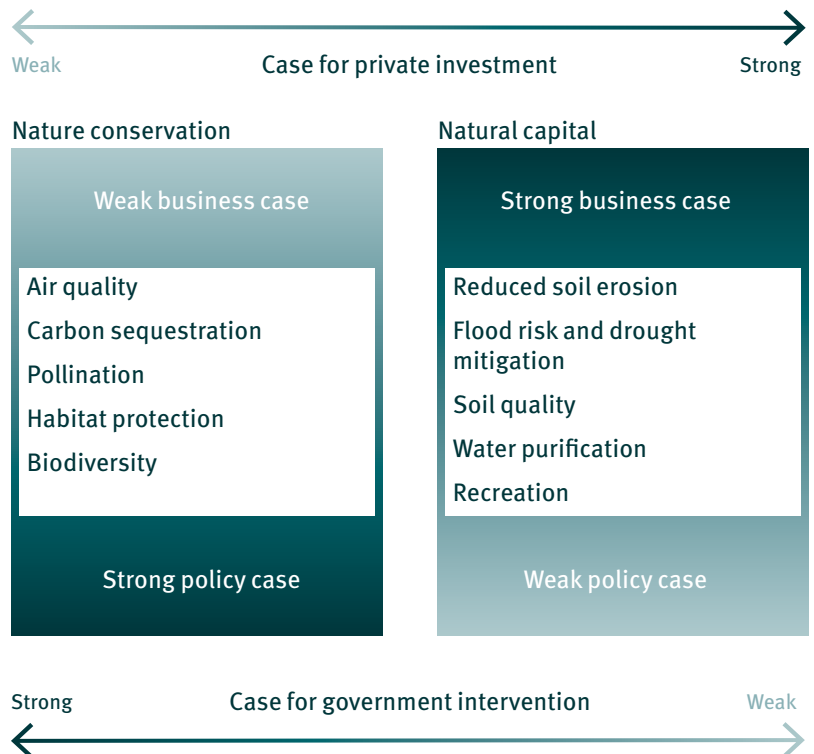
Aligning the two approaches would allow nature conservation resources to be focused on those areas where there is no alternative and no business case. The object would be to increase the overall resources available, improving the scale and pace of natural system recovery. Natural capital thinking does not justify government retreat from environmental regulations.

Conclusions

- The natural capital approach drives business action to reduce environmental impacts and maintain beneficial practices.
- Nature conservation is still essential to the protection of natural systems, where the benefit is to society at large rather than an individual entity.
- An aligned approach would increase the overall resources available and improve the protection and restoration of the UK's natural systems.

- Some environmentally beneficial interventions will be more investible for business than others. The case for investment is strongest where there are measurable business impacts on the natural capital stock, or where a commercial relationship exists or can be created between the provider and the beneficiary of natural capital. This case is strongest for natural assets such as soil and water.
- For other assets such as clean air and biodiversity, where the benefits principally accrue to society at large, continued deployment of conservation instruments, including regulation, incentives and creation of nature reserves, will remain crucial to ensure the successful restoration of natural systems.

Where the case is strongest for each approach



1

The decline of the UK's natural environment



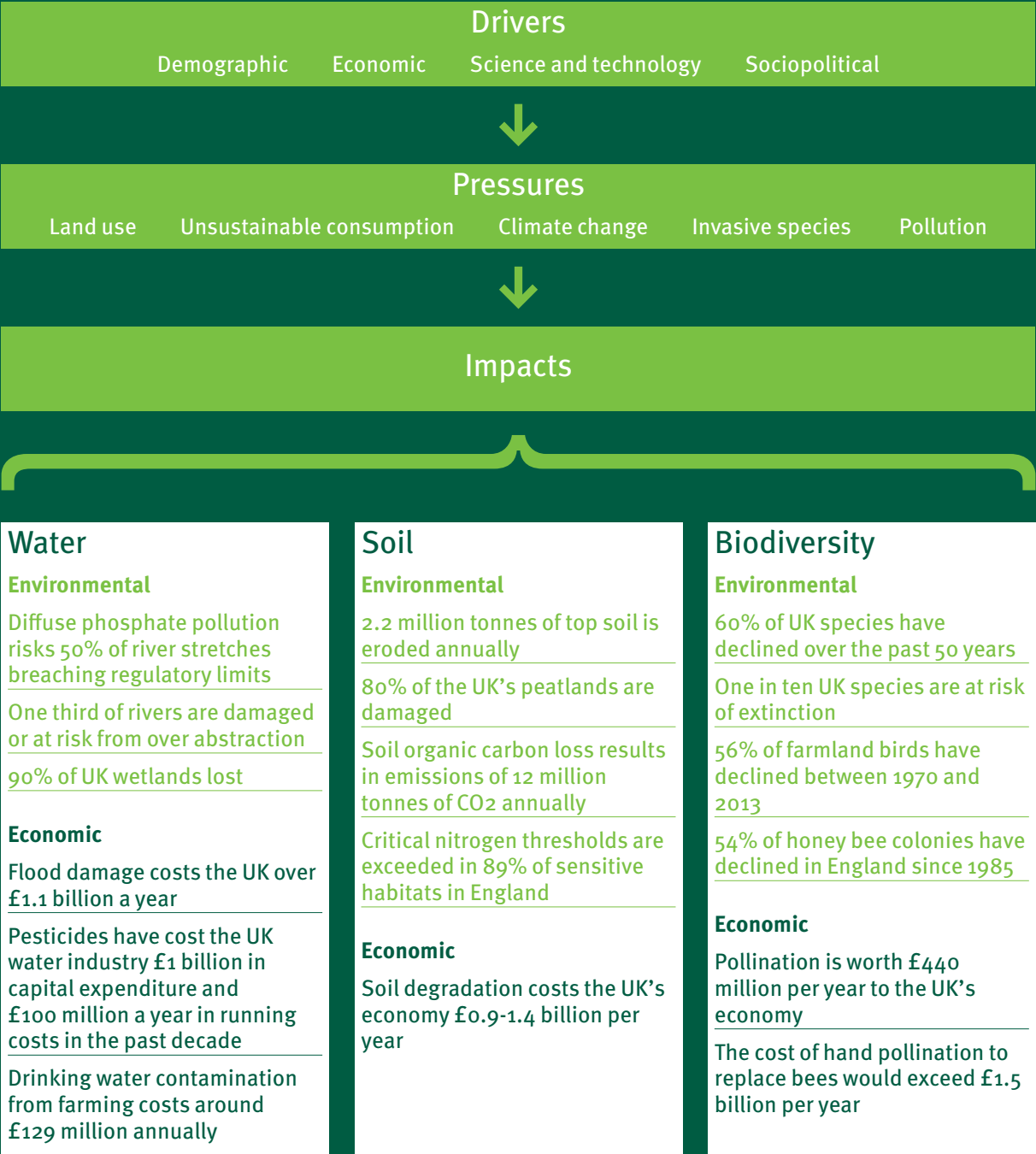
“Increasing population, rapid economic development and changes in land use have contributed to a dramatic decline in biodiversity, degradation and loss of soil, and water pollution.”

The UK’s natural environment has undergone decades of decline. Socioeconomic factors such as an increasing population, rapid economic development and changes in land use have contributed to a dramatic decline in biodiversity, degradation and loss of soil, and water pollution.¹

These declines are part of a wider global phenomenon, known as the Great Acceleration, in which there has been a massive increase in the environmental impact of human activity since 1950.² The world’s population has more than doubled during this time, reaching seven billion in 2011, water use has quadrupled and fertiliser consumption has risen from around 20 to 160 million tonnes. Nitrogen levels in coastal waters have increased fourfold and the rate of natural system loss has more than doubled.³

Earth systems have an extraordinary capacity to buffer and adapt to some of these impacts, but only up to a point. There are strong concerns now that they are being pushed to tipping point, beyond which observed impacts will be more extreme, less manageable and possibly irreversible. The image overleaf shows how these declines are affecting the UK’s environment and economy.

The decline of the UK's natural environment⁴



“The Natural Capital Committee has highlighted severe risks to economically beneficial natural assets and services.”

Impacts on business

The economic value of the UK’s natural assets is immense. The Office of National Statistics has provisionally calculated it to be £1.5 trillion, but this is recognised to be a substantial under estimate of the true value. It only accounts for sub-soil assets, agricultural land, timber, fisheries, public water supply, outdoor recreation, and net greenhouse gas sequestration.⁵ The Natural Capital Committee, a government advisory body, has highlighted severe risks to economically beneficial natural assets and services such as clean water, wildlife, carbon storage, hazard protection, recreation, clean air and marine fisheries.

For business, the condition of the natural environment has implications in four areas: risk, cost, brand and reputation, and revenue.⁶

Most business attention has focused on identifying and minimising the supply chain risks and operational impacts of environmental change. Particular sectors are already experiencing direct operational challenges. For example, land management practices which accelerate water through catchments and into rivers have contributed to additional costs for the insurance sector from flooding. And widespread use of pesticides on agricultural land has increased water treatment costs for the water sector.

The business cost of flooding

Flood events have increased in frequency and magnitude in the UK, occurring in ten out of the fifteen years since 2000. The most significant floods during this period were in the summer of 2007; throughout 2012; and the winters of 2013-14 and 2015-16.

Flooding accounts for around ten per cent of major disruptions to UK business. The cost of a flood event to a business ranges from £75,000 to £112,000.⁷

Following the 2013-14 floods, British insurance firms paid a total of £446 million in insurance claims, £27 million of which was for emergency claims. In recognition of the UK’s increasing flood risk, the government and insurance industry negotiated the creation of Flood Re, a funding scheme to provide cover for properties in areas of high flood risk. This will be funded by a levy from insurers, set at £180 million per year, and an additional flood risk premium on bills.

Water quality

The water sector has had to invest heavily in treatment works and new supply sources in the face of increased pollution. Almost half the groundwater used for public supply is now blended with water from other sources, has additional treatment or has been replaced with other sources. Between 1975 and 2009, 146 groundwater sources used for public supply were closed because of quality problems.⁸

Since the privatisation of water services in 1989 in England and Wales, households have paid around £30 billion through their water bills to treat polluted water.⁹ Water companies are reporting increasing levels of nitrates in groundwater. Heightened levels of run-off during the 2013 flooding also led to marked increases in levels of pesticides in raw water.¹⁰

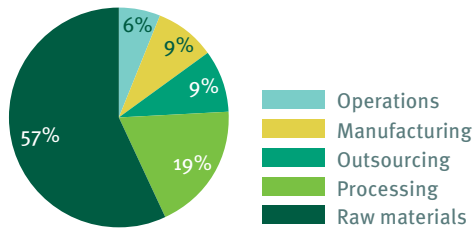
“Since the privatisation of water services, households have paid around £30 billion through their water bills to treat polluted water.”



In other sectors less immediately exposed to the operational disruption caused by environmental problems, the risks and costs may be more dispersed and less apparent. Nevertheless, a number of companies have developed analytical models to help them understand the business value at risk (see the examples of Puma and Asda opposite). The insurance sector is particularly susceptible to environmental impacts. The number of global weather related natural hazard loss events has tripled since the 1980s and inflation adjusted insurance losses from these events have increased from an annual average of around US\$10 billion in the 1980s to around US\$50 billion over the past decade.¹¹

Puma's Environmental Profit and Loss

Puma pioneered its Environment Profit and Loss (EP&L) model to identify financial risks associated with the environmental impacts of its business operations and supply chains. It includes profits (activities benefiting the environment) and losses (activities damaging the environment). The key environmental impacts assessed were water use, greenhouse gas emissions, land use conversion, air pollution and waste. Puma's operations and supply chain were split into five tiers: operations, manufacturing, outsourcing, processing and raw materials.



The overall environmental cost of Puma's operations and supply chain, assessed for 2010, was €145 million per year. The largest impacts related to sourcing of raw materials, which accounted for over half (57 per cent) of the environmental impacts and costs. This enabled Puma to identify operational and product innovation opportunities to reduce raw material use through recyclable and biodegradable products.¹²

Asda's risk assessment

Asda has estimated that the impact of climate change on natural systems will put 95 per cent of its fresh produce at risk, representing a financial risk of £266 million through sourcing and processing. Potential infrastructure disruption will put a further £104 million of value at risk.¹³



“The search is on for new approaches which can secure the benefits supplied by nature to society and create new opportunities for the private sector.”

Impacts on society

Society as a whole benefits from nature in a range of ways. Access to nature has been linked to improved health, reduced crime and educational attainment. The UK's coast and countryside are important destinations for tourism and recreation.

Many people gain an intense spiritual and aesthetic pleasure from the natural world, and perceive a strong moral imperative to protect it. Millions of people in the UK are members of nature conservation charities.

Environmental decline is jeopardising many of these benefits. Some impacts increase societal costs in a straightforward way. For example, flooding creates upwards pressure on insurance premiums, while the treatment infrastructure for polluted rivers and aquifers must be paid for through higher water bills.

Other consequences are less well understood, particularly in terms of negative impacts on public health and well-being. The work of the Natural Capital Committee has shone light on some of the hidden societal costs of environmental degradation.

The need for new tools

Strategies to reduce environmental decline and minimise its consequences have had some notable successes in targeted places, such as bringing the River Thames back to life and the recovery of the bittern from a low of 11 booming males in 1997 to upwards of 70 two decades later.²¹ But negative, long term trends at ecosystem level have not been reversed. The viability of many of the natural systems upon which society relies is threatened, intensifying the operational challenges for many business sectors.

The search is on for new approaches which can secure the benefits supplied by nature to society and create new opportunities for the private sector. The idea of natural capital, outlined in the next chapter, has emerged as a promising new approach, but understanding of its relationship with nature conservation is weak.

We examine the strengths of the two approaches and explore whether a combination of natural capital and nature conservation techniques would be an effective route to reversing the decline of the UK's natural environment.

The health benefits of the UK's green spaces

Physical and mental health can be negatively affected by reduced access to green spaces. Green spaces encourage physical activity, leading to an array of health benefits. One third of children are now classified as overweight or obese. The reasons are complex and include technological developments and changing societal attitudes to supervision, alongside access to green spaces. Whereas half of children used to regularly play in wild places a generation ago, now the number is only one in ten.¹⁴

Access to green spaces is also proven to benefit mental health, by providing mental refreshment, stress reduction and a positive response to nature.¹⁵ Seven million people currently suffer from mental health problems in the UK and mental health diagnoses are increasing.¹⁶ One in every four adults now suffers from mental health problems and ten per cent of children aged between five and 16 are clinically diagnosed with a mental health disorder.^{17,18} The annual cost of mental health disorders in the UK is now £105.2 billion.¹⁹

It is estimated that, if every household in England had equal access to green spaces, £2.1 billion could be saved every year in avoided health costs.²⁰



2

Two approaches to safeguarding the natural environment



“The nature conservation approach is essential when there is no realisable, short term economic advantage from protecting the environment.”

Environmental protection has largely been motivated by the acceptance, by political and societal leaders, that we have a duty of care towards the natural world. This has been delivered over decades through a system of regulations, designations and incentive payments, alongside land purchase by conservation organisations.

The UK has been a global leader in environmental protection, pioneering agri-environment payments during the 1980s, introducing the first UK Biodiversity Action Plan in 1994, and playing a leading role in the development of transformational policies to introduce Europe-wide protection for habitats and species and efforts to remove pollutants such as acid rain.

The idea of natural capital represents an alternative starting point for environmental protection. It recognises that the natural environment has an economic value, and that protecting and restoring it can lead to better economic outcomes for society. The natural capital approach provides an economic rationale for investing in the restoration of natural systems. It has the potential to justify and direct government investment towards the environment, and open up the possibility of unlocking private finance for conservation for commercial, rather than philanthropic, reasons.

What is each approach good for?

The natural capital approach can deliver environmentally beneficial outcomes in situations in which there is a short or medium term economic advantage to protecting the environment, eg in reducing flood risk. If barriers to action could be removed, or new drivers could be brought into play through policy change, it could result in additional public and private sector funding to improve particular aspects of the natural environment.

The nature conservation approach is essential when there is no realisable, short term economic advantage from protecting the environment, for example conserving the most valuable wildlife habitats. In these situations, the wider interests of society and the intrinsic value of nature can be safeguarded by interventions which reduce the pressure of damaging activities on the environment.

The natural capital approach

This has been defined as a means of identifying and quantifying natural resources and associated ecosystem goods and services. The objective is to integrate ecosystem oriented management with economic decision making and development.²²

Natural capital can be defined as the world's stock of natural assets, including rock and mineral resources, soil, air, water and all living things. It is from this that humans derive a wide range of services, often called ecosystem services. These make human life possible and provide the foundation for the economy.²³

Natural capital accounting methodologies have been developed to enable organisations to financially account for their impacts. This includes both the private and public values of environmental assets, ie those accruing to the organisation and to society more broadly. For example, the Natural Capital Committee has developed a tool that uses a balance sheet approach to capture asset values and liabilities (maintenance costs) for natural capital.

The concept of natural capital has attracted controversy, largely because of concerns over the desirability and legitimacy of pricing nature. Criticisms include the accusation that incomplete or imprecise valuations may end up validating damaging activities; that the reductionist approach of valuing individual components of natural systems risks devaluing the whole; and that protecting nature on the basis of its contribution to the economy undermines the idea that it is worth for its own sake.

Proponents of this approach argue that many of these concerns arise from a misunderstanding of its application, and that natural capital accounting provides a means to address the realities of finite resources and the need to find a way to consider the environment within wider government and business priorities.

The nature conservation approach

This is characterised by the preservation of wild fauna and flora and natural habitats and ecosystems, especially from the effects of human exploitation and industrialisation.²⁴

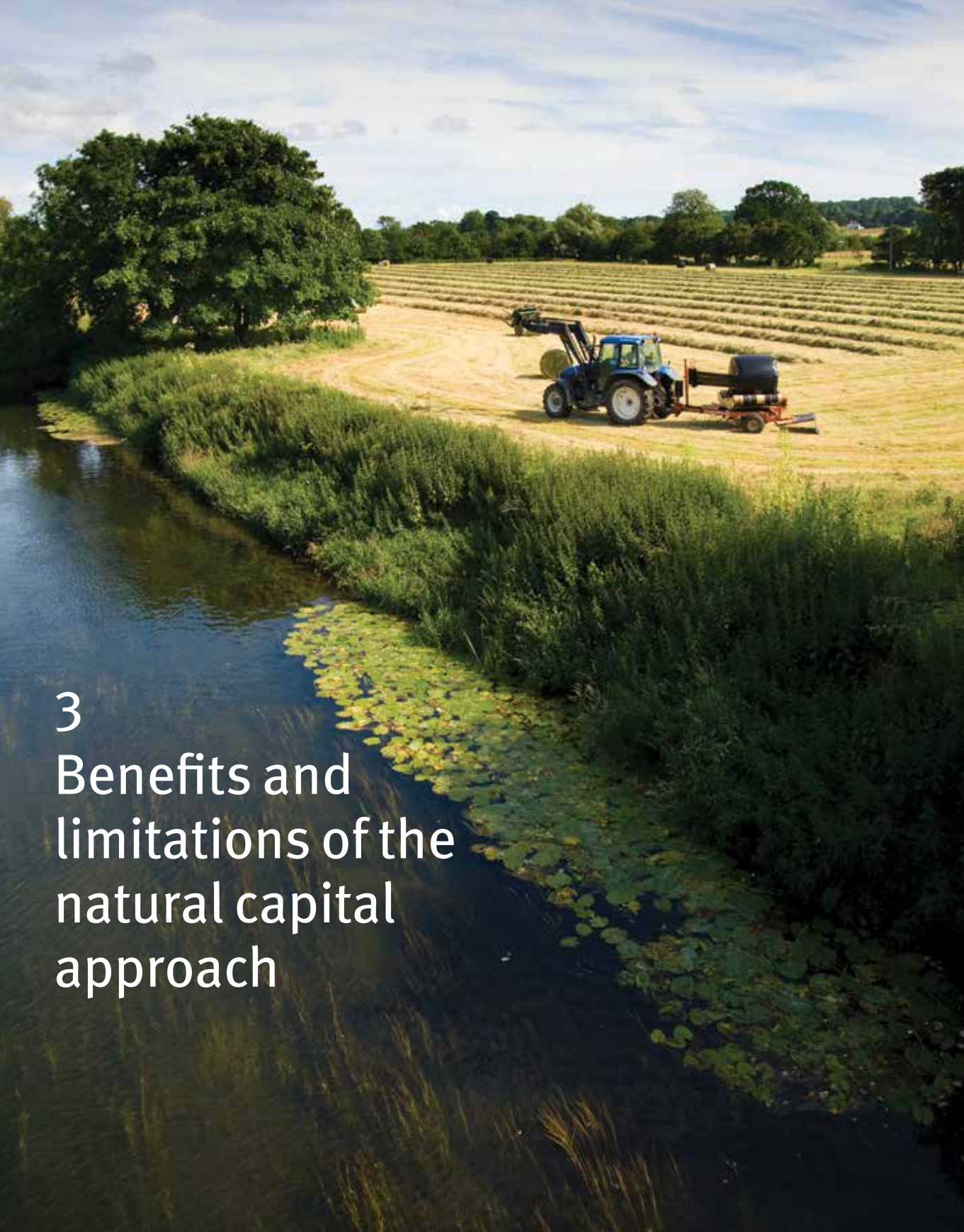
Early conservation focused on preventing damage to wildlife and heritage through legal means, with the Protection of Wild Birds Act, in 1872, becoming the first substantive piece of conservation legislation. The end of the nineteenth century saw the founding of the major conservation organisations, the National Trust and the RSPB, as an expression of growing societal interest in conservation.

In the early twentieth century the practice of protecting land through sanctuaries, or nature reserves, was imported from the United States. By 1949, the government had passed the National Parks and Access to the Countryside Act, creating a network of protected sites and landscapes that are now the backbone of British conservation: National Parks, National Nature Reserves and Sites of Special Scientific Interest.

From the 1960s, growing concern about pollution and environmental degradation led to calls for increased regulation of industry. By the 1980s, conservation policy had evolved to support compensation payments to land managers for suspending damaging activities and managing land to deliver environmental outcomes rather than productive ones, in the first agri-environment schemes.

The two approaches compared

	Natural capital	Nature conservation
Concept	Utilitarian imperative based on nature's value to people. The environment and the economy are interdependent.	Moral imperative based on the principle of stewardship. The environment needs protecting from the impacts of the economy.
Rationale	Integrating the value of natural assets into economic decision making will drive environmental protection.	Nature requires protection from the negative impacts of socioeconomic activity.
How it values the natural world	Soil, water, air and wildlife, and the ecosystem services they provide, underpin economic activity and prosperity.	Soil, water, air and wildlife, and their components, have intrinsic value.
Agent	State, NGO or business driven.	State or NGO driven.
Mechanism	Policy and market investments protect and restore natural assets to ensure continued access to valuable ecosystem services.	Protects nature from market and societal failures through regulation, incentive or direct purchase.
Priorities	Natural assets or ecosystem services are prioritised according to their utilitarian value.	Sites, species or systems are prioritised according to a degree of damage or vulnerability, or for their scientific or cultural value.
The role of government	Use market-based instruments, policy and regulatory tools to reward activities that build natural capital and recover costs from those which undermine it.	Enact and implement statutory protections, and deliver market incentives to encourage soil, air, water and wildlife improvement.
The role of business	Measure and manage natural assets for future returns.	Keep environmental impacts within legal limits and stakeholder expectations.
The approach in action	The Dow Chemical Company's use of wetland as an alternative to building a traditional water treatment facility: the capital cost was \$1.5 million, compared to \$40 million for a water treatment works, saving the company \$282 million over the project's lifetime. ²⁶	Payments to farmers for conservation management: to cover income lost from reduced production and higher management costs; eg creation of wood pasture (£409 per hectare) and to protect and manage habitats of threatened species (£120 per hectare). ²⁵



3 Benefits and limitations of the natural capital approach

The increasing popularity of natural capital thinking should offer an opportunity to balance economic and environmental considerations more effectively than has been the case up until now. But the approach is at the developmental stage. There are no standard approaches to evaluating or valuing natural capital or for putting this thinking into practice, either by business or government.

The economic rigour it implies is its strength. However, it is also potentially a limiting factor in terms of societal acceptability, as it allows that some environmental harm can be justified, provided it does not prevent an environmental asset continuing to deliver economic benefits in the future, and that the harm can be appropriately compensated for elsewhere.

The UN Convention on Biological Diversity, the international protocol for managing natural assets in sustainable and equitable ways, contains 12 principles which could inform development of a framework for putting natural capital thinking into practice.²⁷ In particular, it highlights the need for a mandate from society for managing natural assets in ways which protect both the intrinsic and instrumental value of nature. It also highlights the importance of governance arrangements that enable decisions to be taken at an appropriately local level.

Developing better natural capital instruments

The natural capital approach uses market based instruments to deliver environmental outcomes. This is interpreted in some quarters as implying a hands-off role for government, with business leading. But this perspective overlooks the primary importance of policy and regulation in matching market norms and outcomes with societal needs and expectations.

Natural capital instruments could, therefore, consist of a broad mix of market-making interventions, analytical tools to improve understanding of the economic benefits of the environment and regulatory tools that align market behaviour with environmental needs.

Examples of natural capital instruments

Biodiversity offsetting: a system used by developers and planning authorities to compensate for the impact of economic development through the planning system.²⁸

Payments for ecosystem services: users and beneficiaries of ecosystem services (for example, a business) pay the stewards or providers (for example, land owners) to ensure the continued availability of the services.

Green bonds: environmentally beneficial projects can be paid for by green bonds. These are a debt security, issued to raise capital to deliver projects with positive environment outcomes, usually funded through fixed income investors.²⁹

Green taxation: usually aimed at business, green taxation can either take the form of a tax burden for poor environmental performance or a tax relief for good environmental performance; the level of tax burden or relief is dependent upon the net negative or positive impact a specific action has on the environment.

Natural capital accounting: natural capital accounting enables natural capital stocks to be valued and the impact of activities on them costed, at a national level or at an organisational level (supply chains). This enables negative impacts on natural capital to be economically quantified and incorporated into national and corporate capital accounts.

Habitat banking: habitat banking prices ecosystem services provided by habitats and addresses historical losses of ecosystem services at landscape and catchment scale. It ensures that developers offset any negative impacts on ecosystem services and purchase ‘credits’ to create, restore or enhance degraded habitats, under a long term agreement with land managers.³⁰

The natural capital approach in practice

The conservationists’ motto of ‘stop the rot, protect the best and restore the rest’ alludes to three broad categories of activity needed to re-establish the health of natural systems: preventing environmental damage, maintaining existing environmental resources and restoring degraded or lost natural systems. This is echoed in recent thinking by Professor Dieter Helm on interventions required to protect and restore natural capital: to compensate for damage, balance ongoing activities and protect common goods.³¹

Application of natural capital thinking should enable understanding of the full range of values society derives from environmental assets, and suggest the means by which economic value can be realised from appropriate stewardship of these assets.

Natural capital approaches have begun to inform the thinking of the UK government, which convened an expert body, the Natural Capital Committee, to advise on the sustainable use of England’s natural assets. Among other conclusions, the NCC identified the following nine priority investment areas, where interventions to protect natural capital would create substantial economic value:

The Natural Capital Committee's nine priority investment areas

1	Woodland planting near towns and cities	£500 million per year
2	Restoration of 140,000 hectares of upland peatland	£570 million over 40 years
3	Improving the quality of existing wetland areas	£5 billion over 37 years
4	Protecting and expanding intertidal habitats	
5	Limiting fishing in line with sustainable limits	£570 million per year
6	Urban green spaces	£2.1 billion per year
7	Improving air quality	£20 billion per year
8	Improving the environmental performance of farming	to reduce costs by £700 million per year
9	Managing catchments to improve water quality and soils	

One of the benefits of natural capital thinking is its ability to justify private expenditure to restore natural assets. A key question is to what extent, and in what ways, could private action help to deliver public environmental benefits on the necessary scale.

Natural capital accounting is emerging as a commercially relevant and useful tool for an increasing number of businesses, with benefits including increased resilience to environmental shocks.

A range of barriers inhibit the implementation of natural capital approaches (listed overleaf). Many of these arise from the imprecise nature of translating natural resources into financial considerations, and from the inverse relationship between environmental impacts and value of goods along supply chains. And much of the increased value of sustainable land management does not accrue to the land manager, as demonstrated by the example of managing the National Trust's Wimpole estate on the following page.

Natural capital accounting on the Wimpole Estate

The National Trust calculated that changes resulting from improvements on its Wimpole estate increased the asset value by over £4 million over five years.

This increase came from the carbon and wildlife benefits arising from conversion to organic farming and the increased recreational value of the estate.

Despite the rise in value, many of these benefits have accrued to society, such as through improved carbon sequestration and biodiversity, and not to the National Trust directly.³²



Business barriers to the natural capital approach

Tools: there is a lack of standardised measurement and analytical tools, although the Natural Capital Protocol is due to be launched during 2016.

Cost: significant capital outlay is necessary to realise some natural capital opportunities.

Substitutability: cheaper alternatives to natural assets can usually be found on global markets if protection increases the price of goods.

Pricing: the value of natural capital is rarely reflected in market prices, making unsustainable exploitation of natural capital stocks largely costless to business in the short term.

Control over assets: the suppliers and beneficiaries of natural capital may have no relationship or business connection.

Consumer markets: there are limited opportunities for companies to recover the cost of developing alternative systems that are better for the environment.

The business case

The scale and type of environmental gains that would be realised through market instruments depends to a great extent on the degree to which a business case can be made for environmental protection. Below, we use the four business cases for protecting the environment identified in chapter one (risk, cost, brand and reputation, and revenue) to characterise the potential benefits to businesses that use a natural capital approach.

Challenges to UK business and the benefits of the natural capital approach

Revenue	Challenge Ability to expand into greener product markets eg the UK market for ethical cosmetics was £626 million in 2013, an annual increase of 13 per cent
	Benefits Fulfil increasing customer demands Innovation to create new opportunities
Brand and reputation	Challenge Brand and reputation impacts of environmental practices eg 20 per cent of people avoid retailers for ethical reasons, costing over £2.5 billion annually in lost sales
	Benefits Win customer loyalty Brand differentiation Attract top talent Attract investment and finance
Risk	Challenge Supply chain resource risks eg Asda supermarket estimated that climate change threatens 95% of its fresh produce worth £266 million
	Benefits Avoid disruption caused by resource scarcity Reduce vulnerability to extreme events Stay ahead of regulatory changes Avoid liabilities caused by environmental damage
Cost	Challenge Increased operational costs eg Insurance pay outs following the 2013-14 floods totalled £446 million
	Benefits Boost productivity and efficiency in energy and resource use Reduce waste Reduce infrastructure capital costs Secure resilient resources

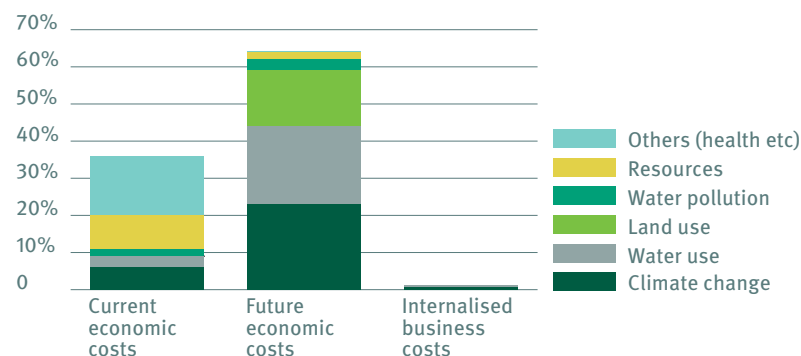
Natural capital accounting highlights that there is a considerable gap between the costs to business from natural capital depletion and the value lost by society as a whole (see below). Yet the costs of action to preserve natural capital may be considerably lower than the value of the natural capital, creating opportunities for business to generate positive returns from natural capital investments.

Identifying the ways in which a business could gain by improving its environmental footprint depends on the relationship between a variety of costs or values. The Dow Chemical Company example given in the table on page 15 shows a clear cut investment case where the financial return from wetland creation significantly exceeded the costs incurred. For actions which will not deliver an immediate financial return, where the value of improvements to natural capital cannot be easily quantified, or where the value of natural capital improvements will accrue principally to society, the business value of investing in natural capital may not be sufficient to justify action.

Accounting for natural capital losses along the value chain

Analysis by the consultancy Valuing Nature indicates that nearly two thirds of the cost to society of the environmental impacts of typical supply chains relying upon natural resources is not currently addressed.³³ One third of those costs are being met through increased government spending or costs to other industrial sectors. Only a tiny fraction of natural capital loss will currently be being addressed by the company.

The natural capital debt: how the economic costs of current natural capital use are being deferred to the future



Current economic costs: natural capital impacts currently addressed within the economy. This includes public health costs, restoring soil fertility, treatment of water etc.

Future economic costs: natural capital impacts that are not currently addressed within the economy. This includes most future climate change impacts, soil loss, loss of non-renewable resources and other land use impacts.

Internalised business costs: natural capital impacts that are currently addressed by a typical company, for example through efficiency programmes focused on water, waste, energy and packaging or sustainable sourcing initiatives.

Market forces may well lead to greater integration of natural capital value into calculations of the business value of environmental protection. Drivers for this change may include more widespread adoption of natural capital accounting, increased consumer awareness, increased risks and costs from environmental degradation and technological advances enabling operational improvements. However, all these drivers may be slow to develop.

The natural capital business case focuses around avoiding the costs of environmental damage and capturing the benefits of maintaining environmental assets which support the long term enterprise. These are the areas in which there is the strongest case for private investment.

However, restoring natural systems at a meaningful scale can be so costly that the benefits to an individual business are likely to be insufficient to stimulate action. New mechanisms are, therefore, needed to enable a business to benefit from investment in common goods.

The case for investment and underlying drivers

Business case	Minimise harm	Maintain status	Restore
Reduce risks	Resource security	Secure critical raw materials supplies	Investing in non-substitutable resources
Reduce costs	Resource efficiency	Secure critical raw materials supplies	Use of large volumes of potentially vulnerable resources
Enhance brand and reputation	Licence to operate	Corporate citizenship	Strong association between corporate identity and product brand with specific place or type of resources
Grow revenue	Brand positioning and revenue growth	Brand positioning and revenue growth	Strong association between corporate identity and product brand with specific place or type of resources

- Strong investment case
- Potentially strong investment case
- Niche investment case

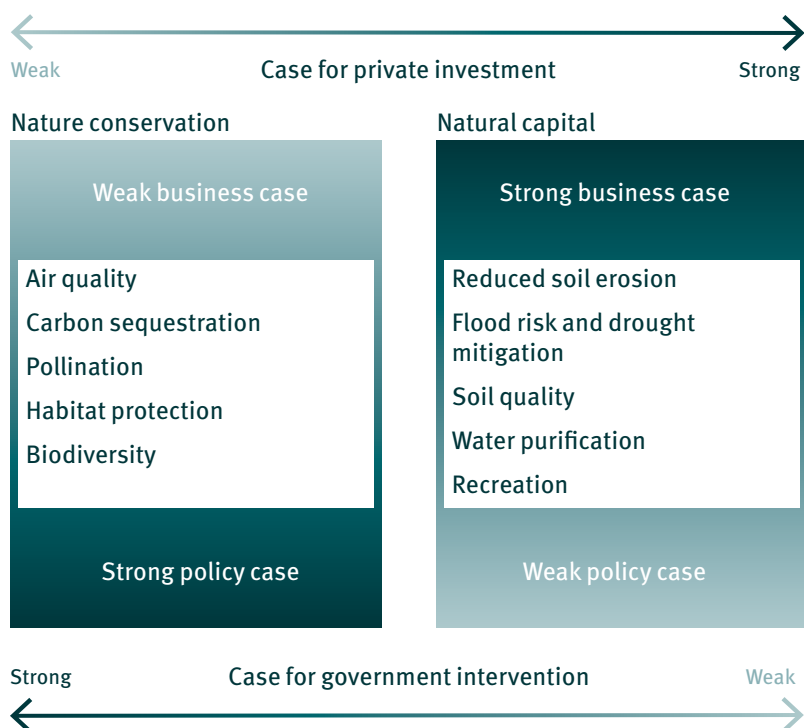
Except in rare circumstances, decisions taken on the basis of a business case could justify actions that minimise environmental harm and maintain the status of environmental systems more easily than those that restore degraded natural assets.

Some environmentally beneficial interventions will be more ‘investible’ for business than others. The case for investment is strongest where there are measurable business impacts on the natural capital stock, or where a commercial relationship exists or can be created between the provider and the beneficiary of natural capital.

Soil and water are easier stocks to value and connect to a market than air and biodiversity. Clean air and healthy biodiversity benefit society at large, making the costs of maintaining them difficult to allocate to a business customer. Soil and water degradation has more immediate and proximal consequences such as flooding, erosion and purification costs, and clearer connections to business beneficiaries. Exceptions exist in each case, but the overall implication is that the natural capital approach may drive improvements in soil and water more readily than for air and biodiversity, although these may be delivered as co-benefits.

The natural capital approach could be an important tool in nature protection, revealing the economic value of natural assets. But the fact that so many environmental costs are external to business means that private investment is likely to focus on minimising harm to natural assets and, in some circumstances, on investing in their maintenance, particularly soil and water. Only in certain rare instances could natural capital thinking lead to private investment into dealing with lost or degraded natural systems at scale, for instance in restoring biodiversity.

Where the case is strongest for each approach





4 Benefits and limitations of the nature conservation approach

At the EU level, environmental policy rests on precaution, prevention and polluter pays principles.³⁴ Broadly, these direct policy to ensure that unacceptable environmental risks are avoided, that harm is prevented altogether or rectified at source, and that individuals or organisations which cause environmental damage should bear the costs of restoration. The sustainability principle can also be included as recognising environmental limits to human activities.³⁵ A fifth principle, that public money should be available to support public goods, has emerged from the agricultural reform debate in the UK, based on the economic need to pay for environmental externalities not delivered by markets.

Nature conservation instruments

A sophisticated body of environmental policy instrument exists at UK and devolved levels, and their types can be defined broadly as regulation, incentives and purchasing or leasing land (land sparing).

Regulation includes command and control mechanisms and market based instruments, including site and species protections, and an array of interventions to prescribe or prohibit activities.

Incentives include the use of conservation grants, subsidies for beneficial activities, payments for services and conditions on subsidies for other activities. The broad purpose of this approach is to secure management changes which benefit the environment in return for a payment.

Purchase or leasing approaches are usually used to spare land from commercial uses and create reserves providing high quality habitat and associated soil and water benefits. This approach is also employed on a private basis by NGOs, creating a large and important network of private and publically owned nature reserves.

Opposite we assess the strength of the policy case for intervention using the different categories of policy instruments, according to the principles of environmental policy.

How conservation approaches can be applied

Conservation policy can be used to address a wide range of situations effectively. There is a strong case for most policy interventions across the spectrum of environmental need, with the need for incentive payments and land sparing through reserves, focused on maintenance and restoration, and the need for regulation strongest to ensure maintenance and prevention of harm.

Environmental challenges and the benefits of nature conservation policy

Regulation	<p>Challenge</p> <p>Ensure a common baseline eg environmental liability, site and species protection, emissions control regulations</p> <hr/> <p>Benefits</p> <p>Directly prevents environmentally – damaging practices Costs accrue to businesses performing below expected standards Sets limits of acceptable practice Raising standards drives innovation</p>
Incentives	<p>Challenge</p> <p>Stimulate better environmental practice eg agri-environment grants to farmers to compensate for costs incurred and income foregone in conservation measures</p> <hr/> <p>Benefits</p> <p>Direct payments are frequently the cheapest and most reliable way to ensure environmental outcomes Government can directly spend on highest priority issues Competing drivers to maintain or restore natural systems are overcome</p>
Land sparing	<p>Challenge</p> <p>Protect environmentally important sites in perpetuity eg 224 national nature reserves in England covering 94,000 hectares</p> <hr/> <p>Benefits</p> <p>Protects nature from commercial exploitation Reduces costs of protection by avoiding annual compensation once land ownership secured Change of land use to ensure higher nature outcomes and system restoration High quality spaces for public benefit and enjoyment</p>

Theoretically, there is no reason why conservation policy instruments could not be used to solve environmental degradation in the UK at a higher level. However, optimal instruments are often not used, and monitoring and enforcement is inadequate.³⁶ Conservation policy solutions are limited by the degree to which politicians are willing to restrict commercial activities, and by the overall cost of the approach.

An aerial photograph of a landscape. A river flows from the top right towards the bottom right. To the left of the river is a large, yellowish-green field. To the right of the river is a dark green field. The text '5 Aligning the two approaches' is overlaid on the top left of the image.

5 Aligning the two approaches

The appeal of using the natural capital approach as an alternative starting point is that it aligns economic development and environmental protection. Currently, these are largely in opposition to each other.

In chapter three, we explored the potential for commercial activities to pay for environmental improvements. Where there is a business case for investing in nature through existing market drivers, or where one can be created through a change in the policy framework, the pressure on public and charitable funds to support nature conservation could be reduced.

The natural capital approach could have significant beneficial environmental impacts, by enabling companies to understand and protect the value they derive from natural systems. However, this approach is not yet part of mainstream business decision making.

It seems likely that market mechanisms will have limited impact in addressing large scale environmental challenges. Since much of the value of natural capital accrues to society rather than to individual businesses, it follows that the investment necessary to protect and enhance the UK's natural capital cannot reliably come from private transactions alone.

The natural capital approach undoubtedly has the potential to make business an agent of positive environmental action. But its main benefit is likely to be in driving business decisions which limit environmental harm. It is unlikely to restore vulnerable and irreplaceable environmental assets and systems, such as those identified by the Natural Capital Committee.

New government policy should accelerate and amplify the uptake of the natural capital approach by business, to ensure that the true value of environmental assets is properly reflected in markets. It should also have a plan to address environmental needs which cannot be effectively internalised in markets.

In many cases, the cheapest and most effective approach to conservation is to directly pay or legislate for it, rather than supporting activities through more indirect means.³⁷ The need for a regulatory framework for nature conservation will not diminish and, in fact, may strengthen. The natural capital approach does not justify a state retreat from environmental interventions. Rather, it helps to increase the focus of conservation policy resources on circumstances where there is no alternative delivery mechanism. This could increase the scale and pace of natural system recovery.

Our three main conclusions are outlined on the following pages:

Natural capital approaches can drive business action to reduce environmental impacts and maintain beneficial practices

Natural capital accounting helps to reveal the economic and societal value of natural systems. This can be effective in prompting business action to minimise their impacts, and maintain the status of some business critical natural systems. It could be particularly valuable where ecosystem services are already paid for, even if indirectly, eg the state of upland habitats determines both water quality and flood protection, which is paid for through water bills and general taxation.

However, current barriers to investment in natural capital mean that business action may be slow and lead to only incremental improvements, even where a business case for action exists. The business drivers are still too weak to shift existing market practices fundamentally in the ways necessary to create a step change in the protection of the UK's natural assets.

Strengths and weaknesses of the natural capital approach

Strengths

- It better reflects the value of natural assets in economic decisions
- It could access market resources to restore and enhance natural assets
- It informs public expenditure to maximise economic return
- It provides decision making tools for business use of natural assets based on corporate natural capital accounts
- It captures the economic advantages that can be realised from protecting the environment
- It could encourage the development of private markets for sustainable practices

Weaknesses

- There is no common accounting framework
- It excludes environmentally beneficial activities which do not deliver economic return
- Value is not based on environmental need or vulnerability
- It relies on proving economic and business case for investment
- Natural capital inputs are substitutable
- Controversy around pricing nature could inhibit support and implementation



Traditional nature conservation approaches are essential to the large scale protection of natural systems

Established conservation policy interventions to protect vital systems, prevent damaging activities and provide incentives for positive practices, with land ownership by the state or conservation bodies, will continue to be necessary and are likely to be used more extensively. Natural capital thinking can help in identifying the priorities for government resources, and its proponents have identified applications which could increase the state resources available to invest in natural capital, such as a sovereign wealth fund derived from profits from non-renewable resources.

Strengths and weaknesses of the nature conservation approach

Strengths

- A comprehensive framework already exists
- It captures non-realizable economic advantages of protecting the environment
- It sets clear guidelines for protecting nature
- It is not reliant on proving the economic and business case for investment
- It recognises that natural assets are not substitutable
- Avoids controversy over pricing nature and has wide support
- Covers a range of environmental needs from avoiding or minimising harm to restoration and enhancement

Weaknesses

- It disconnects natural assets from markets
- It is limited by the political acceptability of interventions
- The cost of major interventions needed to stay within environmental limits is significant

The value of the nature conservation approach



An aligned approach would increase the overall resources available and improve the protection and restoration of the UK's natural systems

Natural capital and conservation policy are complementary rather than conflicting approaches. Government and private conservation resources are insufficient to meet the scale of the challenge to restore natural systems. The great benefit of the natural capital approach could be to harness business drivers to reinforce the means to protect the environment where a business case can be brought to bear. This would release government and NGO resources for those situations where no business case exists.

There is considerable scope to develop a new policy framework that helps to increase the value assigned to natural capital in business decision making. Enhanced policies to secure delivery of environmental benefits through this route should be put in place before redirecting any conservation policy resources or removing regulatory safeguards.

The natural capital approach may have the most to offer in areas where conservation is struggling to deliver: raising the bar of environmental standards within the sphere of productive land use.

Conservation policy instruments have not succeeded in bringing about the scale of change needed to reverse environmental decline, but they have excelled in protecting environmental jewels and preventing the worst environmental damage. If market reform can deliver more positive environmental outcomes in the managed landscape, conservation resources could be refocused on reversing decline. They could be used for systems restoration and delivering the transformation agenda set out in the government's 2011 Natural Environment White Paper, which aspired to bigger, better, more and more connected places for nature. Continued deployment of conservation instruments, including regulation, incentives and the creation of nature reserves, will be crucial to ensure the successful restoration of the UK's natural systems.

The value of an aligned approach



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Green Alliance
36 Buckingham Palace Road
London SW1W 0RE
020 7233 7433

ga@green-alliance.org.uk
www.green-alliance.org.uk
[blog: greenallianceblog.org.uk](http://blog.greenallianceblog.org.uk)
twitter: @GreenAllianceUK

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