

# **Improving Natural Capital**

**An assessment of progress**

**Fourth report to the Economic Affairs Committee**

**Natural Capital Committee**

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## Background to the Natural Capital Committee

In 2011 the government established a Natural Capital Committee (NCC); an independent, time-limited committee providing advice to the government on the sustainable use of natural capital in England (the elements of the natural environment which provide valuable goods and services to people, such as clean air, clean water, food and recreation). The Committee's main advice to government was to develop a long-term (25 year) plan to meet its goal of improving the environment within a generation.

The current government made a manifesto commitment in 2015 to re-establish the Committee. The Natural Capital Committee was re-instated in January 2016, with a remit through to 2020. As with the first Committee, the NCC formally reports to the Economic Affairs Committee of the Cabinet, chaired by the Chancellor of the Exchequer. The Committee's main role is to advise the government on how to develop its 25 year plan to improve the environment.

The Committee is chaired by Professor Dieter Helm and has six members who collectively bring expertise and experience in the fields of ecology and environmental science, economics, accounting and business. The members are: Professor Ian Bateman; Professor Diane Coyle; Professor Paul Leinster; Professor Georgina Mace; Professor Colin Mayer; and Professor Kathy Willis. The Committee is supported by a secretariat based in the Department for Environment, Food and Rural Affairs.

## Chairman's message

The government's objective of "*being the first generation to leave the natural environment of England in a better state than that in which we found it*" is a bold one. It represents a clear and decisive break with the past: most governments leave the natural environment in a worse state than they inherit it.

The challenges of delivering the objective in a 25 year environment plan are considerable, given the expected increase in population, the major house building programme and other major infrastructure developments. Critical natural capital assets are at risk and the overall picture reported by the Office for National Statistics points to a declining path.

The government's overall environmental objective is nevertheless achievable and BREXIT provides a great opportunity to embed the objective into British law; to provide a statutory basis for the 25 Year Environment Plan; and to create a new agricultural policy and a new framework for environmental protection.

The next two years will determine whether observed declines in natural capital are being reversed and whether the great benefits from enhancing our natural capital to people and businesses are realised, in terms of: better health; educational opportunities; recreation; tourism; sustainable supply chains; better carbon retention and sequestration; better catchment management and natural flood protection; better soils; enhanced, accessible landscapes; and more biodiversity. These are all parts of the great prize on offer. To fail to grasp these opportunities is to condemn us to a lower sustainable economic growth rate. Enhancing natural capital through the 25 Year Environment Plan makes good practical economic sense.

The Natural Capital Committee (NCC) has a clear remit to advise on the development of the 25 year plan. This is the essential framework within which all environmental policies should be set. We are tasked with reporting on progress and making recommendations on how best to meet the government's overall objective. In this, our first annual report of the reconstituted NCC, we report that natural capital is not yet on an improving path and we make 16 separate recommendations. These are both practical and necessary. Shortly we will publish the first version of a "How to Do It" guide to assist not just government but the many private and other owners and managers to account for and value natural capital.

Chairing the NCC is a great privilege, made all the easier by having an excellent secretariat and the support of the Defra leads on the 25 Year Environment Plan, notably Nick Barter and Julian Harlow. I am extremely grateful to them, and of course to the members of the NCC for all their hard work and commitment to this critical endeavour for the British economy.

## Executive summary

The Natural Capital Committee was re-established in 2016 with a mandate to advise the government on the development of its 25 Year Environment Plan and to report on progress towards its delivery.

This is the first annual report of the Natural Capital Committee's second term. Building on the work of the NCC's first term, it makes a series of recommendations to government, setting out a comprehensive approach to protecting and improving England's natural capital, including: the need for ambitious objectives in the 25 Year Environment Plan; a clear governance framework for implementing the plan; using 'Pioneer' projects to test different initiatives; and a consistent approach to the valuation of natural capital and methods for measuring the impact of policy on natural capital.

We recommend that the approach described here be fully embedded in the government's 25 Year Environment Plan. The Committee will continue to assist with the design and implementation of that Plan, developing a 'How To Do It' manual for practitioners.

Specifically, the Committee recommends the following:

1. The government's 25 Year Environment Plan should be progressed rapidly, if there are to be demonstrable improvements in England's natural capital before 2020 and progress in delivering the government's objective "of being the first generation to leave the natural environment of England in a better state than that in which we found it". Currently many aspects of the natural environment are still deteriorating; Development of the Plan has been considerably slower than both expected and desired, in part due to the referendum and BREXIT;
2. The 25 Year Environment Plan should be placed on a statutory footing to move from aspiration to practical implementation. Such legal status will enable greater traction across government and its agencies. There should be a White Paper in 2017 setting out the 25 Year Environment Plan and laying the groundwork for necessary legislation in due course;
3. Governance and accountability of the 25 Year Environment Plan should be assigned to a specific lead institution. This governance should be put on a statutory footing;
4. The government's 25 Year Environment Plan should contain ambitious, long-term outcomes from natural capital ('The Prize'), incorporating the Committee's advice on key policy areas. Outcomes should be quantifiable and measurable so that progress can

be evaluated, corrective actions taken in a timely fashion, and benefits widely publicised and understood;

5. The government's Pioneer projects are key to the implementation of the 25 Year Environment Plan and need to be progressed rapidly. The Pioneers require clear leadership, strong governance, clear reporting requirements and a valuation and accounting framework to help determine priorities, monitor progress and measure performance. They should provide a test bed for aspects of the 25 Year Environment Plan, promote learning about best practice, and establish templates that can be adopted throughout the country;
6. A programme of investment in natural capital by the private and public sectors is required to deliver the government's 25 Year Environment Plan ambition. Resources and investment should be guided by valuations of the net benefits they generate. The government should actively promote corporate natural capital valuation, accounting and reporting. Such action is important because the private sector owns and controls much of England's natural capital. Government and other public sector bodies should account for and value natural capital assets, and use valuations to guide investments in improving those assets and the benefits they provide. Budgetary provisions should be made annually for maintenance and enhancements, as identified in the 25 Year Environment Plan;
7. The 25 Year Environment Plan should provide a key part of the overarching framework for the development of British agricultural policy from 2020, consistent with the objectives of protecting and improving natural capital. Agriculture is the major land use in England and should be one of the central features of any integrated environment plan. Similarly, natural capital should be a central element of the government's plans for food, farming and fishing, and so these plans should be developed in an integrated manner;
8. The new National Infrastructure Commission (NIC) should incorporate natural capital, including its maintenance, restoration and recovery, into long term infrastructure plans; ensuring consistency with the objectives of the 25 Year Environment Plan;
9. Local authorities and major infrastructure providers should ensure that natural capital is protected and improved, consistent with the overall objective of the 25 Year Environment Plan. The Plan should reinforce existing environmental duties of public authorities, including those enshrined in Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to conserve biodiversity, including restoring or enhancing species populations or habitats;
10. England's National Parks contain very significant natural capital, and their powers and duties should be extended to support the objectives of the 25 Year Environment Plan.

Where practical, each National Park should quantify and value the main natural capital assets in its area, using the accounting framework recommended by the Committee in its first term. Valuation should play a key part in the assessment of natural capital investment options. Consideration should be given to the creation of new National Parks;

11. Natural capital catchment based approaches should be encouraged by OFWAT in the Periodic Review in 2019<sup>1</sup>. Water companies are key players in influencing natural capital within water catchments and the investments they are required to make as part of the Review process should help progress the overall objectives of the 25 Year Environment Plan;
12. The government's Green Book<sup>2</sup> on project appraisal should be revised to include the Committee's recommendations regarding the enhanced incorporation of natural capital in identifying priorities and appraising investment proposals. These revisions should recognise that the natural environment is a highly connected 'system' where a single change can generate multiple costs and benefits;
13. A coherent and consistent set of assessment, analysis and decision support tools will need to be further developed and applied as part of the 25 Year Environment Plan with particular attention to supporting the development of Pioneer projects in the first instance. These tools will assist with the identification of priority investments, and provide information about how net benefits from those investments alter between locations and according to management practices. Government should ensure that such a suite of relevant and effective tools are documented, publically available and accessible to all;
14. The Office for National Statistics (ONS) has committed to developing a full set of national natural capital accounts by 2020. Their latest estimates<sup>3</sup> point to a decline in the value of some natural capital assets. The ONS should further develop national natural capital accounts and, in particular: extend their coverage to cover more renewable natural assets; include estimates of the capital maintenance and restoration costs as well as the valuations of renewable natural assets; and incorporate cost based approaches that complement existing valuation methods;
15. There needs to be consistency between Climate Change Committee recommendations and the 25 Year Environment Plan. The 25 Year Environment Plan should incorporate the Climate Change Committee's relevant carbon budget, and should be consistent with

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<sup>1</sup> <http://www.ofwat.gov.uk/regulated-companies/price-review/>

<sup>2</sup> <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

<sup>3</sup> <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapital/monetaryestimates2016>

the recent advice of the Adaptation Sub-Committee on natural capital<sup>4</sup>. Conversely, decarbonisation policies should take account of their impacts on other environmental objectives;

16. The 25 Year Environment Plan should consider the creation and enhancement of new wildlife areas and corridors, including in collaboration with National Parks, landowners, local authorities, developers and infrastructure providers. This should include a commitment by the government to enhance England's wildlife in line with the recommendations of the Lawton Report (2010)<sup>5</sup>.

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<sup>4</sup><https://www.theccc.org.uk/publication/uk-climate-change-risk-assessment-2017/>

<sup>5</sup> Lawton et al (2010) Making Space for Nature.

<http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/index.htm>



## 1. Context

During its first term, the Natural Capital Committee produced three annual reports to government, the third of which brought together all of the Committee's work and advised the government to develop a 25 year plan to improve the environment.

This report is the first annual report of the Natural Capital Committee's second term. It covers the new work undertaken by the Committee since March 2016, as well as providing an assessment of progress by the government to improve natural capital, in particular its work to develop a 25 Year Environment Plan.

### Previous Natural Capital Committee advice

In previous reports to government, particularly its January 2015 State of Natural Capital report<sup>6</sup>, the Committee made a series of important recommendations<sup>7</sup>.

First and foremost, the Committee advised the government that if it was serious about protecting and improving natural capital in England, a clear long term strategy was needed, involving both the private and third sectors. The Committee outlined the critical components of this strategy, including:

- The **building blocks** and the important role of accounting, valuation and clear approaches to prioritisation;
- Specific **investment actions**, such as woodland planting and peatland restoration, for which there is significant supporting economic evidence of the net benefits to be obtained;
- **Financing**, which is central to delivering improvements in natural capital at scale.

The Committee's other key recommendations concerned specific actions to support the delivery of the long term plan. This included: the need to assign institutional responsibility for monitoring the state of natural capital; a challenge to landowners and land managers to create registers of the natural capital for which they are responsible; the need to identify funding for delivery of the Plan; and various recommendations on improving decision support tools such as the government's Green Book and the national natural capital accounts.

<sup>6</sup> NCC (2015) State of natural capital, 3<sup>rd</sup> Report. <https://www.gov.uk/government/publications/natural-capital-committees-third-state-of-natural-capital-report>

<sup>7</sup> The Committee's previous recommendations in full are included in Annex 2.

## The government's response to the NCC's last report

The government responded positively to these recommendations<sup>8</sup>. It committed to develop and implement a 25 Year Environment Plan, proposals for which will be set out in the forthcoming Green Paper. It has also reaffirmed its ambition to *“be first generation to leave the natural environment of England in a better state than that in which we found it”*.

These commitments are encouraging, but the government should now follow up by delivering on them and quickly. The July 2016 referendum and subsequent decision for the UK to leave the European Union (EU) has meant that the development of the 25 Year Environment Plan has been considerably slower than expected. BREXIT does, however, present opportunities; and a considerable amount of effort is required to turn the government's forthcoming Green Paper into a credible, long-term plan for the environment that makes a real difference to the state of natural capital in England.

## The Natural Capital Committee's work programme

The work of the Committee during this second term will be focused around helping government develop a full 25 Year Environment Plan; and also to move the natural capital approach onto a practical footing. In delivering its new Terms of Reference<sup>9</sup>, the Committee's focus will be the translation of the advice of its first term into real world outcomes and delivery support tools.

The Committee would like to thank all of those who have contributed to its work. Further information on the Committee, its full Terms of Reference and other reports can be accessed on our website: <https://www.gov.uk/government/groups/natural-capital-committee>.

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<sup>8</sup> The full government response can be accessed here: <https://www.gov.uk/government/publications/natural-capital-committees-third-state-of-natural-capital-report-government-response>

<sup>9</sup> See Annex 1 or via <https://www.gov.uk/government/groups/natural-capital-committee>

**Natural capital**

Natural capital refers to the elements of the natural environment which provide valuable goods and services to people. The state of natural capital matters, not just because people enjoy the aesthetic elements of landscapes and wildlife of England, but because of the wide-ranging economic benefits that natural assets provide when managed well.

However, the importance of natural capital has traditionally not been included in decision making, which results in the environment being overconsumed and underinvested in. As a nation, we continue to miss significant growth and wellbeing opportunities by ignoring the true value of natural capital in all the decisions we take.

**A natural capital approach**

A natural capital approach, through which natural assets are assessed and changes thereto valued and accounted for in a systematic way, which includes all of the major consequences of change, will help to ensure better informed decisions which together will contribute towards the goal of enhancing the UK's natural capital.

For example, different land management approaches impact on the amount of carbon captured by plants and soil, the severity of flooding, the quality and quantity of food, and the availability and quality of green space for recreation; which in turn impacts on physical and mental wellbeing. Enhancing the quantity, quality, location and accessibility of natural capital will provide greater resilience in the face of pressures on the environment and ensure the valuable benefits are secured for people now and in the future.

## 2. Improving natural capital: an assessment of progress and Natural Capital Committee advice on next steps

The government's ambition to leave the natural environment in a better state for the next generation is challenging but achievable, as long as there is a credible and robust long-term plan of action to get there, with the necessary governance and resources. The government has committed to various actions to deliver on this generational goal; the key undertaking being to develop a 25 Year Environment Plan.

Below, the Committee sets out a series of recommendations to the government, concerning the development of the 25 Year Environment Plan, how it should be taken forward and other matters relating to it.

### Recommendation

- 1. The government's 25 Year Environment Plan should be progressed rapidly, if there are to be demonstrable improvements in England's natural capital before 2020 and progress in delivering the government's objective "of being the first generation to leave the natural environment of England in a better state than that in which we found it". Currently many aspects of the natural environment are still deteriorating; Development of the Plan has been considerably slower than both expected and desired, in part due to the referendum and BREXIT.**

Although the development of the 25 Year Environment Plan has been slower than expected,<sup>10</sup> in part due to the referendum and BREXIT, the government should publish the full initial version of the 25 Year Environment Plan before the end of 2017 as originally scheduled. This timetable will maintain and capitalise upon the momentum and enthusiasm which has been generated thus far.

Currently many aspects of the natural environment are still deteriorating. Although there are examples, such as these, where specific action has successfully been taken to protect and improve natural capital, the overall picture is one of continuing decline: both in terms of individual assets and the benefits they provide.

Loss of natural capital is imposing significant costs on the UK economy and businesses: costs which are often not sufficiently recognised and therefore excluded from economic indicators of progress (such as GDP). However, these costs are becoming increasingly apparent in very

<sup>10</sup> At the time of writing (January 2017) the government has yet to publish the 'Green Paper' setting out the framework for the 25 Year Environment Plan.

tangible ways: flooding; degradation of soil quality; pollinator declines; air pollution; and loss of outdoor recreation areas. Reversing these declines in natural capital matters: firstly, to reduce associated costs; and, secondly, to capture the benefits that an improved environment brings for health, wellbeing and the economy.

Investments in natural capital can deliver real benefits for both public and private sectors. The Committee's earlier work showed that carefully planned investments in natural capital, targeted at the best locations, can deliver significant value for money and generate large economic returns. It demonstrated how investing in natural capital projects such as woodland planting, peatland restoration and wetland creation can generate returns of up to nine times the costs even for large scale projects<sup>11</sup>.

Earlier work also compared the returns from natural capital infrastructure investment to those generated by more traditional infrastructure projects, such as building new roads or railways, and showed that returns from natural capital investments are of comparable scales. For example, in the UK, average benefit cost ratios are about four to one for road schemes and between two and three for rail schemes, compared to between three and five for many natural capital investments.

The urgency to protect and improve natural capital in the short term also arises because it may not be possible to realise fully the net benefits of investments if action is delayed; future benefits may be reduced and investments will be more costly in the future. This is particularly the case where there are thresholds or where certain system properties of the environment are impacted; for example, fish stocks or critical pollution loads.

### Recommendations

- 2. The 25 Year Environment Plan should be placed on a statutory footing to move from aspiration to practical implementation. Such legal status will enable greater traction across government and its agencies. There should be a White Paper in 2017 setting out the 25 Year Environment Plan and laying the groundwork for necessary legislation in due course.**
- 3. Governance and accountability of the 25 Year Environment Plan should be assigned to a specific lead institution. This governance should be put on a statutory footing.**

Governance arrangements for, and property rights over, many natural assets are currently unclear. As a result, responsibilities for delivering particular benefits or stewardship of specified

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<sup>11</sup> NCC (2015) State of natural capital, 3<sup>rd</sup> report. <https://www.gov.uk/government/publications/natural-capital-committees-third-state-of-natural-capital-report>

natural assets, such as species, habitats or water, are divided between multiple organisations at both the local and the national level, with no clear overarching accountability. An even greater number of people and organisations stand to benefit from improvements in natural capital but are not routinely included in decisions that affect it. This division of interests, tasking and commissioning means that integrated decision making can be difficult, and that overall decision making on the environment tends to be sub-optimal.

For the government's 25 Year Environment Plan to have the greatest possible impact, governance arrangements should be clear and one institution should be given an empowered and accountable oversight role. There are a number of possible options to consider, and the Committee recommends that the government reviews these, particularly at the local level. The Pioneer projects (see below) offer an opportunity to undertake meaningful and potentially radical experimentation with different local governance arrangements for the 25 Year Environment Plan, including resource pooling between different agencies and stakeholders.

Clear national responsibilities for delivery of the 25 Year Environment Plan must also be identified, recognising that this is not solely Defra's responsibility and requires the cooperation of many government departments. To this end, the Committee recommends that the 25 Year Environment Plan be put on a statutory footing in due course and progress be subject to independent scrutiny<sup>12</sup>.

#### Recommendation

- 4. The government's 25 Year Environment Plan should contain ambitious, long-term outcomes from natural capital ('The Prize'), incorporating the Committee's advice on key policy areas. Outcomes should be quantifiable and measurable so that progress can be evaluated, corrective actions taken in a timely fashion, and benefits widely publicised and understood.**

Managing natural capital in a coordinated and integrated manner can deliver significant benefits for society in the form of better health, prosperity and wellbeing. This is 'The Prize' on offer with the government's 25 Year Environment Plan.

To have the greatest possible impact, the 25 YEP should contain ambitious, long-term outcomes from investments in natural capital. These should be quantifiable and measurable so that progress towards them can be appropriately evaluated. Determining such outcomes will be important and will require careful analysis and consultation as soon as possible, ideally over the next year. The Committee recommends that a 'benefits approach' is taken where possible,

<sup>12</sup> The Environmental Audit Committee has made a similar recommendation in its latest inquiry 'The Future of the Natural Environment after the EU Referendum'  
<https://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/inquiries/parliament-2015/future-of-the-natural-environment-after-the-eu-referendum-16-17/>

rather than focusing on only improvements to natural assets themselves. This will help prioritise and target policy and actions more effectively, delivering greater value for money.

It is also important to take an integrated approach to determining outcomes and objectives. In this way, a more comprehensive picture of natural capital assets and the benefits they underpin can be assembled. Potential tensions and synergies between outcomes and objectives will also become clearer, helping to identify interventions that deliver the greatest net benefits. To help the government identify ambitious, quantifiable outcomes for the 25 Year Environment Plan, the Committee will prepare a separate piece of advice in 2017.

### Recommendation

- 5. The government's Pioneer projects are key to the implementation of the 25 Year Environment Plan and need to be progressed rapidly. The Pioneers require clear leadership, strong governance, clear reporting requirements and a valuation and accounting framework to help determine priorities, monitor progress and measure performance. They should provide a test bed for aspects of the 25 Year Environment Plan, promote learning about best practice, and establish templates that can be adopted throughout the country.**

The government's Pioneer projects are a key component of the work to inform the 25 Year Environment Plan and the Committee welcomes the government acting on its advice to initiate these projects. Four locations have been announced, covering: a rural landscape in North Devon (the North Devon Biosphere); an urban setting in Greater Manchester; a network of river catchments in Cumbria; and marine and coastal settings off the coasts of East Anglia (the Suffolk Estuaries) and Devon.

The Pioneers will test how a natural capital approach should operate in each setting, providing templates for other areas to follow and adopt. The Committee set out the basic methodology for a natural capital approach in its third report in 2015, and will continue its involvement with the individual Pioneer projects to ensure that they provide practical and scalable outcomes that result in measurable change on the ground.

The Pioneers should be used to test the fit between national and local programmes and priorities, and should provide a means of understanding which methods and approaches might be applicable across locations and at what scale.

Sustained progress on the Pioneers will be required throughout 2017 and beyond if they are to provide exemplar approaches in terms of early wins and longer term achievements. The projects need clear leadership, strong governance and a robust valuation and accounting framework to monitor progress and measure performance against specified benchmarks.

**Recommendation**

- 6. A programme of investment in natural capital by the private and public sectors is required to deliver the government's 25 Year Environment Plan ambition. Resources and investment should be guided by valuations of the net benefits they generate. The government should actively promote corporate natural capital valuation, accounting and reporting. Such action is important because the private sector owns and controls much of England's natural capital. Government and other public sector bodies should account for and value natural capital assets, and use valuations to guide investments in improving those assets and the benefits they provide. Budgetary provisions should be made annually for maintenance and enhancements, as identified in the 25 Year Environment Plan.**

A significant proportion of natural capital is privately owned. It is therefore important to ensure buy-in to the natural capital approach by land owners and managers, utility providers such as water companies, and other key stakeholders. The Committee has convened a land managers group to inform its thinking and to learn from experience on the ground. The focus of the group is the practical implementation of natural capital plans, approaches and measures to support the delivery of the 25 Year Environment Plan, including consideration of how natural capital approaches can inform day to day working, tactical and strategic planning, and the development of natural capital valuation, accounting and other approaches applicable to land managers.

During its first term, the Committee focused on developing a workable, consistent and robust approach to producing natural capital balance sheets, for corporations to use, based on a natural capital asset register. These can be used by those who own or are responsible for natural capital assets to record and value changes in them. The Committee has also contributed to developing a framework for incorporating valuation techniques to guide investments in natural capital improvement. Together these accounting and valuation methods contribute substantially to the incorporation of natural capital into both private and public sector decision making.

It is encouraging to see a range of different organisations taking up valuation and accounting approaches, for example: Lafarge Tarmac; the Environment Agency; the Duchy of Cornwall and Forest Enterprise. Others are considering how to apply these approaches to their operations, for example: Natural England and the Ministry of Defence. The Committee recommends that the government do more to incentivise wider adoption and uptake of natural capital valuation and accounting approaches.



**Recommendation**

- 7. The 25 Year Environment Plan should provide a key part of the overarching framework for the development of British agricultural policy from 2020, consistent with the objectives of protecting and improving natural capital. Agriculture is the major land use in England and should be one of the central features of any integrated environment plan. Similarly, natural capital should be a central element of the government's plans for food, farming and fishing, and so these plans should be developed in an integrated manner.**

It will be important for the 25 Year Environment Plan to be fully aligned with the 25 year food, farming and fisheries plan, which will set out the government's ambitions for these sectors. Farming dominates activities on 70% of UK land<sup>13</sup> and is therefore one of the most important contributors to natural capital management. Equally, food production relies substantially on natural capital.

The impending exit of the UK from the EU provides an opportunity to undertake a more fundamental review of how government supports the protection and improvement of the natural environment. It offers the potential to improve the regulatory framework so that it is more effective at delivering the goals of the 25 Year Environment Plan.

Farmers and other land managers need to be appropriately advised, supported and incentivised to protect and enhance the natural capital that they are responsible for, and to be provided with the relevant tools and technologies to help them carry out these activities.

A long standing position of government has been that 'public money should be for public goods'.<sup>14</sup> If targeted correctly, current subsidy regimes under the Common Agricultural Policy (CAP) could be redirected to make a significant contribution to farm incomes as well as to the government's ambition to protect and improve the environment in a generation; and be economically attractive by providing substantial net benefits for society.

New alternatives to the CAP should not be considered in isolation from other policies, particularly those concerning water quality, flooding, wildlife, clean air, noise, recreation and so forth. A natural capital approach will be vital in supporting joined-up policy design and implementation.

<sup>13</sup> <https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2015>

<sup>14</sup> HMT & Defra (2005) A vision for the Common Agricultural Policy  
[http://www3.unisi.it/aep/ref/HM\\_Treasury\\_DEFRA\\_\(2005\)\\_Vision\\_CAP.pdf](http://www3.unisi.it/aep/ref/HM_Treasury_DEFRA_(2005)_Vision_CAP.pdf)

**Recommendations**

- 8. The new National Infrastructure Commission (NIC) should incorporate natural capital, including its maintenance, restoration and recovery, into long term infrastructure plans; ensuring consistency with the objectives of the 25 Year Environment Plan.**
- 9. Local authorities and major infrastructure providers should ensure that natural capital is protected and improved, consistent with the overall objective of the 25 Year Environment Plan. The Plan should reinforce existing environmental duties of public authorities, including those enshrined in Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to conserve biodiversity, including restoring or enhancing species populations or habitats.**

The government has established the National Infrastructure Commission (NIC) as a statutory body. This is a positive step; however, it now needs to include consideration of natural capital in the development of its infrastructure plans. The Natural Capital Committee's terms of reference include an advisory role to the NIC on 'green and blue infrastructure'. The NCC has engaged with the NIC at both senior and working levels to this end.

Embedding natural capital in England's national infrastructure plans will be critical to the success of the government's 25 Year Environment Plan, and will enrich thinking about priorities for infrastructure spending. Responding to repeated flooding, for example, is an issue on which joining up natural capital and infrastructure plans will deliver benefits and cost savings.

**Recommendation**

- 10. England's National Parks contain very significant natural capital, and their powers and duties should be extended to support the objectives of the 25 Year Environment Plan. Where practical, each National Park should quantify and value the main natural capital assets in its area, using the accounting framework recommended by the Committee in its first term. Valuation should play a key part in the assessment of natural capital investment options. Consideration should be given to the creation of new National Parks.**

In England, we have a rich and varied endowment of natural capital that has shaped, and in turn been heavily shaped by, human activity over centuries. National Parks and other designations provide protection for some of the most important areas and natural assets in the country. The Committee recommends that National Parks and other similar areas implement a natural capital approach, using it to guide maintenance and investment decisions. The

government should support them in taking this approach as part of the 25 Year Environment Plan.

#### Recommendation

**11. Natural capital catchment based approaches should be encouraged by OFWAT in the Periodic Review in 2019.<sup>15</sup> Water companies are key players in influencing natural capital within water catchments and the investments they are required to make as part of the Review process should help progress the overall objectives of the 25 Year Environment Plan.**

Catchment based approaches have an important role to play in effective water management. Coordinated action is necessary at a catchment level by all those who use water, discharge directly to it, or influence rural and urban land management, in order to implement the approach effectively; water companies are key players in this respect. Over recent years, a number of catchment based schemes have been developed and implemented, to help tackle the growing challenge of rural and urban diffuse water pollution<sup>16</sup>.

To stimulate innovation and further adoption of catchment based approaches, the Committee recommends that OFWAT provides sufficient scope for water companies to develop such approaches as part of the 2019 Price Review.

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<sup>15</sup> <http://www.ofwat.gov.uk/regulated-companies/price-review/>

<sup>16</sup> For example Wessex Water's Poole Harbour Catchment Initiative  
<https://www.wessexwater.co.uk/pooleharbour/>

## Recommendations

- 12. The government's Green Book on project appraisal should be revised to include the Committee's recommendations regarding the enhanced incorporation of natural capital in identifying priorities and appraising investment proposals. These revisions should recognise that the natural environment is a highly connected 'system' where a single change can generate multiple costs and benefits.**
- 13. A coherent and consistent set of assessment, analysis and decision support tools will need to be further developed and applied as part of the 25 Year Environment Plan with particular attention to supporting the development of Pioneer projects in the first instance. These tools will assist with the identification of priority investments, and provide information about how net benefits from those investments alter between locations and according to management practices. Government should ensure that such a suite of relevant and effective tools are documented, publically available and accessible to all.**

Revisions to the government's Green Book, which provides policy and project appraisal guidance for the whole of government, are needed to take better account of natural capital. This is urgently required to ensure a consistent and robust approach to appraisal of natural capital across government.

Understanding the value of the benefits derived from natural capital improvement is essential for making better decisions that deliver greater value for money for each pound spent. Many of the goods and services obtained (either wholly or in part) from natural capital are not supplied by private firms through markets (e.g. clean air, woodland walks). These are known as 'public goods' and as such their values are not necessarily well reflected in market prices<sup>17</sup>. The lack of readily observable prices means that the value of natural capital is frequently overlooked or ignored in decision making. However, as demonstrated through studies such as the UK National Ecosystem Assessment,<sup>18</sup> methods have been developed to provide robust values for the benefits derived from natural capital.

By valuing the benefits from natural capital and the costs of maintaining it, the overall value of potential investments can be assessed. This enables the efficient allocation of resources. In other words, valuation is critical to the efficient use of limited resources.

<sup>17</sup> Sometimes even those goods that are provided by private firms have prices that only poorly reflect their value. For example, the price of water supply and treatment services is often highly regulated and may be only weakly related to the value of those services. Valuation methods may be needed to assess values in situations such as this.

<sup>18</sup> UK National Ecosystem Assessment (2011) UK National Ecosystem Assessment: Technical Report, UNEP-WCMC, Cambridge: <http://uknea.unep-wcmc.org/>

Although considerable progress has been made in the valuation of services and benefits provided by natural capital and project appraisal for investments, this work is not often used in practical decision making. This is in part due to a lack of readily available, easy to use decision support tools and this information gap should be addressed. Such tools need to capture variations in values due to both location and management. For example, woodland near a town might generate very substantial recreation values whereas physically similar woodland in a remote area might rarely attract recreational visitors.

However, it is not always possible to value robustly all aspects of natural capital. For example, some of the values associated with particular species and habitats are harder to quantify. It is important to ensure those aspects which cannot be robustly valued at this time are still captured in the decision making process and the Committee has proposed ways of addressing these challenges.

The NCC has identified three general decision situations for which information on the value of natural capital and its services is useful; the approach to valuation depends upon the situation. They are:

1. Determining priorities for investments in natural capital;
2. Determining actions affecting natural capital to: (a) achieve target improvements; (b) avoid deterioration; or (c) compensate for losses;
3. Determining overall progress with objectives to protect and improve natural capital (including at the aggregate level).

The Committee will publish separate advice on the valuation of natural capital shortly.

#### **Recommendation**

**14. The Office for National Statistics (ONS) has committed to developing a full set of national natural capital accounts by 2020. Their latest estimates point to a decline in the value of some natural capital assets. The ONS should further develop national natural capital accounts and, in particular: extend their coverage to cover more renewable natural assets; include estimates of the capital maintenance and restoration costs as well as the valuations of renewable natural assets; and incorporate cost based approaches that complement existing valuation methods.**

Earlier work by the Committee<sup>19</sup> highlighted the need for a coherent set of natural capital metrics, building on existing monitoring frameworks, to provide a comprehensive picture of

<sup>19</sup> See Mace et al (2015) Towards a risk register for natural capital <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12431/full> and NCC (2014) State of natural capital,

how natural capital in England is changing over time. The Committee remains of the view that an oversight body is still needed to develop, synthesise and interpret natural capital metrics as part of the work to develop the government's 25 Year Environment Plan. National natural capital accounts should feature as part of this work. The Office for National Statistics (ONS) has started to incorporate natural capital into the national accounts so that the state of natural capital can be better monitored over time, and action to protect and improve it can be better prioritised.

The ONS recently released updated 'aggregate estimates' of the value of natural capital in the UK,<sup>20</sup> using an improved methodology. Although the accounts are partial in scope - covering agricultural production; public water supply; fish; timber; oil, gas, coal and other minerals; hydro and wind power; carbon sequestration; removal of some air pollutants; and recreation - their coverage is steadily expanding. The Committee advises that, in time, waste-water treatment, wildlife conservation, and the contribution of natural capital to health are also included.

The most recent ONS estimates reveal that:

- There has been a fall in the value of abstracting non-renewable resources such as oil, gas and minerals, falling from £189 billion to £23 billion since 2007. This decline reflects moves in their market prices, as the national natural capital accounts value assets at exchange values;
- 16% of profits from agricultural production can be attributed to services provided from our natural resources;
- 37% of public water supply and 84% of fish production can be attributed to natural capital;
- In asset terms, the partial estimate valuation of UK natural capital has fallen from £664 billion in 2007 to £497 billion in 2014. This decrease can largely be attributed to the falling asset value of oil and gas (reflecting their market price movements), and recreation services (including the consequences of a methodological change), although this was partly offset by increases in the asset values of other categories of natural capital including wind and carbon sequestration. The figures therefore show a mixed picture.

The national natural capital accounts serve the particular purpose of putting estimates of natural capital on the same footing as other figures in the National Accounts and its 'satellites',

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second report: <https://www.gov.uk/government/publications/natural-capital-committees-second-state-of-natural-capital-report>

<sup>20</sup><https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapital/monetaryestimates2016>

based on the international standard, the SEEA<sup>21</sup>. This approach values natural capital assets at their exchange value. In some cases, this can lead to figures that appear counterintuitive. For example, in the latest ONS estimates, the contribution of mineral resources to natural capital has declined significantly compared to previous years. This reflects the large decline in the oil price, and projections of future oil prices. Using these projections to calculate the net present value of the UK's mineral assets has resulted in the published decline. Yet the physical depletion is proportionately far less, and the reduced oil price may slow down future depletion rates.

To address some of these issues, the Committee would like to see the existing estimates of natural capital supplemented by ones produced on the basis of the cost of maintaining renewable natural assets. The ONS is trialling this approach with respect to some individual assets, and the Committee will continue to work with the ONS on this, as well as extending the coverage of the natural assets included in the accounts.

### Recommendation

**15. There needs to be consistency between Climate Change Committee recommendations and the 25 Year Environment Plan. The 25 Year Environment Plan should incorporate the Climate Change Committee's relevant carbon budget, and should be consistent with the recent advice of the Adaptation Sub-Committee on natural capital<sup>22</sup>. Conversely, decarbonisation policies should take account of their impacts on other environmental objectives.**

Natural capital is under increasing pressure, both domestically and globally. The population of England is forecast to grow by nine million by 2040<sup>23</sup>. This will bring large housing and other infrastructure demands that will impact on natural capital but will also increase demands for the wide range of services it provides, such as clean air and water. Around 210,000 new households per year are envisaged, with many of those occurring in the South East.

The climate is also changing, with a number of important markers passed during 2016, including a global average temperature increase of 1°C and surpassing 400ppm CO<sub>2</sub> in the atmosphere<sup>24</sup>. The warming of the planet increases the likelihood of extreme weather events, such as the intense rainfall that led to the Cumbria floods in 2015. The UK Climate Change Risk Assessment 2017<sup>25</sup> identified the top climate change risk areas as: flooding and coastal change; health,

<sup>21</sup> The System of Economic and Environmental Accounts  
<http://unstats.un.org/unsd/envaccounting/seeaRev/>

<sup>22</sup> <https://www.theccc.org.uk/publication/uk-climate-change-risk-assessment-2017/>

<sup>23</sup> <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2015-10-29>

<sup>24</sup> <https://www.esrl.noaa.gov/gmd/ccgg/trends/>

<sup>25</sup> <https://www.theccc.org.uk/publication/uk-climate-change-risk-assessment-2017/>

wellbeing and productivity; shortages in water supply; risks to natural capital assets; risks to food production; and new and emerging pests and diseases.

**Recommendation**

**16. The 25 Year Environment Plan should consider the creation and enhancement of new wildlife areas and corridors, including in collaboration with National Parks, landowners, local authorities, developers and infrastructure providers. This should include a commitment by the government to enhance England's wildlife in line with the recommendations of the Lawton Report (2010).**

England's wild species and habitats are under increasing pressure due to the expansion of agriculture and the built environment, and there is growing evidence of the deleterious effects of climate change. All these pressures are set to continue, and even to increase in coming decades. To deliver on the government's ambition to protect and improve the environment, new efforts will be needed to improve conservation management in many sites, to secure large conservation areas and to improve connectivity within a resilient network for nature. The 25 Year Plan should contain an explicit focus on wildlife conservation with new wildlife areas and corridors that lead to improved conservation outcomes for species and habitats in line with the recommendations of the Lawton Report (2010).



### 3. Natural Capital Committee work programme to 2020

In deciding how best to fulfil its Terms of Reference (see Annex 1), the Committee proposes to produce a number of different outputs.

These will include a clear assessment in 2020 of government's progress before its second term concludes.

The Committee will set out in more detail the merits of putting the 25 Year Environment Plan on a statutory footing, to better inform the government's future decision on the status of the Plan.

It will advise on the implementation of the government's Pioneer projects, ensuring there is sufficient ambition, robust analytical approaches and that transferable lessons emerge for other areas.

The Committee will assemble the evidence base for a series of major projects to improve natural capital over the long-term, building on its earlier work and linking with the work being undertaken by the National Infrastructure Commission.

Specifically over the next year, the Committee will:

- Produce its own 'How To Do It' guide, with periodic updates. This will distil best practice and lessons learnt from organisations actively working in the area;
- Publish advice on how to approach valuing natural capital under different decision contexts;
- Publish advice on how to determine long-term outcomes and objectives for the 25 Year Environment Plan;
- Continue to work with the Office for National Statistics and Defra to develop national natural capital accounts and with land managers to encourage the further uptake of corporate natural capital accounting via the Committee's Major Land Managers Group (see Terms of Reference in Annex 4).

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## Annex 1: Terms of Reference for the Natural Capital Committee

### Background

The government is establishing the Natural Capital Committee (NCC) for the duration of this Parliament (through to September 2020), to provide it with independent advice on protecting and improving natural capital. The government's ambition is to improve the environment within a generation, so that England has the best environment and is one of the most beautiful places in the world to live, to work and to bring up a family.

We are working with the government to develop a 25 Year Environment Plan to deliver this vision; to empower people, businesses and the third sector to protect and improve the environment; taking into account the use of data, tools, new technologies and techniques. The government has a large number of environmental data sets which others could utilise to achieve positive environmental outcomes.

The initial phase of the NCC concluded on 30<sup>th</sup> September 2015 and the Committee successfully met its Terms of Reference in full. It provided advice to the government on three main issues:

1. The unsustainable use of natural assets;
2. How action to protect and improve natural capital should be prioritised;
3. Research priorities.

### The role of the Committee

Over this Parliament, the government requires advice from the NCC on the development and implementation of the 25 year plan, which the NCC itself recommended. The Committee, therefore, will move into a new phase of work to help inform the plan's development.

The new NCC will be vital in driving forward the next stage of natural capital work in England. This will include playing a key role in advising the government on environmental assets at risk and ways of identifying priorities for improvement where the benefits are greatest, building on its work of the last three years. To do this, the Committee will need to make use of appropriate knowledge, tools and techniques to ensure natural capital can be

properly and consistently assessed, valued and accounted for in decision-making and economic planning. There should be a strong focus on embedding the use of open data, tools and techniques to facilitate positive action on the environment across the country, and consideration of national (England wide) and local delivery.

The Committee will advise on the importance of natural capital to sustainable economic growth, health and wellbeing and identify potential actions that could be taken to boost these.

The Committee will continue working with the government and the Office for National Statistics to develop national natural capital accounts and work with businesses to develop and apply corporate natural capital accounts, recognising that much of our natural capital is privately owned. It will consider the international dimensions of natural capital in formulating its advice where appropriate. The Committee will also advise the National Infrastructure Commission to ensure that 'green and blue infrastructure' is appropriately considered within wider infrastructure discussions.

The NCC will continue to report to the Economic Affairs (EA) Committee of the Cabinet.

Specifically, the Committee will advise government and its delivery bodies on the development and implementation of an integrated 25 Year Environment Plan to protect and improve our natural capital; making use of appropriate knowledge and tools to identify priority assets for protection and improvement.

In doing so, it should have particular regard to:

- Advising the government on how national environmental priorities could be delivered in partnership with the private, public and third sectors, including local community endeavours;
- Providing practical advice to the government on how people and businesses can reconnect with nature;
- The development of suitable metrics to be used to track progress against the Plan's objectives and benchmarking the English environment with the rest of the world;
- Advising government on progress against the Plan.

The Committee may:

- Produce and publish occasional reports to the Economic Affairs Committee;
- Provide responsive, ad-hoc advice if requested by the Secretary of State for the Environment on behalf of the Economic Affairs Committee;

- Provide advice to Ministers in confidence.

The Committee may not:

- Perform a watchdog or advocacy role with respect to government policy;
- Be policy prescriptive in its advice or publicly comment on specific projects, unless requested by the Secretary of State for the Environment (or by the EA Committee via the Secretary of State);
- Make decisions on classifications or statistical standards.

### **Committee set-up and structure**

The Committee will be set up as an ad-hoc independent advisory body to the government, comprising a Chair and members with expertise in the fields of economics, natural and social sciences, accounting, statistics, data, technical and both local and national delivery. Members of the Committee will be widely recognised as leading experts in their respective fields and have been appointed and perform on the basis of their professional background as opposed to representing any stakeholder interests. Members are expected to act in accord with the principles of public life.

The Committee will be supported in its work by a secretariat based in Defra. It may also set up expert working groups or rely on existing groups to take forward its work.

## Annex 2: Recommendations from the third State of Natural Capital Report (and summary of the government's response)

### Committee Recommendations from January 2015

In order to be the first generation to leave the natural environment in a better state than that in which it was inherited, the NCC specifically recommends that:

1. The government, working with the private sector and non-governmental organisations (NGOs), should develop a strategy to protect and improve natural capital and the benefits it provides. It should contain: a) clear evidence-based targets for natural capital; b) a way of prioritising actions to meet those targets which seeks to maximise their net benefits; and c) milestones against which to monitor progress. The strategy should be given effect in legislation, with regular reports on progress made to Parliament;
2. The government should assign institutional responsibility for monitoring the state of natural capital. This should build on the NCC's work to develop a risk register that systematically assesses the benefits from natural capital;
3. Organisations should create a register of natural capital for which they are responsible and use this to maintain its quality and quantity. The government should incentivise wider adoption and uptake of the corporate natural capital accounting framework outlined in this report and consider requiring provisions to be made for the maintenance of natural capital;
4. The government should urgently step up action to ensure that the Office for National Statistics (ONS) and the Department for Environment, Food and Rural Affairs (Defra) meet the target of incorporating natural capital into the national accounts by 2020. This should include a national balance sheet of the value of our natural assets, estimates of the depreciation of those assets (where this occurs) and a corresponding redefinition of the way in which income and savings are measured in national accounts;
5. The National Infrastructure Plan should incorporate natural capital into each of the main infrastructure sectors, following the mitigation hierarchy for managing impacts (avoid, minimise, restore, offset). An investment programme for natural capital should also explicitly feature in the National Infrastructure Plan;



6. The government should revise its economic appraisal guidance (Green Book), implementing our advice, and as a matter of urgency, apply the revised guidance to new projects;
7. The government should drive a substantial, long term interdisciplinary research programme on natural capital to inform future iterations of the strategy. This should be led by the Research Councils and build on existing initiatives;
8. The government should determine how the plan to protect and improve natural capital is to be funded, drawing on a combination of public and private funding as proposed by the Committee. Specifically, we recommend that the government:
  - a. Commits to capital maintenance expenditures to ensure that the real value of natural capital, as a minimum, does not decline overtime;
  - b. Ensures that damage to renewable natural capital is, where possible, avoided and minimised, but where it does occur, it is fully compensated by investment in renewable natural capital of equivalent or higher priority or value;
  - c. Establishes a ‘wealth fund’ derived from the depletion of non-renewable natural assets, part of which should be used to support the delivery plan;
9. The government, working with business, NGOs and other parts of society, should fully develop a 25 year plan. This plan needs to incorporate all the Committee’s recommendations, detailing specific actions for all parties to deliver the strategy to protect and improve natural capital. This will need to set out who does what, when and where and how actions are to be resourced and incentivised.

### Summary of government response (2015)<sup>26</sup>

We agree with the aims of the Committee’s recommendation to develop a 25 year plan and government will be producing a 25 year plan for a healthy natural economy.

The Plan will:

- Place us a world leader in using data, tools and techniques to understand, map and monitor the condition and value of our land, water, air, sea and wildlife, the benefits they give us and how they are changing;

<sup>26</sup> For full response see: <https://www.gov.uk/government/publications/natural-capital-committees-third-state-of-natural-capital-report-government-response>

- Give people more opportunity to use, enjoy and engage with the natural environment;
- Help individuals and organisations at local, regional, national and international levels to understand the economic, social and cultural value of nature, the impact that their actions have on it, and to use this knowledge to make better decisions and facilitate the design of sustainable financing models;
- Identify our most important and threatened environmental assets, prioritising where investment in them will deliver the greatest benefits and identifying how that investment can best be secured;
- Focus policies on delivering better environmental outcomes;
- Deliver on the range of natural capital related commitments that government has made, including: putting in place a new 'Blue Belt' to protect precious marine habitats; spending £3 billion from the Common Agricultural Policy to enhance England's countryside over the next five years; planting an additional 11 million trees; launch an ambitious programme of pocket parks; tackling air and water pollution; and ensuring the value of Green Belts and AONB's, National Parks, SSSI's and other environmental designations are appropriately protected;
- The 25 year plan will initially look to address outstanding monitoring and data issues, so we can make better informed decisions about where strategic investments in natural capital are needed and what form these should take.

This plan will be an opportunity to improve how we manage our natural environment, aiding the delivery of multiple benefits, resilience in the face of pressure and change (e.g. population growth, global geo-political dynamics, climate change, health issues) and unleashing new and innovative opportunities for investment in our natural assets. Many of the benefits we get from nature are felt most strongly at a local level. Local businesses, land owners and people all shape their landscapes, and this influences what local people get from their environment. We will equip local decision makers with the tools they need to assess the benefits that come from their land and water assets so they can use them most effectively: be it to support livelihoods, their local communities, the economy, the provision of public goods, or personal enjoyment.

**Assign institutional responsibility for monitoring the state of natural capital  
(Recommendation 2)**

The NCC is right that we must improve how we monitor our natural capital. Making this happen will be a priority in the 25 year plan. We need to agree: the natural capital assets that should be monitored; the gaps in monitoring these; and consider what information is required and who has the knowledge needed to improve decisions.

**Organisations should create a register of natural capital for which they are responsible and use this to maintain its quality and quantity (Recommendation 3)**

We agree with the underpinning premise of this recommendation; that organisations that manage land and water assets should be equipped with the knowledge and tools that allow them to assess the wider set of benefits these provide their organisation and society. This in turn can help inform decisions about how these assets are managed and utilised: potentially unlocking new sources of revenue; reducing overheads; increasing resilience; optimising their value; and demonstrating an organisation's contribution to the provision of public goods and services.

We support the NCC's work on developing an approach to corporate natural capital accounting. We will continue to work with the Natural Capital Coalition and the Natural Capital Declaration as they develop an internationally agreed approach to valuing and accounting for nature in business and finance. We will work to ensure that the emerging approaches are consistent, compatible, rigorous, proportionate and replicable.

Once a domestically and internationally agreed approach to natural capital accounting has been established, we will look at appropriate mechanisms to support further adoption of the approach.

We do not currently consider the approach of creating "registers of natural capital" as universally applicable. However we would encourage those organisations with significant influence or dependence on land, air and water assets to consider how best they can manage these to maximise value and minimise risks – the methods explored in corporate natural capital accounting can help enhance the quality of organisational decision making in this regard.

**The government should urgently step up action to ensure that the Office for National Statistics and Defra meet the target of incorporating natural capital in to the national accounts by 2020 (Recommendation 4)**

We agree that getting natural capital in to the national accounts by 2020 is a priority. On 20 March 2015 the Office for National Statistics published a refreshed Roadmap setting out the priorities for the next phase to 2017, reaffirming our commitment and ensuring we stay on track to meet the 2020 target.

**The National Infrastructure Plan should incorporate natural capital in to each of the main infrastructure sectors (Recommendation 5)**

Government recognises the value of natural capital to the country's long-term economic growth. We do not currently agree that an investment programme for natural capital should explicitly feature in the National Infrastructure Plan. We do, however, strive for all publically funded infrastructure investments to make a positive contribution to protecting and enhancing our natural environment, further strengthened by expected upcoming revisions to the Green Book. For example, we are investing £300m as part of the new roads programme to deliver improvements for the local environment.

**The government should revise its economic appraisal guidance (Green Book) implementing our advice (Recommendation 6)**

We agree that there is scope to improve the consideration of natural capital within government's economic appraisal guidance. This is why a programme of work to enhance the core guidance in the Green Book is currently underway. New draft text on natural capital is being developed as part of the overarching guidance on accounting for environmental impacts in policy appraisal, which reflects the NCC's recommendations.

**The government should drive a substantial, long term, interdisciplinary research programme on natural capital to inform future iterations of the strategy (Recommendation 7)**

The NCC rightly identifies the importance of evidence in informing our approach to natural capital policy. The government is already supporting two substantial, long-term interdisciplinary research platforms on natural capital through its Research Councils:

- a. The Biodiversity and Ecosystem Services for Sustainability (BESS) programme (£13m). This is a six-year programme exploring the role of biodiversity in determining natural capital benefits. It has a specific goal to develop novel tools and indicators for tracking and measuring biodiversity and ecosystem services;
- b. The Valuing Nature Network (VNN, £6.5m). This is an interdisciplinary research programme that aims to better understand and represent the complexities of the natural environment in valuation analyses and decision making and to consider the wider economic, societal and cultural value of our natural capital.

In parallel, we will continue to work with the Office for National Statistics to integrate natural capital into our national accounts.

**The government should determine how the plan to protect and improve natural capital is to be funded (Recommendation 8)**

Government acknowledges that having the appropriate funding and incentive mechanisms in place will be a determining factor in the success of the plan. This plan will break new ground, and will need innovative approaches to funding and delivery. As we develop the plan, consideration of how actions will be taken forward, by whom, and how these can be resourced will be a core part of the design process.

Government will use the concept of natural capital to help enhance decisions on how public money is invested in land and water asset management to deliver greater value and multiple benefits. All decisions on spending allocations in this Parliament will be set out following the Spending Review later this year; and will be made on the basis of a wide range of factors such as efficiency and broader evidence on value for money, distributional and equalities impacts and the priorities of the government of the day including performance goals.

However, investment in natural capital is not the sole responsibility of government as the NCC highlights. We want to develop the evidence for the full range of sustainable funding opportunities that could help to underpin the plan. Natural capital accounting, for example, provides a tool that allows organisations to understand the value of assets under their control and the change in these values over time. We would encourage asset owners and managers to apply this approach to ensure that the value of these assets and their associated benefits are maintained over time.

## Annex 3: Summary of the Committee's work programme for 2016

Over the course of this year, the Committee has worked closely with the government to advise it on how to meet its goal of improving the environment within a generation.

Specifically, it has:

- Provided detailed advice to the government and commented on drafts of the 25 Year Environment Plan Green Paper and how this is delivered through four 'Pioneer' areas;
- Advised the government on the importance of realising the goal of protecting and improving the environment within a generation and how to go about establishing the goal for each major natural asset;
- Worked with the Office for National Statistics to develop national natural capital accounts and with land managers to encourage the further take up of corporate natural capital accounting;
- Established protocols for working with key organisations (Natural England, the Environment Agency, the Climate Change Committee and Adaptation to Climate Change Sub-Committee, the National Infrastructure Commission and the Office of National Statistics). Senior level meetings between the respective Chairs have been held and will be repeated up to twice per year, supplemented with more regular contacts at a working level;
- Hosted a series of high-level roundtable discussions to bring together national interests in the approaches at different scales, reflecting the Pioneers – catchment and urban roundtables have already been held, with plans for landscape and marine roundtables to follow.

## Annex 4: Terms of Reference for the Committee's Major Land Managers Group

Co-chairs: Paul Leinster and Kathy Willis

### Terms of Reference

Focus on practical implementation of natural capital plans, approaches and measures to support the delivery of the 25 Year Environment Plan, including:

- How natural capital approaches can inform day to day working, tactical and strategic planning;
- Developing natural capital accounting and other approaches applicable to landowners and managers: learning from each other to overcome barriers; identifying areas where further work is needed;
- Identifying where improvements in local environmental governance are required and in what way;
- How to incentivise land management and land use change, within a natural capital framework;
- The role of payment for ecosystem services approaches;
- Providing knowledge and experience to assist with the drafting of relevant chapters of the 'How To Do It' Manual;
- Considering interactions with the food and farming plan and future plans for environment and land use policy, to ensure that the thinking and outcomes are aligned in relation to natural capital.

Farming will be a clear consideration, as will woodlands, but will not be the only land use covered by the group. Infrastructure will not be considered by this group.

Outcomes should include:

- Agreement to a common outline approach on how to apply natural capital and ecosystem service approaches and thinking, including a common template for natural capital accounting;

- Development of a specific chapter of the 'How to do it' Manual for land managers including how a specific holding interacts with its neighbours and with other parts of the environment not in its direct control;
- Identification of specific issues that need further work;
- Opportunities to work with the Pioneer projects.

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