1. SETTING THE SCENE

SDNPA Teachers conference – workshop session on the River Rother NCIA

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INTRODUCTION TO PEOPLE AND NATURE NETWORK

1.1 The Network documents comprise 2 volumes;

- **Volume 1 (Summary Report)** provides a non-technical description of the Network and the benefits of its high level approach. The target audience for this document is a wide range of stakeholder groups from Authority Members, officers, to Neighbourhood Planning groups and Parish Councils, farmers, landowners, businesses who want to understand what the network is for and to look into the evidence in more detail.

- **Volume II (The evidence and recommendations report)** is a technical document which sets out the evidence used in the preparation of the Network. It also sets out high level development and delivery processes for the recommended actions. The document identifies spatial 'hotspots' for focused action by partners and strategic principles to be used across the network area. It is likely to be used by planning and specialist officers in the Authority and partner organisations, groups and statutory bodies when developing projects and initiatives across the region.

Aim of the Network

To protect, enhance and create a connected nature network of green and blue spaces which sustainably meet the needs of local communities, supports natural ecosystem services and respects the special qualities of the South Downs National Park by proposing the strategic principles for planning, delivery and management of natural capital assets in the area.

BACKGROUND TO THE NETWORK APPROACH

1.2 This report forms the evidence from which the priorities for the People and Nature Network (PANN) have been developed. The Network has evolved from the earlier partnership work towards the South Downs Green Infrastructure Framework (SDGIF) which was gathered by SDNPA consultants, Blackwood Bayne, during 2014-15.

1.3 This evidence report presents a coordinated and cross-sectoral approach to environmental master planning and regeneration through the establishment of a sub-regional network for people and nature. It delivers benefits not only to the environment but also to the development of better places in which to live, work and invest.

1.4 The partners recognised that there is a need for strategic understanding of the pressures and opportunities relating to green infrastructure and natural ecosystem services across the study area.

In order to support economic growth across the area it must retain and enhance it's environmental quality which underpins the economy and gives high quality of life for residents. Considering the evidence and reaching a series of high level principles and spatial priorities will enable more detailed study and delivery plans to be developed in the *areas of most need* which fit within a cohesive strategy.

1.5 The partners also recognised that to do this required working collaboratively, across administrative boundaries and bringing together partners from a range of different sectors.
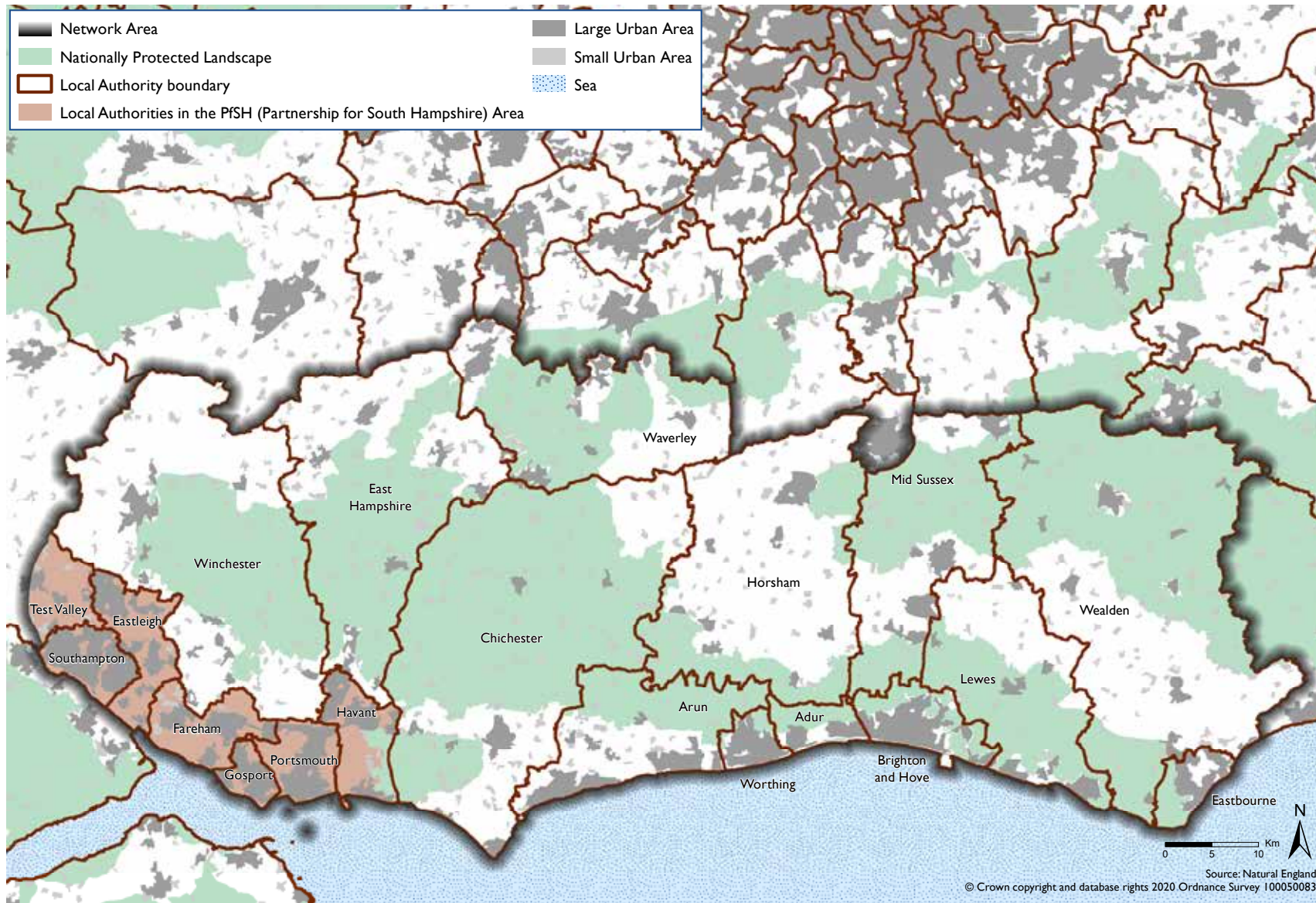
USING THE EVIDENCE

1.6 Although this Network is at a strategic scale, sitting above the Local Plan level, the principles and priorities, along with the evaluation it provides, will support the planning and delivery of green infrastructure; nature networks and the provision of ecosystem services at different spatial scales; sub-regional, district, town scale and at the local scale and through a range of delivery and business models.

THE PANN AREA

1.7 The area covered by this Network is shown in Plan 1.

PLAN 1: NETWORK AREA

Legend:
- Network Area
- Nationally Protected Landscape
- Local Authority boundary
- Local Authorities in the PfSH (Partnership for South Hampshire) Area
- Large Urban Area
- Small Urban Area
- Sea

Map labels: Waverley, Mid Sussex, East Hampshire, Winchester, Horsham, Wealden, Test Valley, Eastleigh, Southampton, Chichester, Lewes, Havant, Arun, Adur, Fareham, Gosport, Portsmouth, Worthing, Brighton and Hove, Eastbourne

Source: Natural England
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We will work not just to preserve but to enhance our natural capital – the air, water, soil and ecosystems that support all forms of life since this is an essential basis for economic growth and productivity over the long term

Foreword, Natural Environment White Paper (HM Government 2011)

1.8 The Network integrates the existing strategies and plans of the partners (where they exist) alongside additional evidence to add depth to the understanding of the area. It is not prescriptive in the specific actions which partners could take to further green infrastructure and nature network planning and delivery. It provides an over-arching network of priorities and principles onto which plans, strategies and most importantly, delivery, can fit.

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THIS NETWORK AND NEXT STEPS

1.9 This evidence is a first step in collaborative working for green infrastructure & natural ecosystem services across the Network area. It sets out to improve understanding of the issues and to be a catalyst for future collaboration, building upon existing partnership working and bringing partners together around a shared agenda.

1.10 It provides a signpost towards the next steps which stakeholders can take. These may be in any number of ways, as shown in Figure 1: Action Planning. However, to maximize the benefits provided by the Network it is desirable for stakeholders to continue to work together across sectors to ensure that holistic and well informed initiatives and delivery plans are developed.

THE NETWORK APPROACH

1.11 The People and Nature Network (PANN) approach sets out a twin track process following the analysis of the evidence. Firstly, the working group identified the need for a set of high level principles to guide green infrastructure delivery across the whole network area. These strategic principles are summarised below. The full strategic principles and action plan are set out in Section 3.

THE STRATEGIC PRINCIPLES

Make Strong Connections

The need for better connections crosses many areas – biodiversity networks and sustainable transport, as well as planning and delivering green infrastructure across boundaries and across sectors.

A Natural and Cultural Canvas

The well-being of the area fundamentally relies on the quality of the landscape, its ecosystems and the services they provide. The natural landscape and cultural heritage should be strengthened and celebrated, providing distinctive settings for its cities, towns and villages and underpinning the future prosperity of the area.

Support Sustainable and Healthy Communities

The health and well-being of people living in the Network area is linked to the quality of their environment. People need access to nature and the benefits of a green environment. New development must build communities, not just housing. This is vital for the health of the towns and villages and contributes to the economic prosperity of the area.

Become Fit for the Future

The Network area needs to build resilience to help it adapt to change. Housing growth and transport will continue to make demands on the landscape and natural resources, particularly water. Climate change will create pressures and challenges which will require adaptation. Economic forces will test farming and forestry. The management of these complex challenges requires forward planning into the medium and long term horizons.
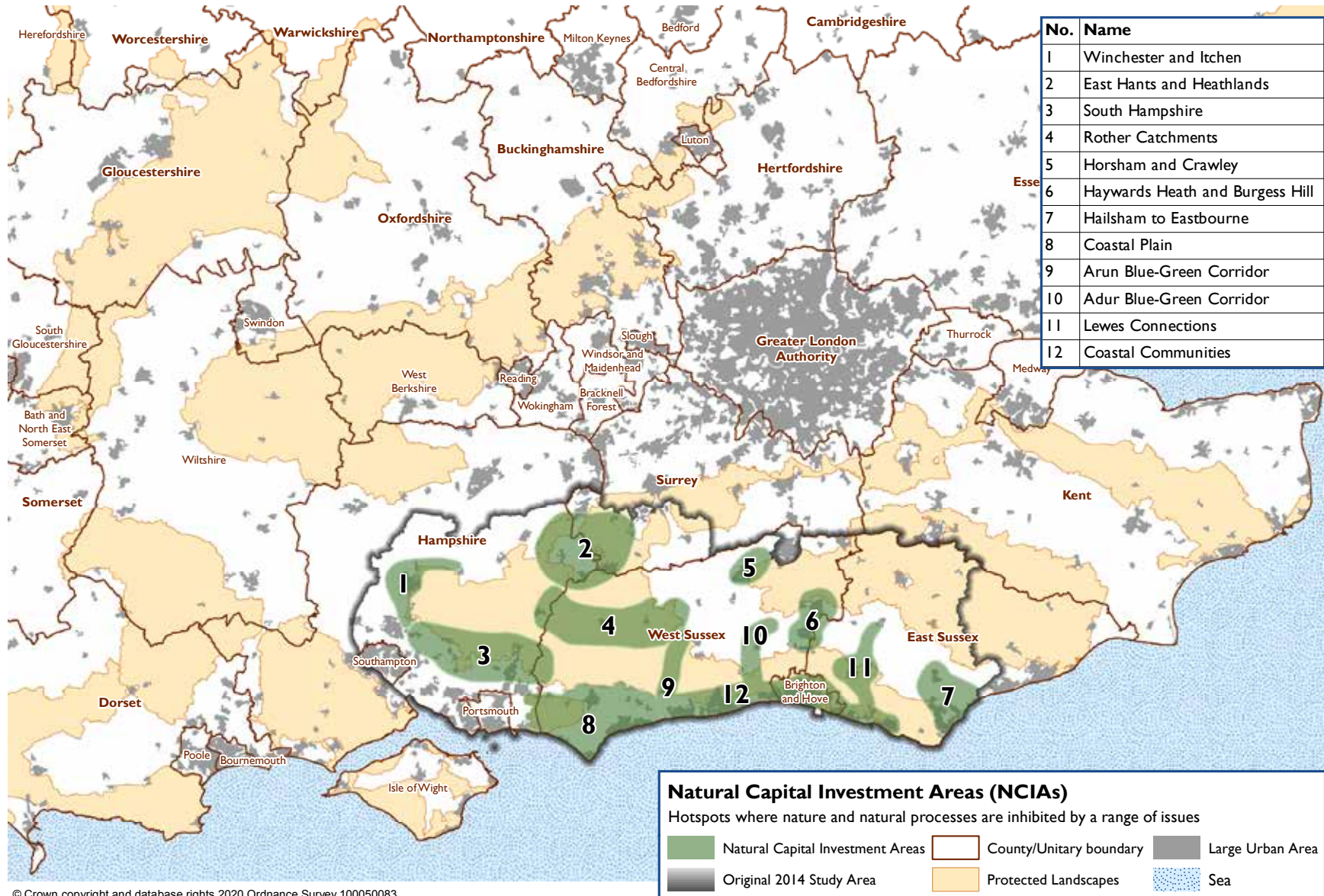
Better Through Working Together

Partnership working, shared objectives, pooling knowledge, securing resources and advocacy will be the keys to success for the Network and its ambitions.

1.12 The second aspect to the twin track approach is the identification of 12 environmental 'hotspots' where a number of environmental, social and economic aspects combine to create areas which are in need of particular attention – these areas a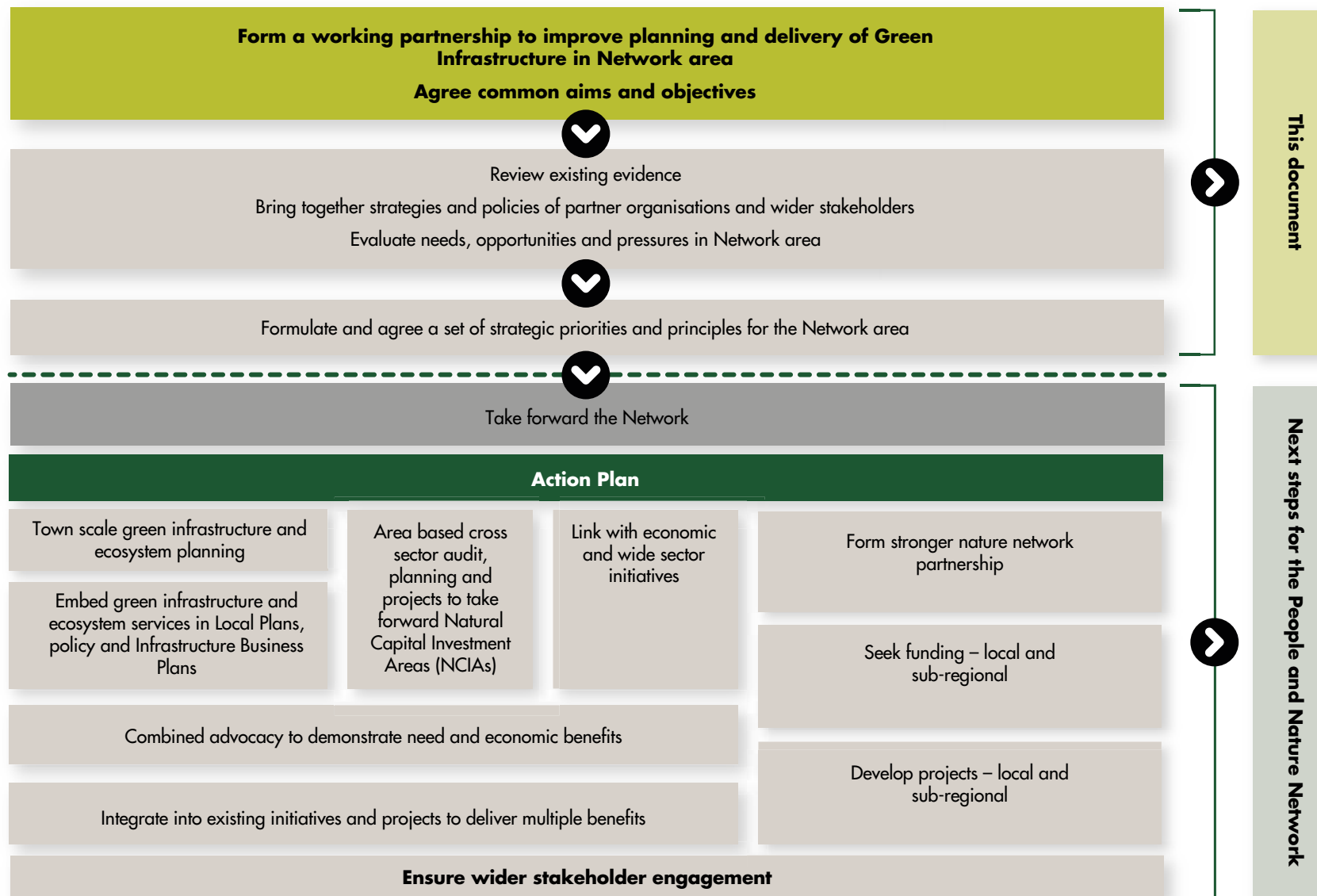re called Natural Capital Investment Areas (NCIAs) and are shown in Plan 2. Each area is considered in more detail in Section 3.

PLAN 2: NATURAL CAPITAL INVESTMENT AREAS (NCIAS)

No.	Name
1	Winchester and Itchen
2	East Hants and Heathlands
3	South Hampshire
4	Rother Catchments
5	Horsham and Crawley
6	Haywards Heath and Burgess Hill
7	Hailsham to Eastbourne
8	Coastal Plain
9	Arun Blue-Green Corridor
10	Adur Blue-Green Corridor
11	Lewes Connections
12	Coastal Communities

Natural Capital Investment Areas (NCIAs)

Hotspots where nature and natural processes are inhibited by a range of issues

- Natural Capital Investment Areas
- County/Unitary boundary
- Large Urban Area
- Original 2014 Study Area
- Protected Landscapes
- Sea

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10

FIGURE 1: AN ACTION PLAN FOR THE PEOPLE AND NATURE NETWORK

Form a working partnership to improve planning and delivery of Green Infrastructure in Network area

Agree common aims and objectives

Review existing evidence

Bring together strategies and policies of partner organisations and wider stakeholders

Evaluate needs, opportunities and pressures in Network area

Formulate and agree a set of strategic priorities and principles for the Network area

This document

Take forward the Network

Action Plan

Town scale green infrastructure and ecosystem planning

Embed green infrastructure and ecosystem services in Local Plans, policy and Infrastructure Business Plans

Area based cross sector audit, planning and projects to take forward Natural Capital Investment Areas (NCIAs)

Link with economic and wide sector initiatives

Form stronger nature network partnership

Seek funding – local and sub-regional

Combined advocacy to demonstrate need and economic benefits

Develop projects – local and sub-regional

Integrate into existing initiatives and projects to deliver multiple benefits

Ensure wider stakeholder engagement

Next steps for the People and Nature Network

11

DEVELOPING THE NETWORK

A PARTNERSHIP APPROACH

1.13 This Network has been developed in a partnership approach between many organisations.

1.14 In January 2014, as part of the consultation of stakeholders for the Access Network and Accessible Natural Greenspace Study,[1] consultees were asked whether a sub-regional approach to green infrastructure planning should be developed and, if so, what form this should take. This consultation revealed a high level of support; around 80% of respondents supported a sub-regional approach.

1.15 In October 2014 a workshop hosted by the South Downs National Park Authority launched the process of developing the then Network to a wide range of invited stakeholders. The workshop generated discussion, ideas and agreement on taking the Network forward.

1.16 Following the workshop, a Technical Working Group and smaller Steering Group were formed from representatives of partner organisations and The members were self-selected and, together, they represented a cross-section of interests. These groups met in March, June and September 2015 to agree the Aim and Objectives

(see next section) and to guide the development and scope of the Network.

1.17 Work has continued on the Network documents and how to widen the remit of the approach beyond the planning system to maximize it's value and application. A number of subsequent key issues have encouraged this revised approach; the revised NPPF which sets out clear requirements for biodiversity networks, green infrastructure planning in its own right and as part of a climate change adaptation and net zero approach; the 25 year Environment Plan which sets out the government's10 targets for achieving:

- clean air,
- clean and plentiful water;
- thriving plants and wildlife;
- reducing the risks of harm from environmental hazards;
- using resources from nature more sustainably;
- enhancing beauty, heritage and engagement with the natural environment;
- mitigating and adapting to climate change;
- minimising waste;
- managing exposure to chemicals;
- enhancing biosecurity.

1.18 The revised NPPF and the 25yr plan cemented government support for strategic planning for nature and ecosystem services.

Form a working partnership to improve planning and delivery of green infrastructure in Network area

Agree common aims and objectives

Review existing evidence

Bringing together strategies and policies of partner organisationsand wider stakeholders

Evaluate needs, opportunities and pressures in Network area

Formulate and agree a set of priorities and principles for the Network area

Take forward the Network

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1   Access Network and Accessible Greenspace Study (2013)

Aim of the Network

To protect, enhance and create a connected nature network of green and blue spaces which sustainably meet the needs of local communities, supports natural ecosystem services and respects the special qualities of the protected landscapes by proposing the strategic principles for planning, delivery and management of natural capital assets in the area.

AIM AND OBJECTIVES OF THE NETWORK

1.19 How does the Network propose to achieve the Aim and Objectives?

1. By engagement with those relevant authorities, businesses, communities, stakeholder organisations and groups, and the statutory bodies within or bordering the protected landscapes either under the Duty to Cooperate or through joint partnership working to deliver the aims of the network;

2. By establishment of a common understanding of ecosystem/natural services, green infrastructure and natural capital amongst stakeholders;

3. Through integrating and building upon existing knowledge, partnerships, initiatives and best practice;

4. Through supporting decision making and delivery at the most appropriate spatial scale and encouraging local input;

5. By drawing together an evidence base, at a scale appropriate to the Network area, to maximise economies of scale, improve the quality of the evidence and ensure consistency across the region;

6. Through identifying and prioritising those issues which are best addressed at a sub-regional scale and across administrative boundaries;

7. Through supporting plan-making processes by developing proposals for strategic green infrastructure interventions that may be included in the evidence base for emerging Local Plan's Infrastructure Delivery Plans; Carbon offsetting, Nutrient Neutrality measures and other Natural Capital investment options.

8. By periodically reviewing the Network and its priorities against the Aim and Objectives to ascertain if these are being met and if the basis for partnership working is delivering continuous improvement in strategic green infrastructure.

The Objectives of the PANN

- Use natural and cultural assets to support health and well-being of people and businesses in the Network area;
- Identify and realise the economic benefits through planning green infrastructure in the Network area;
- Protect and enhance biodiversity and improve habitat connectivity to maintain and improve the health of the environment;
- Protect and enhance the beauty of the landscape in the Network area
- Improve resilience to the effects of climate change;
- Improve the sustainability of communities across the Network area
- Create opportunities for enjoyment, understanding and learning about the natural environment
- Use green infrastructure to support the delivery of ecosystem services;
- Integrate cultural heritage into the Network
- Improve access opportunities to natural greenspace in the Network area for all sectors of society;
- Identify and prioritise opportunities to enhance and deliver optimum benefits from masterplanning for nature
- Encourage the enhancement and delivery of strategic green infrastructure through contributions from new development;
- Plan, deliver and manage natural capital assets to re-naturalise river catchments and other landscapes where possible.

WHAT IS A PEOPLE AND NATURE NETWORK ?

1.20 This study uses green infrastructure planning principles to propose a multi-functional and interconnected network which provides space for nature whilst making strong links for people to engage with and experience the benefits of a healthy natural environment in the south east. The research has considered the following headline and integrated themes; Biodiversity; Access and Recreation; Landscape and Cultural Heritage; Water Resources and Health and Well Being, Further evidence for the Network will be developed and integrated with ecosystem services mapping, natural capital investment, and environmental net gain[2] as these toolkits emerge

and evolve. The precise definition of green infrastructure varies, but there are common and essential elements:

- The spaces/sites include the broadest range of green spaces and environmental features, including the water environment ('blue infrastructure') – these are green infrastructure assets;
- The network is strategically planned and there is connectivity between assets;
- Each natural asset can ideally deliver a range of benefits, for example recreation opportunities, habitats for wildlife, accessible natural greenspace, water quality improvements, natural flood management, climate regulation,

1.21 When planned, designed and managed at a network scale, the range of functions green infrastructure provides can be maximized, making this an important route to delivering natural ecosystem services improvements and supporting sustainable economic growth. This process of identifying the natural assets and functions can also be described as a landscape led approach.

1.22 A landscape led approach at the scale of this network, can make a significant and positive contribution to all categories of ecosystem services.

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2   Environmental net gain – Defra 25 yr Environment Plan **gov.uk/government/publications/25-year-environment-pla**

Green Infrastructure and Natural Assets

- **Natural and semi-natural rural and urban green spaces** – including woodland and scrub, grassland (for example downland and meadow), hedgerows, heath and moor, wetlands, open and running water, brownfield sites, bare rock habitats (for example cliffs and quarries), coasts, beaches and community forests;
- **Parks and gardens** – urban parks, country and regional parks, formal and private gardens and institutional grounds (for example at schools and hospitals);
- **Amenity green space** – informal recreation spaces, play areas, outdoor sports facilities, housing green spaces, domestic gardens, community gardens, roof gardens, village greens, commons, living roofs and walls, hedges, civic spaces and highway trees and verges;
- **Allotments, city farms, orchards and suburban and rural farmland;**
- **Cemeteries and churchyards;**
- **Green corridors** – rivers and canals (including their banks), road verges and rail embankments, cycling routes and rights of way;
- **Sites selected for their substantive nature conservation value** – Sites of Special Scientific Interest and Local Sites (Local Wildlife Sites and Local Geological Sites);
- **Nature Reserves (statutory and non-statutory);**
- **Green space designations** (selected for historic significance, beauty, recreation, wildlife, or tranquility);
- **Archaeological and historic sites;**
- **Functional green space** such as sustainable drainage schemes (SuDS) and flood storage areas;
- **Built structures** – living roofs and walls, bird and bat boxes and roost sites within existing and new-build developments.

Town & Country Planning Association and The Wildlife Trusts (2012), Planning for a Healthy Environment – Good Practice Guidance for Green Infrastructure and Biodiversity.

WHAT ARE NATURAL OR ECOSYSTEM SERVICES?

1.23 Ecosystem services are the benefits provided by the natural environment also called Natural Capital. Often these natural services are overlooked or taken for granted. Examples include the provision of food, timber and water, soil formation, regulation of water and air quality and pollination, alongside a range of services which contribute to quality of life, including recreation and the inspiration of the natural world. The UK National Ecosystem Assessment[3] recognizes the importance of integrated spatial approaches like PANN in delivering ecosystem services.
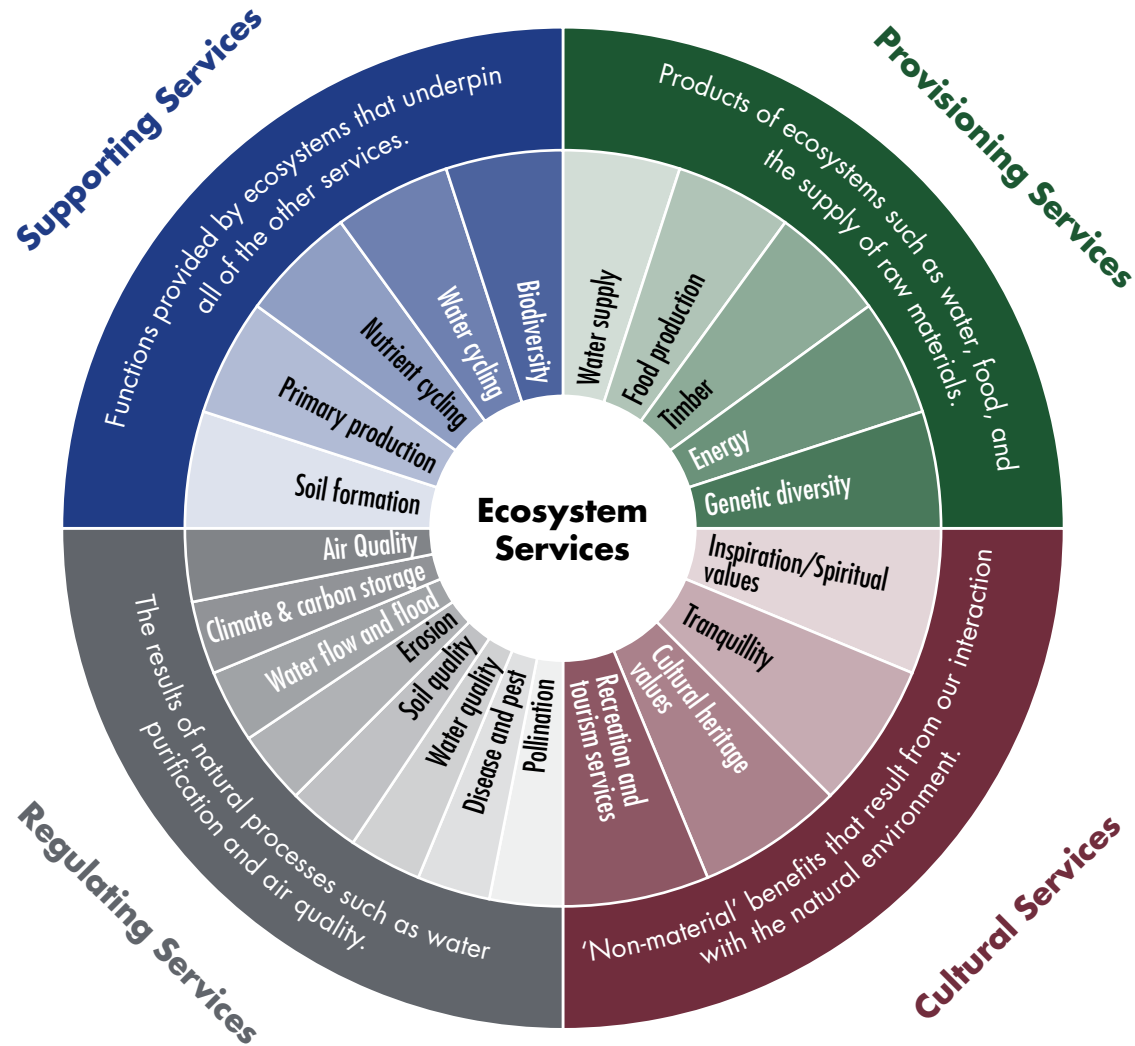
1.24 Ecosystem services are categorised into four types:

- **Supporting services** – are necessary for producing all other ecosystem services including soil formation, photosynthesis, primary production, nutrient cycling and water cycling;
- **Provisioning services** – are the products from ecosystems, including food, fibre, fuel, biochemical and fresh water;
- **Regulating services** – are the benefits obtained from the regulation of ecosystem processes, including air quality regulation, climate regulation, water regulation, erosion

regulation, water purification, disease regulation, pest regulation and pollination;

- **Cultural services** – are non-material benefits gained through spiritual enrichment, reflection, recreation and aesthetic experiences.

Supporting Services
Functions provided by ecosystems that underpin all of the other services.
- Biodiversity
- Water cycling
- Nutrient cycling
- Primary production
- Soil formation

Provisioning Services
Products of ecosystems such as water, food, and the supply of raw materials.
- Water supply
- Food production
- Timber
- Energy
- Genetic diversity

Regulating Services
The results of natural processes such as water purification and air quality.
- Air Quality
- Climate & carbon storage
- Water flow and flood
- Erosion
- Soil quality
- Water quality
- Disease and pest
- Pollination

Cultural Services
'Non-material' benefits that result from our interaction with the natural environment.
- Inspiration/Spiritual values
- Tranquillity
- Cultural heritage values
- Recreation and tourism services

Ecosystem Services

Four aspects of Eco-system Services Source. South Downs Local Plan 2019-2033.

PLANNING FOR NATURE

1.25   The services we get from nature underpin economic prosperity, health and social well-being. Many land use decisions and policies can negatively impact the provision of these services. This can lead to their degradation which incurs both economic and social costs.

1.26   The cost to the NHS of poor Air quality in 2018 has been estimated at £157m.[4] for example and further government estimates suggest that by 2035 these costs could reach £5.3bn.

1.27   The government is recommending that between 250-300,000 new homes should be built per year in the UK for the foreseeable future to address the housing shortfall. This level of urban development will potentially have increasing negative impacts on the natural environment and the services it provides us with. Planning for new homes needs to be delivered within a process of ecosystem services assessment in order to ensure that nature can still function and provide us with the goods and services that we need to survive.

1.28   Having an overarching regional network like PANN will provide context and a natural network for local planning authorities, and many other local stakeholders to 'plug' into when planning for new development or any activity which could have an impact on the area and it's environmental performance.

1.29   The goal of an ecosystems approach is to foster the sustainable use of ecosystems and the equitable distribution of their benefits. To be successful, an ecosystems approach should preserve or increase the capacity of an ecosystem to produce benefits in the future and increase the ability of society to fairly apportion benefits and costs.

1.30   Green infrastructure is being increasingly adopted as an approach or tool that incorporates natural solutions and strategic investment in the natural environment that will help address a range of locally identified issues, commonly being grouped as follows:

- Water and flood risk management.
- Local economic development and housing growth.
- Biodiversity and ecological networks.
- Health and well-being.
- Access, recreation and access to nature.

Key Messages of the UK National Ecosystem Assessment (2011)

- The natural world, its biodiversity and ecosystems are critically important to our well-being and economic prosperity, but are consistently undervalued in conventional economic analyses and decision-making;
- Ecosystems and ecosystem services, and the ways people benefit from them, have changed markedly in the past 60 years, driven by changes in society;
- The UK's ecosystems are currently delivering some services well, but others are still in long-term decline;
- The UK population will continue to grow, and its demands and expectations continue to evolve. This is likely to increase pressures on ecosystem services in a future where climate change will have an accelerating impact both here and in the world at large;
- Actions taken and decisions made now will have consequences far into the future for ecosystems, ecosystem services and human well-being. It is important that these consequences are understood, so that we can make the best possible choices, not just for society now, but also for future generations;
- A move to sustainable development will require an appropriate mix of regulations, technology, financial investment and education, as well as changes in individual and societal behaviour and adoption of a more integrated, rather than the conventional sectoral, approach to ecosystem management.

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4   **gov.uk/government/news/new-tool-calculates-nhs-and-social-care-costs-of-air-pollution**

- Community engagement, action and ownership.
- Climate change adaptation at a landscape-scale
- Local resources – eg food, fuel, land use

1.31 Green infrastructure planning can provide for the ecosystem service needs of business and communities, provide ecological network support and improve the sustainability of existing and new settlements.

1.32 Put simply green infrastructure is our living infrastructure and it is essential to ensure it receives proper consideration, planning, investment, delivery and long term management and is appropriately valued by society.

1.33 There are different ways in which the ecosystem services approach can be applied. The Convention on Biological Diversity identified 12 principles for its application, as outlined by the National Ecosystem Approach Toolkit (NEAT):5[5]

- Promote societal choice using transparent and equitable processes and tools;
- Delegate decisions to the most suitable scale;
- Assess adjacent effects;
- Incorporate economic and social drivers;
- Encourage ecosystem resilience;
- Respond to uncertainty in environmental limits;

- Operate at and across multiple spatial and temporal scales;
- Champion a long term approach;
- Manage change to best advantage;
- Champion biological diversity;
- Optimise evidence from multiple sources;
- Maximise and maintain stakeholder engagement.

1.34 Green infrastructure planning is a key tool for delivering ecosystem services on the ground.

> **Expand the consideration of ecosystems services into green infrastructure planning, improving the evidence base and using local scale outputs to increase the range of benefits delivered.**

1.35 This Network encourages a strategic ecosystems approach for stakeholders to take through the application of key delivery principles together with spatially targeted delivery across the Network area.

SOURCES

- Defra (2010), **Delivering a Healthy Natural Environment (Update to 'Securing a healthy environment: An action plan for embedding an ecosystem approach')**.
- Defra (2015), What Nature Can do for You (A practical introduction to making the most of natural services, assets and resources in policy and decision making).
- Landscape Institute (2013), Green Infrastructure, An Integrated Approach To Land Use.
- Natural England (2009), Green Infrastructure Guidance (NE176[1]).
- UK National Ecosystem Assessment (2011) and National Ecosystem Assessment Follow-On (2014). National Ecosystems Approach Toolkit **http://neat.ecosystemsknowledge.net/index.html**

ECOSYSTEMS SERVICES MODELLING – ECOSERV-GIS

1.36 Decision makers need to have the tools and evidence to incorporate ecosystem services into plans and policies. To begin this for the Network area, outputs from the Geographic Information Systems (GIS) EcoServ-GIS model have been used in the evidence base.

1.37 EcoServ-GIS has been developed by The Wildlife Trusts.[6] It uses spatial data, such as greenspaces, habitats, landscape character, along with socio-economic data to show where ecosystem services occur and to indicate levels of demand (need) for a given ecosystem service and the capacity of nature to deliver that service.

1.38 There are a range of potential outputs available, for this Network five were specifically created: carbon storage, local climate regulation, local noise regulation, water purification, and pollination.

1.39 The output maps work at an optimum scale and in some cases are better applied at a local level rather than at the Network level. The noise pollution maps on Plans 28 and 29 show the difference between the mapping outputs at the framework level and also at a settlement level where potential interventions can be spatially identified.

Defra has distilled the Convention on Biological Diversity into six principles for England:

- Taking a more holistic approach to policy-making and delivery with the focus on maintaining healthy ecosystems and ecosystem services;
- Ensuring that the value of ecosystem services is fully reflected in decision-making;
- Ensuring environmental limits are respected in the context of sustainable development, taking into account ecosystem functioning;
- Taking decisions at the appropriate spatial scale while recognising the cumulative impacts of decisions;
- Applying adaptive management of the natural environment to respond to changing pressures, including climate change;
- Identifying and involving all relevant stakeholders in the decision and plan making process.

Defra[7] (2015), What nature can do for you (A practical introduction to making the most of natural services, assets and resources in policy and decision making).

EXAMPLE OF ECOSERV-GIS SERVICE MODEL & HOW IT IS USED: CLIMATE REGULATION

1.40 Plan 3 maps areas where the natural environment helps to mitigate the impact of the urban heat island effect due to the cooling impact of habitats and tree cover.

1.41 The *capacity* of this service is mapped using the existence, types and configuration of green space in the local environment.

1.42 The demand is mapped using the proportion of urban land cover and the population density and vulnerability of the population to raised temperatures and heat waves based on age profile.
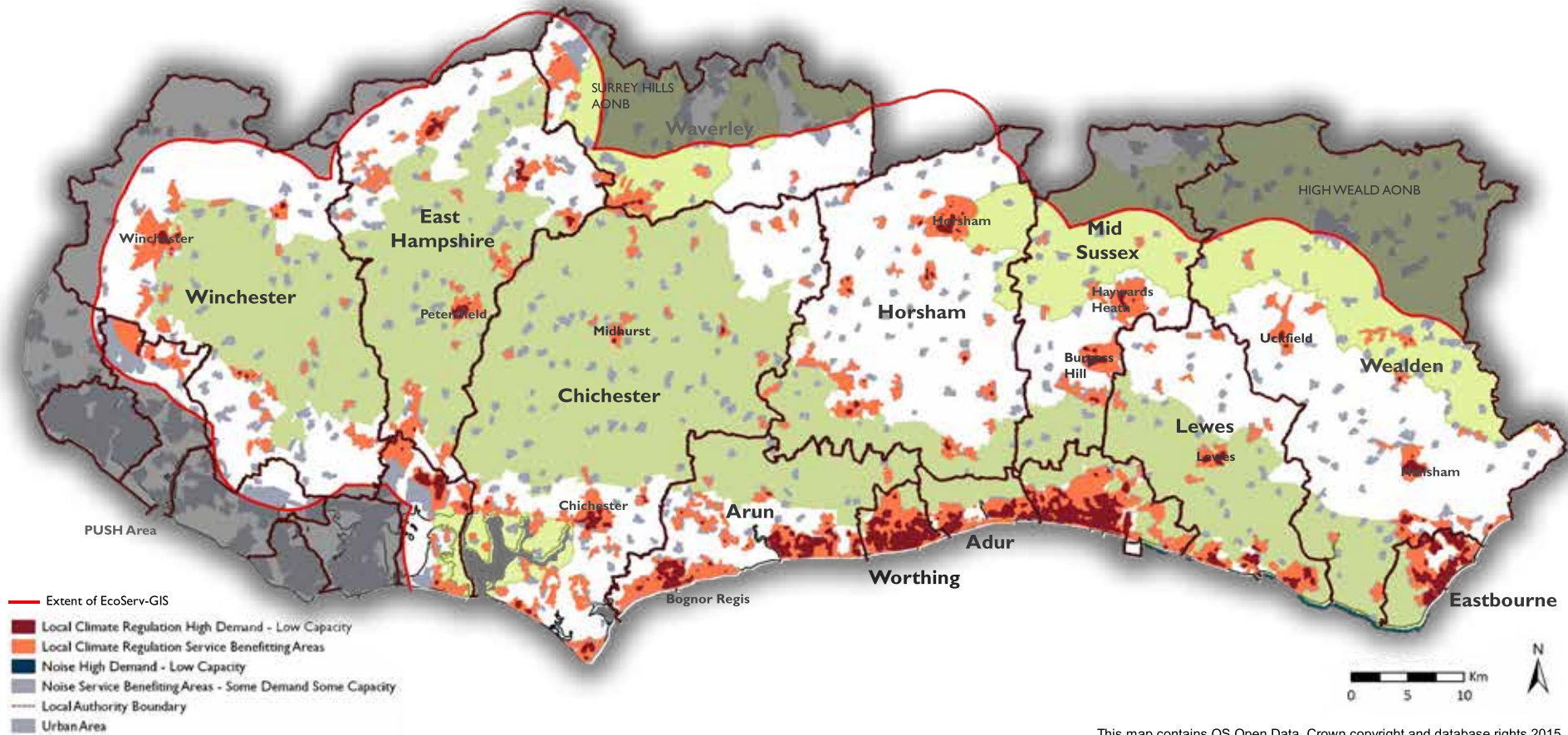
1.43 The settlements within the National Park are generally not large enough to trigger an urban heat island effect. Large settlements on the periphery, such as Brighton, are big enough to reach this threshold.

6   Durham and Scottish Wildlife Trusts.

7   **https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/396840/pb13897-nature-do-for-you.pdf**

19

PLAN 3: ECOSERV-GIS – LOCAL CLIMATE REGULATION

Legend:
- Extent of EcoServ-GIS
- Local Climate Regulation High Demand – Low Capacity
- Local Climate Regulation Service Benefitting Areas
- Noise High Demand – Low Capacity
- Noise Service Benefiting Areas – Some Demand Some Capacity
- Local Authority Boundary
- Urban Area

This map contains OS Open Data. Crown copyright and database rights 2015. EcoServ-GIS data provided by Sussex Biodiversity Record Centre 2015.

WHY A REGIONAL NETWORK APPROACH?

1.44 Planning for nature and people at a strategic level provides a valuable overarching guide for smaller scale activity and their planning, investment and delivery, ensuring that all these activities are inter-connected and collectively contribute to supporting a wider network. A high level network flags where the existing natural assets are, locates the weaker areas and guides priorities for future investment. This evidence has been produced to assist with and coordinate future actions for the delivery of green infrastructure and other ecosystem approaches across the South Downs and surrounding areas.

1.45 Specifically, this evidence will:

- Provide a common cross-border agenda for action and supporting evidence base;
- Ensure that strategic issues are considered at their appropriate scale;
- Promote the consistent and joined up management of larger scale assets, especially those that cross administrative boundaries;
- Support and guide partnership working and provide a platform for bringing partners together;
- Provide a common network to attract and guide investment in green infrastructure.

ENABLING SUSTAINABLE DEVELOPMENT

ECONOMIC GROWTH

1.46 One of the primary reasons for a regional approach to nature is to support sustainable economic growth across the Network area, as defined in the principle of sustainable development.[8]

1.47 Landscape led planning and action can uphold the environmental and social 'pillars' of sustainable development. Green solutions versus grey can also save money, provide environmental benefits and support business evolve into a more sustainable model. This helps to ensure that economic growth does not have a negative impact on the environment and society and, ideally, results in improvements.

SOCIAL EQUALITY

1.48 Decisions which have an impact on environmental quality can create 'winners' and 'losers'. Working at a sub regional level and through the application of an ecosystem services approach, this imbalance can be highlighted. For example, for the distribution of social impacts to be fair, decisions and policies should avoid creating further adverse effects for those who are already the most vulnerable. Ideally these decisions and policies should begin to redress existing inequalities. For example, clear links have been shown between a lack of green infrastructure and health inequalities; therefore policies address this imbalance and should not further disadvantage communities with existing health inequalities.
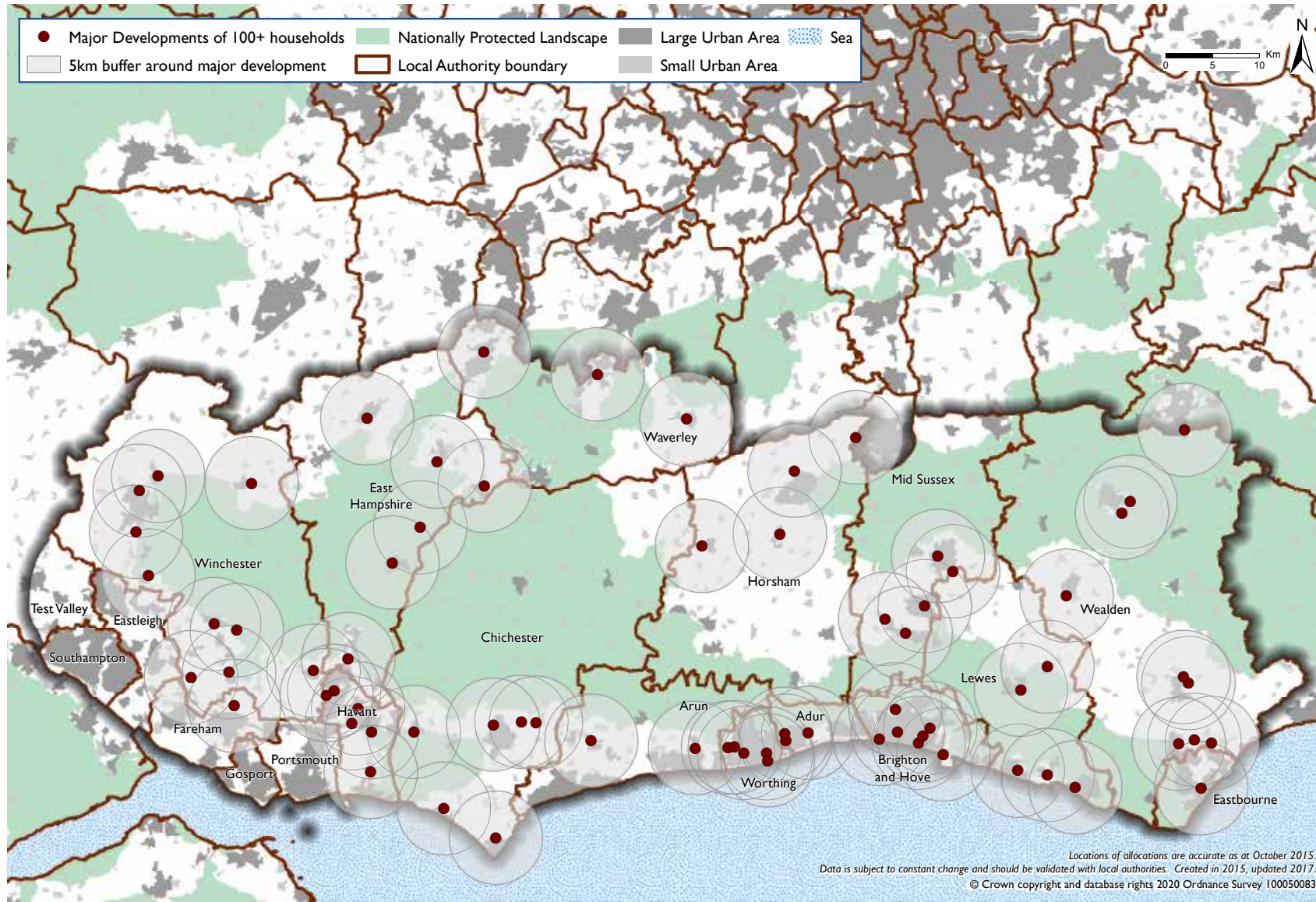
1.49 Inequalities and policy implications on these issues are revealed at a strategic scale helping to enable a more equitable distribution of impacts and benefits. It can also highlight solutions which enhance all three pillars of sustainable development – 'win-win-win' approaches.

NEW DEVELOPMENT

1.50 Plan 4 clearly shows the planned strategic housing sites (>100 dwellings at 2015) mostly concentrated in areas outside and close to the boundaries of the National Park and AONB areas.

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8   The National Planning Policy Network (NPPF) notes that to achieve sustainable development, economic, social and environmental gains should be sought jointly (para 8) and, in pursuit of this, that net gains for nature (para 170) should be achieved.

PLAN 4: HOUSING ALLOCATIONS – GREATER THAN 100 HOUSES (2015)

Legend:
- Major Developments of 100+ households
- 5km buffer around major development
- Nationally Protected Landscape
- Local Authority boundary
- Large Urban Area
- Small Urban Area
- Sea

Locations of allocations are accurate as at October 2015.
Data is subject to constant change and should be validated with local authorities. Created in 2015, updated 2017.
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1. Setting the Scene

1.51 A strategic view at this sub-regional scale is helpful in revealing the clustering and cumulative effects of developments in relation to designated landscapes. It is an indicator of the development pressures on the edges of these landscapes; and it can provide a reference against which changes can be monitored over time. Given the significant scale of housing development which is planned across the Network area, co-ordinated approaches are required to ensure that the sustainable development is achieved and that high quality, accessible green infrastructure is secured for all communities.

NATIONAL PLANNING POLICY FRAMEWORK

1.52 The National Planning Policy Framework (NPPF) requires that local planning authorities should set out a strategic approach in their Local Plans to maintain and enhance networks of habitats and green infrastructure and plan for the enhancement of natural capital at a catchment or landscape scale, including across local authority boundaries[9].They should also identify and map ecological networks, wildlife corridors and stepping stones that connect them, for their conservation, restoration and enhancement.[10]

The provision of safe and accessible green infrastructure can also enable and support healthy lifestyles and local well-being needs.[11]

1.53 The Duty to Cooperate created by the Localism Act 2011 places a legal duty on local planning authorities, county councils and public bodies to engage constructively, effectively and on an ongoing basis on strategic cross-boundary issues.

1.54 The Duty seeks to ensure that strategic planning is delivered effectively through Local Plans and recognises that climate change mitigation and adaptation, biodiversity and ecological networks and flood risk management, for example, are better planned at a strategic scale.

THE DUTY OF REGARD TO NATIONAL PARK PURPOSES

1.55 National Parks have specific statutory purposes to conserve and enhance their natural beauty, wildlife and cultural heritage and to promote opportunities for the understanding and enjoyment of their special qualities by the public.

1.56 There is a general statutory duty on all relevant authorities to have regard to the purposes of these protected areas. This ensures that relevant authorities take account of these purposes when making decisions which may affect the protected area. This is in recognition that a wide range of bodies have direct influence over the protected landscapes through their decisions and activities.

1.57 The duty is set out in Section 11A(2) of the National Parks and Access to the Countryside Act 1949. Natural England has provided further guidance on complying with this duty.[12]

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9   NPPF paragraph 171.

10 NPPF paragraph 174.

11 NPPF paragraph 91

12 https://webarchive.nationalarchives.gov.uk/20130402204840/http://archive.defra.gov.uk/rural/documents/protected/npaonb-duties-guide.pdf

STRATEGIC, CROSS-BOUNDARY AND CROSS-SECTOR WORKING

1.58 Working at a sub-regional scale reveals connections, synergies, pressures and opportunities which may not be apparent at a local level.

1.59 Many features of the environment operate across a much wider geographic scale than those imposed by governmental structures. River catchments, ecosystem services and ecological connectivity are some of the most obvious in environmental terms, but people also travel to different areas for recreation, for example. Yet governmental boundaries, such as local authorities, are the geographic scale at which policies are formulated and delivered, with a drive towards greater localism.

1.60 This evidence report sets out how the spatial priorities for a truly multifunctional nature network have been identified and how they are capable of delivering a broad range of ecosystem services at a landscape scale.

1.61 There are different approaches to the delivery of green infrastructure and nature networks across the southern region. Some organisations have green infrastructure or nature network strategies in place, others do not. This

regional network approach will help partners to coordinate their existing work and develop approaches for developing high quality green infrastructure policy, strategies and delivery. Sharing approaches and knowledge will enable decisions to be made with greater appreciation for the impact of working collectively over a large area.

1.62 Green infrastructure planning and delivery also crosses many different sectors and partner organisations. The cross-sector and strategic approach taken in this Network highlights opportunities for cross-sectoral integration, which will play an important role in securing landscape scale green infrastructure and ecosystem service benefits. There is also more than one 'answer' for any given piece of land and this Network begins the dialogue for decision making to move from separate single interest solutions to collective multi-functional and multi-disciplinary decision making.

MORE EFFICIENT AND EFFECTIVE USE OF RESOURCES

1.63 Resources are and will continue to be, in short supply. There are many pressures on local authority resources (both people and money), with the third sector also facing resource pressures.

1.64 There is a need to deliver more to meet the environmental element of sustainable

development, but at a time when the ability to do so is becoming more compromised unless the projects can deliver cross sectoral benefits which means designing and developing multifunctional projects and landscapes. This requires smarter and more efficient working, reducing duplication and wasted resources.

1.65 There are limited resources for project delivery; these projects need to be delivered where there is the greatest need and where the greatest benefit can be secured also where a different way of working or business model can deliver multiple benefits and maintain profitability eg Knepp Castle Estate which since 2001 has transformed from a mixed arable/dairy farm to a *'series of regeneration and restoration projects aimed at nature conservation, producing organic, pasture-fed meat from free-roaming herds of animals within the Wildland project. We now also run nature-based tourism from the new Safari campsite'.*[13] There is a significant need to maximise the number of benefits secured by projects in order to make them truly multifunctional.

1.66 Co-operation also saves resources in building the evidence base and finding 'future-proof' interventions; for example through evidence sharing rather than duplication of effort, through understanding where there are true gaps in knowledge and addressing these and through

13 **kneppestate.co.uk**

co-ordinated methodologies to ensure that findings can be shared.

1.67   Co-ordinated approaches and robust and compelling evidence at the sub-regional scale is also more likely to unlock larger funding sources which may not be available at a more local level. Funding for local-scale delivery can be secured using evidence that the project fits with the strategic needs and priorities of the Network area.

CO-ORDINATED ADVOCACY

1.68   There are several organisations and existing partnerships working to further green infrastructure, ecosystem services approaches and natural capital accounting, either as integrated approaches or dealing with one aspect, such as biodiversity, water or recreation.

1.69   As well as benefitting cross-sectoral working, as previously outlined, there are greater gains to be secured through presenting a united and agreed position on the needs, priorities and ambitions of the area as a whole. Advocacy to government, Local Enterprise Partnerships, funding bodies and others is more powerful and influential when robustly evidenced and presented in co-ordination. A sub-regional people and nature approach will support this type of approach.

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THE ECONOMY AND GREEN INFRASTRUCTURE

In most cases there is little doubt that returns on green infrastructure investment are high. Investments in green space have been shown to improve a region's image; helping to attract and retain high value industries, new business start-ups, entrepreneurs and workers. This in turn increases the scope for levering in private sector investment, reducing unemployment and increasing 'Gross Value Added' (GVA)

Natural Economy North West (2008)

HOW GREEN INFRASTRUCTURE BENEFITS THE ECONOMY

1.70   The economic benefits of ecosystem services and green infrastructure are becoming increasingly known and evidenced, with a growing body of knowledge demonstrating the links between sustained economic growth and natural processes. Well designed multi-functional green infrastructure is also recognised as having a significant benefit to economic activity.

1.71   Effective planning and delivery for ecosystem services has an essential role in underpinning sustainable economic growth and should no longer be viewed as a 'nice to have' option. There is strong economic evidence to support the role of green infrastructure as an essential component of building communities where people want to live, in attracting and retaining businesses, in tackling obstacles to economic growth in ways which enhance the environment.

1.72   A report for Defra and Natural England[14] investigated the links between green infrastructure and increased economic growth (specifically related to an increase in UK GDP) and found strong evidence of connections between green infrastructure investment and economic growth.

> **Improve understanding of the economic imperatives of the Network area and how green infrastructure can support delivery.**

1.73   New areas including 'Payment for Ecosystem Services' for example the government's Environmental Land Management Scheme (ELMS)[15] will deliver 'public money for public goods' in support of clean air, clean water, healthy soils and the scheme seeks to build a direct relationship between ecosystem services and economic activity. The water companies, health sector, carbon markets and drainage markets could be key delivery agents in the future. Green infrastructure should thus be recognised as a provider of goods, services and materials; and through such provision support economic prospects and employment, some of which might be considered a green infrastructure jobs sector.

In terms of a marginal change, a 1% increase in the amount of green space in an area is associated with up to 0.5% increase in the average house price (GLA Economics, 2003).

INWARD INVESTMENT AND REGENERATION

1.74   Green infrastructure and planning for people and nature increases the attractiveness and distinctiveness of local areas. This attracts inward investment, as well as attracting and retaining employees and customers. Economic growth as a result of investment in green infrastructure can lead to higher levels of employment and tourism and to lower levels of crime.

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14   Eftec and Sheffield Hallam University for Defra and Natural England (2013), *Green Infrastructure's contribution to economic growth: A review.*

15   **http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18542**

1.75   Investment in green infrastructure can be the catalyst for and supporting factor in the wider regeneration of an area. There is evidence that green infrastructure projects that are integrated with other projects or strategies, such as urban regeneration, are likely to provide more benefits, faster.

VISITOR ECONOMY

1.76   The attractiveness of an area, well maintained cultural heritage and the quality of the green infrastructure has an impact on the number of visitors drawn to and spending time in a particular area Within the Network area the nationally protected landscapes (NPL) are strong visitor attractions. Partner authorities need to both attract spend from these visitors and attract their own visitors. A quality environment is a key factor in areas outside of the NPLs succeeding in this.

Visitors to the South Downs National Park spend around £464m annually, supporting 8,200 jobs. 6.8 million visitor stay overnight outside the National Park. (South Downs Visitor and Tourism Economic Impact Study, 2013).

HEALTH IMPROVEMENT

1.77   There is strong evidence that the quality of the outdoor environment is an important factor in encouraging daily exercise, which improves health and reduces public health costs and, potentially, health and wellbeing inequalities. There is strong evidence that access to green space and areas rich in cultural heritage have a positive impact on mental health and stress. Such health improvements feed into increased productivity as well as allowing expenditure on health interventions to be invested elsewhere to support economic growth.

Increasing physical activity through improved access to high quality green spaces could save the NHS £2.1 billion a year. (Defra, 2010).

ENVIRONMENTAL COST SAVINGS

1.78   Planning for people and nature can contribute to the resilience and sustainability of economic growth in a particular place, through reducing important risks, such as flooding and temperature extremes, air quality and water quality. When these issues are addressed through green rather than grey measures there are additional (multifunctional) benefits to biodiversity, amenity and public health. There is good evidence that green infrastructure can reduce damage costs (allowing greater investment in productive activities), often providing a more cost-effective way to meet environmental targets than mechanical/grey solutions.

1.79   In Hampshire, Winnall Moors,[16] a nature reserve and part of the Itchen Valley Special Area of Conservation, has played a vital role in reducing the level of flooding currently affecting Winchester. Allowing the water meadows to flood using traditional water management systems such as sluices and carriers to direct excess water into the floodplain meadows, has resulted in a reduction in the speed by which flood water has entered the city[17].

1.80   There is also compelling evidence that using green solutions, for example Sustainable Drainage Systems (SuDS) and green roofs, bring economic savings as well as environmental and cultural benefits.

1.81   Green infrastructure planning can help to identify and resolve those issues which will directly impede the delivery of sustainable development and economic growth. Green infrastructure can have a positive role in improving several real issues facing the Network area. Examples include traffic congestion or poor transport connections, which costs business, reduces quality of life and causes air quality issues; or water quantity (too little to meet growing demand or too much in the form of flooding). Some of these may be legislative, requiring costly mitigation if not resolved.

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16   Managed by Hants and Isle of Wight Wildlife Trust and Winchester City Council.

17   **http://www.hiwwt.org.uk/news/2014/02/13/restoring-nature's-flood-defences**

CLIMATE CHANGE

1.82 Climate change is a major long-term threat to the economy. The Stern Review[18] estimated that the impacts of climate change were equivalent to losing at least 5% of global GDP each year, indefinitely. Other areas vulnerable to the effects of climate change include real estate, infrastructure, timber, agriculture and tourism.

1.83 Planning for people and nature using green versus grey engineering can support climate change mitigation and adaptation, for example:

- Differing land uses can either reduce or increase the rate of carbon emissions and the land's ability to sequester carbon. Planned green infrastructure can maximise land uses which provide carbon mitigation;
- Trees and plants can improve energy efficiency by reducing the need for heating and cooling of buildings through evaporative cooling and shade;
- Climate change will increase the threat of flooding. Natural environmental interventions can help to reduce this risk and at less cost than some more 'engineered' solutions;
- Urban centres in particular may in future suffer from dangerous heat and air pollution. Some of the impact may be reduced by investment in the natural environment (particularly trees).

1.84 The SDNPA Climate Change Adaptation Plan[19] produced in 2017 sets out the Authority's approach to Climate Change and includes green infrastructure as a key delivery mechanism.

MAKING THE CASE

1.85 Funding and delivery of strategic planning for nature and people requires considerable innovation and creativity. In order to achieve some of the green versus grey options it is necessary to have the evidence and knowledge to develop these ideas and strongly advocate for their inclusion at an early stage. Funding for retrofitting green infrastructure measures is equally demanding.

1.86 Increasingly local authorities are looking to developers to fund green infrastructure through development-related contributions. Green infrastructure must compete with a range of other public goods for developer funding, including roads, education and health provision. It is not always easy to justify the provision of green infrastructure when compared to other more pressing needs. Other delivery mechanisms for the Network could include ELMS, net zero through

nature, environmental net gain, nitrate neutrality measures for example where joined up solutions can address not only the key issue for that work stream, but contribute to a range of economic, societal and environmental needs.

1.87 The economic benefits of green infrastructure are not easy to measure. Economic impact measures the effect on Gross Domestic Product (GDP). Economic value captures the effect on the welfare of people, whether through changes to consumption of traded goods, or more intangible things such as the beauty of a landscape. This approach forms the basis of cost benefit analysis. In making a case for green infrastructure it is therefore important to present the benefits in terms that can be readily understood by decision-makers and in a language that makes green infrastructure more easily comparable with other public goods or infrastructure.

Convey green infrastructure benefits in economic terms and engage with economic partners, e.g. Local Enterprise Partnerships.

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18 Nicholas Stern (2006), *Stern Review on the Economics of Climate, Executive Summary*, UK Government.

19 **southdowns.gov.uk/wp-content/uploads/2015/01/SDNPA-Climate-Change-Adaptation-Plan-Final-On-line-version.pdf**