Wholescape Thinking Guidance Note

Towards integrating the management of catchments, coast and the sea through partnerships

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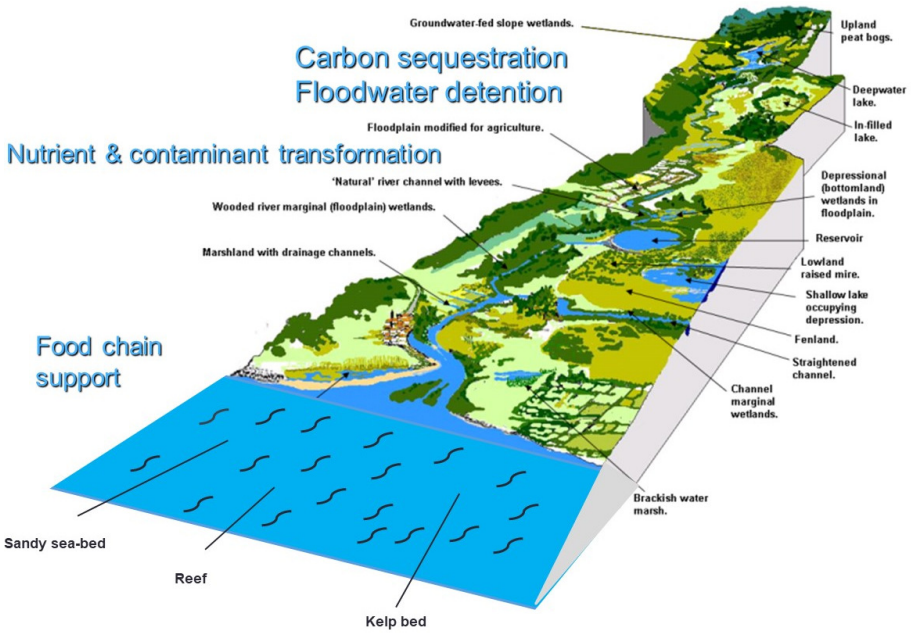
Box 1 Vision

Our aim is to achieve a common vision of wholescape partnership working that helps over-come barriers and deliver effective environmental management. Wholescape thinking will bring different interests together rather than prescribing a fixed agenda. This Guidance Note aims to seed ideas and help the concept evolve.

'Partnership working' (working together for specific reasons) and the wider concept of 'partnerships' (that have long-term governance arrangements) are established concepts. We seek to integrate these ways of working with the need to work at larger spatial scales - combining landscapes, coastal zones and seascapes - which we term wholescape thinking. It offers an opportunity to underpin best practice for managing the natural environment sustainably, making best use of its natural capital.

Our long-term goal is to see partnerships amongst and between government, civil society and businesses that operate at the wholescale - linking, where appropriate, land, the coast and sea. Although wholescape is based on geography (bio-physical scale), we need a transformation in human behaviour to affect a cultural change at this scale.

Putting this concept into practice remains a challenge; the idea is being taught, but not acted upon.



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1. Purpose

This document is intended to stimulate debate and to indicate the direction of travel rather than provide a definitive manual.

There are many excellent examples of the benefits of partnership working between government, civil society and business that have taken an integrated environmental approach at large geographical scales. This way of working has produced new solutions with wider benefits that link different parts of our environment. But these are exceptions rather than the norm. As a result, there are calls for increasing integration of different sectors, participation of stakeholders and linkages across political boundaries that encompass connected ecosystems.

This guidance note is intended as summary guidance for recommending action to integrate the management of catchments, coast and the sea through partnership working and partnerships (Box 1). Its purpose is to:

- set-out how partnership working and partnerships can address major environmental problems
- explain how wholescape thinking can embrace other key concepts in environmental management including the ecosystem approach and natural capital.

It is directed towards central government organisations, local authorities, non-governmental organisations as well as academics and the business community. This guidance will help achieve more effective partnerships to implement the goals of the UK governments' 25-year plan.

2. Background

The stimulus for preparation of this guidance note came from the Natural Capital Initiative's first Summit in 2014[i]. The role of partnerships was high amongst the cutting-edge issues for natural capital debated at this summit. Partnerships were recognised for their ability to achieve integrated management of natural capital within and across land/freshwater-coast-sea boundaries[1]. Intensive debate and a desire to achieve more in this area led to a set of recommendations (Box 2). A follow-up workshop to develop the initial ideas was held in October 2015; it fully endorsed the recommendations from the Summit session and produced a SWOT analysis (strengths, weaknesses, opportunities and threats). It was agreed that there were sufficiently strong opportunities to warrant the production of guidance on partnership working across boundaries. A task force was established in June 2016 and draft guidance endorsed and enhanced at a follow-up workshop of key stakeholders in March 2018.

Box 2 Recommendations from NCI's 2014 Summit session on 'Partnerships for land and water management'

1. Examples of partnership working from a wide range of practitioners should be better highlighted and profiled to raise awareness of their contribution/impact - not only within different government departments and agencies but also in industry, commerce and third sector organisations.
2. Illustrations should be compiled - in particular of how partnership working can enhance and/or restore natural capital in cost-effective ways.
3. Guidelines should be developed, based on practical experiences, of how to develop and better utilize partnership working and overcome any constraints.
4. Seek establishment of a 'start-up' (matched) funding pot to stimulate creation of innovative partnerships and bridge gaps in support of existing ones.

[1] A special session on this topic was coordinated by Professor Edward Maltby (Chair, Devon Maritime Forum) in partnership with, and with contributions from, the Rivers Trust, Coastal Partnerships for estuaries and inshore waters, the Celtic Seas Partnership (WWF), Environment Agency and Defra.

3. Aims

The Government's 25-year Plan for the Environment sets out its comprehensive and long-term approach to protect and enhance natural landscapes and habitats. This includes working with nature, using natural capital to benefit communities. For example, woodlands and wetlands can help protect communities from flooding and erosion, whilst creating new habitats for wildlife. We believe that this can be most effectively achieved through integrated management of the natural environment at the wholescape. Partnership working at this scale will deliver innovation and novel insights from alternative points of view and will implement integrated policy and practice across different sectors and businesses, communities, institutions and government departments. We illustrate the issues here with selected, rather than comprehensive, water-related examples. Some tools are available to link natural capital stocks to functions, ecosystem services and beneficial outcomes - but are still in development. We also need new ways of assessing the effectiveness of a wholescape thinking by supporting monitoring and enhancing accountability.

The aim is not to manage every individual component of the wholescape - it is too large and complex. Instead, wholescape thinking aims to identify the key elements that cross boundaries and define achievable actions. These might include both direct management of the ecosystem, such as planting trees to slow the flow of water. It may include the management of people's actions that affect the ecosystem such as the promotion of more sympathetic farming practices to reduce soil erosion. Wholescape thinking must lead to simplification - not increased complexity. It aims to make the management of natural capital clearer to all.

4. Why do we need to do this?

The UK National Ecosystem Assessment[ii] and the Natural Capital Committee reports[iii] catalogue the severe loss of natural capital in the UK. We believe this is due partly to failure of land and water management practices because individual sectors are often too narrowly focused and miss the benefits that can be achieved from working across traditional institutional and geographical boundaries. There is increasing awareness that better partnership working can support local economies, improve livelihoods and enhance quality of life that are all consistent with meeting the objectives within the Sustainable Development Goals[iv] (particularly Goal 17 but also 11, 14 & 15).

Partnership working will also help fulfil government policy, such as the Natural Environment White paper[v], to engage communities/civil society with more effective management of the natural environment. It will assist in practical delivery of the ecosystem approach through government commitments - linking the work of organisations such as Local Enterprise Partnerships, leading businesses and utility companies, Local Nature Partnerships, Catchment, Coastal and Estuary Partnerships, Local Authorities, National Park Authorities and water companies. This was proposed in the 25-year plan to restore natural capital in England and for the management of natural resources in Wales (through the Wales Environment Act) and in Scotland.

Defra has created four pioneer projects to inform the development and implementation of the 25 Year Environment Plan. These projects explore four broad objectives: applying a natural capital approach; developing innovative funding opportunities; demonstrating integrated approaches to planning and delivery; and building our understanding of 'what works' in practice. They will provide invaluable lessons for implementing wholescape thinking.

5. What principles are guiding us?

There are many well-established principles that underpin integrated approaches such as Integrated Coastal Zone Management, Integrated River Basin Management and Integrated Water Resources Management, and more generally the Ecosystem Approach. These principles help to deliver sustainable development by encouraging collaboration and management at the appropriate scale, using best science and incorporating local knowledge into decision-making.

Box 3 Lockwood *et al.* (2010)[vi] have distilled from various sources eight principles designed to provide normative guidance for natural resource management governance.

These principles underpin the current guidance based on our shared recognition with their authors that natural resource management involves complex problems, diverse interests, and the need for coordination among public, private and voluntary sectors to achieve effective problem solving. **Legitimacy, Transparency, Accountability, Inclusiveness, Fairness, Integration Capability** and **Adaptability.**

Within this guidance note we identify some of the key but diverse mechanisms for achieving enhanced partnership working to improve the management of natural capital. Much of this thinking is not new, but considerable work is still required to formalise and strengthen the partnership approach. We introduce the concept of wholescape thinking. Different spatial units are adopted for addressing specific issues - such as catchments for freshwater issues and air-sheds for air quality issues – but we believe wider wholescape approach is required to integrate the land, its freshwater, the coast and open seas. The 25-year plan will consult on a new independent body to hold the government to account and wholescape thinking would be a key concept for this new body to engage with. Targeted metrics will be needed to assess the effectiveness of management from a wholescape perspective and to measure accountability.

Box 4. Characteristics of partnerships to achieve wholescape management

- Adopting the natural capital approach to transcend conventional sectoral/geographical boundaries for related management. New 'wholescape' thinking can encourage integrated and equitable consideration of different perspectives.
- Meeting legal obligations and supporting government policy objectives including the Ecosystem Approach, Catchment Based Approach (Water Framework Directive), marine planning, conservation and integrated coastal management (Marine Act, Maritime Spatial Planning Directive & Marine Strategy Framework Directive).
- Seeking holistic solutions with common objectives that do not harm other sectors, addressing shared challenges, replacing silo-thinking, identifying system failures and supporting multiple outcomes.
- Taking a joined-up approach to funding amongst all vested interests, to increase efficiencies and cost-effectiveness. Using partnerships to overcome institutional and funding boundary constraints.
- Using partnership working to effect sharing of scientific and local knowledge, encouraging sharing of learning and resources to fill gaps in responsibility, *e.g.* Local Nature Partnerships.
- Using natural capital as a common currency to communicate between different geographical, sectoral and institutional boundaries. The natural capital approach (an integral part of the UK government's 25-year plan to improve the environment) provides a bridge between economic, social and environmental perspectives that supports partnership working.
- Ensuring that partnerships are "genuine" (underpinned by the governance principles in Box 3) and so are able to put principles into practice.

6. Putting wholescape thinking into practice

Key environmental issues in the UK include flood risk, detrimental impacts of farming and water resource security (particularly in the south-east). Many of these issues linked such as floods eroding farmland soils and carrying this downstream as sediment to estuaries and the coastal environment. Water evacuated to the sea by flood relief schemes means it is lost from the land where it is needed in times of drought. Abstraction of water upstream can mean lack of flows in the estuary to stimulate fish migration to their riverine spawning areas. Solutions to such issues require

linkages across the landscape from uplands to the sea and partnerships of farmers, fishers, engineers, planners, ecologists, water managers, environmental protection agencies which may be best coordinated by independent non-governmental organisations. Catchment Sensitive Farming provide one approach, where Defra is working in partnership with the Environment Agency and Natural England, farmers and a range of other partners to improve water through free training, advice and support for grant applications.

Partnerships bring together otherwise diverse interest groups who agree to work together to solve problems that are of common concern and that cannot readily be resolved individually without incurring conflict. They provide new ways of delivering effective actions providing additional value beyond the sum of the individual parts. Partnerships can work at different scales from local to national and impact may be increased by linking across these different levels of operation. Partnership working is particularly useful for sustainability and wicked problems as no one actor has all the information to solve them.

Here we give examples of the need for stronger partnership working as well as recent innovations that have great potential for expansion or application elsewhere.

Flooding and fishing

Natural capital is being increasingly recognised as a core part of nature-based flood management. Many flood management schemes are aimed at evacuating flood water quickly downstream, ultimately to the sea. It is normally assumed that there are no negative aspects to depositing flood water in the sea. However, some West Country fishermen have linked declines in near-shore catches of cod to enhanced winter freshwater flood runoff possibly reducing sea-water salinity and altering water temperature. Additionally, this higher runoff has been observed to transport greater quantities of sediment and debris from the land to marine habitats. Whilst temporary salinity decline would occur under natural flooding regimes, anthropogenic flood management has increased this effect, possibly exacerbating negative impacts on cod fishing. This provides an example of the need to better understand the links between natural capital and currently separate management activities, such as flood management and estuarine and coastal fisheries management. New and stronger partnership working would enable the different sectors to come together to explore the problem and to work together to identify practical solutions. Key lessons can be learnt from land managers that implement the natural flood management schemes and have costs and benefits for other land-based functions including agriculture, built infrastructure and timber.

Upstream and downstream thinking

Changing farming and land management practices aims to reduce the movement of sediments, pesticides and animal waste into rivers. In south west England moorland restoration is helping to achieve these aims and improve the condition of rivers, such as the Dart and Exe. This should result in reduced downstream water treatment costs, deferring of large capital investments and lowering of household water bills. This ‘Upstream Thinking’ approach has been facilitated through a partnership of South West Water, Exmoor National Park, Devon’s and Cornwall’s Wildlife Trusts and West Country Rivers Trust. The complementary ‘Downstream Thinking’ approach combines sustainable urban drainage that mimics natural processes to reduce sewer overflows which cause environmental contamination from untreated sewage. This project would not have been possible without the partnership working or the organisations facilitated by South West Water, Environment Agency and local councils. Similar sustainable catchment-based approaches have been used elsewhere such as in north-west England by United Utilities.

Transboundary partnerships

The national boundary between England and Wales splits the Rivers Wye and Severn catchments, thus separating management of natural capital. A partnership approach can access funding from England and Wales to address shared issues of transboundary management. We cannot dissolve

existing institutions overnight but we can move money across institutional boundaries. Working across boundaries through cooperation and partnerships promotes linkage between local authorities, regional agencies, business networks, community groups and all interests that exist in the different sectors. The Severn Rivers Trust has catchment co-ordinators working on projects across England and Wales to promote a catchment-scale approach to management and decision-making. The Severn Estuary Partnership has promoted communication and cooperation across the tidal Severn/Bristol Channel between England and Wales for over twenty years. There are other good examples of transboundary partnership working to be drawn upon from within and outside the UK.

Nutrient benefit or harm?

Application of fertilisers raises productivity on land, but they may become pollutants when nutrient-rich runoff enters water courses. Through a wholescape approach we recognise the landscape as a continuum and part of the biogeochemical cycle. Soil management and fertiliser application need to balance farm productivity and safeguarding the downstream environment. Stronger partnership working can save farmers and water users money. Wessex Water have been working with the farming community across the River Frome catchment in Dorset, to safeguard drinking water and at the same time help protect tidal habitat in Poole Harbour. The approach uses an innovative reverse auction to help fund farmers to use cover crops to reduce nutrient loss (www.entrade.co.uk), and ensure the nutrients are available when crops need them.

Livestock grazing and water runoff

Intensive grazing and burning of vegetation has been common practice in UK uplands. It can alter soil water conditions and generate increased runoff and soil erosion. In contrast, trees can help increase infiltration of water to the soils. Current EU policy and financial incentives, such as under the Common Agricultural Policy, favour upland sheep grazing that may have deleterious impacts downstream. Potential changes to agricultural incentives provide the opportunity to integrate land and water management through partnerships between land owners/managers, businesses, environment protection agencies and NGOs. Making water management a legitimate land management practice supported by appropriate incentives would facilitate this change.

Coastal and marine management

Marine Plans are being prepared by the Marine Management Organisation and Marine Protected Areas are managed by a range of formal and informal approaches. Stakeholder engagement for coastal and marine management is often supported by existing networks convened by Coastal/Estuary Partnerships with local coastal and estuary strategies and action plans. Attempts have been made to establish partnership initiatives at the wider scale such as the North Sea Forum, Irish Sea Forum and Celtic Seas Partnership. Working across political boundaries, they bring together government agencies from different countries with industry, science and third sector interests to discuss shared issues such as the location for offshore renewable energy installations, pipelines, shipping routes, fisheries management, conservation zones and tourism opportunities. There is sometime little direct incentive for collaboration at this challenging scale - despite the marine environment having very fluid (if any) boundaries. However, as at the local inshore scale, initial collaboration across marine regions is demonstrating the value of partnership working across sectors and cross-border tiers of decision-making. More recently, there have been a growing number of collaborations focussing on specific issues such as marine plastics pollution.

7. What are the constraints?

The following constraints have hindered progress in achieving more coherent and effective partnership working and sustaining successful partnerships. This is restricting strategic delivery of practical solutions to sustainable management of our natural capital:

- There has been limited joined-up thinking among government departments, due to the long history of sector-based approaches to governance, hence environmental, economic and social/health policies are frequently not aligned.
- Few people in government departments, agencies, private enterprise or community groups have experience in cross-thematic working, again due to the historical preponderance of sector-based working. Therefore much of the language used in policy and management is also currently very sectoral.
- Cross-disciplinary approaches are rarely taught in schools and universities – this is important if we want to bring this approach into mainstream thinking in the future.
- Ecosystem services/natural capital accounts or audits are still largely lacking in business and government, with the effect that natural capital is not appropriately valued alongside traditional metrics such as GDP.
- Recognition is weak that legislation, policy and management practices need to be implemented at appropriate scales, such as the river catchment, coastal system and marine region as whole systems.
- Coordinated plans that integrate coastal/estuarine and catchment systems are broadly lacking (this is important for the transitional waters aspect of implementing the Water Framework Directive and the Marine Strategy Framework Directive).
- Time and resources are required to establish partnership working and whilst this is likely to be offset by lower implementation costs associated with decision making in partnership, these initial costs can be a barrier to establishing new ways of working.
- Justification for the economic value of working in partnership is lacking. This has limited the provision of long-term sustainable finance for partnership initiatives. The benefits from building on established relationships and networks is not being fully realised.
- Partnership working isnot necessarily the sole remedy for all issues; partnerships can take a long time to establish and produce results. There are urgent issues that may necessitate a more immediate short-term response.

8. Actions needed

We propose 4 key actions to advance this agenda:

I. **Collate the disparate experiences of existing partnership working and partnership initaitives.** Undertake a wider review and documentation of current examples of where natural capital management has been enhanced through partnership working, including those arising from new 'pioneer' activities launched by Defra and taking account of the implications of Brexit. The review will need to include analysis of financial, social and environmental benefits of partnership working and partnership initiatives. The workshops outlined in action (II) are proposed to provide an outline of the anticipated activities and the required additional funding.

II. **Promote shared learning.** Conduct a series of interactive workshops on partnership working with a wide range of government departments, agencies, local authorities and NGOs. These workshops will do three things: (1) debate examples of where partnership working has enhanced natural capital management; (2) identify cases where new partnership working is needed to achieve better natural capital management; and: (3) define how organisations with different responsibilities and mandates can progress natural capital management through more effective partnership working. Outputs will support future work of participants and the knowledge exchange facility (action IV below).[2]

III. **Create a partnership innovation fund**, involving government, NGO and business sectors. This would act as a 'start-up' resource to stimulate the creation of innovative partnerships and bridge gaps to support the ongoing work of existing partnerships (between project work). This issue could be discussed in the follow-up workshop, arranged by the NCI.

[2] The NCI has agreed to arrange a follow-up workshop

IV. **Develop a knowledge exchange facility** to support improved partnership working and partnership initiatives, including examples of best practices, networking of networks, mentoring new networks and their champions. There are existing organisations that could take this on given sufficient funding, such as the Ecosystems Knowledge Network. http://ecosystemsknowledge.net/

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https://www.naturalcapitalinitiative.org.uk/portfolio-items/wholescapes_guidance/

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[i] Natural Capital Initiative 2015 *Valuing our life support systems 2014*. Summit Summary Report. NCI, London

[ii] UK NEA 2011 The UK National Ecosystem Assessment: Synthesis of the Key Findings UNEP- WCMC, Cambridge UK

[iii] Natural Capital Committee 2015 *The State of Natural Capital Protecting and Improving Natural Capital for Prosperity and Wellbeing* Third report to the Economic Affairs Committee

[iv] United Nations 2015 *Sustainable Development Goals 2015* Resolution A/RES/70/1 of 25 September 2015

[v] Department of Environment, Food and Rural Affairs 2011 *The Natural Choice: securing the value of nature*. www.official-documents.gov.uk

[vi] Lockwood, M., Davidson, J., Curtis, A., Stratford, E. & Griffith, R. 2010. *Governance Principles for Natural Resource Management.* Society and natural Resources 23:10, 986-1001.

Annex 1 Acknowledgements

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