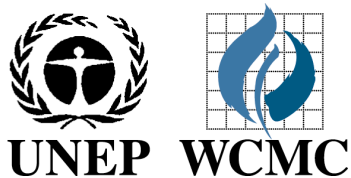


The State of the Art: Results of the UK NEA

Proteus annual meeting, Stavanger 15th June

Claire Brown



The Goal for this Presentation

To provide an update on how the latest economic thinking on ecosystem services can be incorporated into an ecosystem assessment.

UK National Ecosystem Assessment

Understanding nature's value to society

- Independent Assessment – launched 2 June 2011
- Funded by Defra, Scottish Government, Welsh Assembly, CCW, NIEA, NERC and ESRC
- Over 500 Scientists involved taking 2 years to complete
- Assessed 8 habitats and their services, HWB, scenarios and response options
- Governance: 2 co-chairs, Expert Panel, User Group, Client Group and an independent Secretariat
- Private sector involved through the User Group

Key Messages of the UK NEA

1. The natural world, its biodiversity and its constituent ecosystems are critically important to our well-being and economic prosperity, but are consistently undervalued in conventional economic analysis and decision-making.
2. Ecosystems and ecosystem services. And the ways people benefit from them, have changed markedly in the past 60 years, driven by changes in society.
3. The UK's ecosystems are currently delivering some services well, but others are still in long-term decline.

4. The UK population will continue to grow, and its demands and expectations continue to evolve. This 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.
5. Actions taken and decisions made now will have consequences far into the future for ecosystems, ecosystem services and human well-being.
6. A move to sustainable development will require an appropriate mixture of regulations, technology, financial investment and education, as well as changes in individual and societal behaviour and adoption of a more integrated, rather than conventional sectoral, approach to ecosystem management.

Advancing the thinking

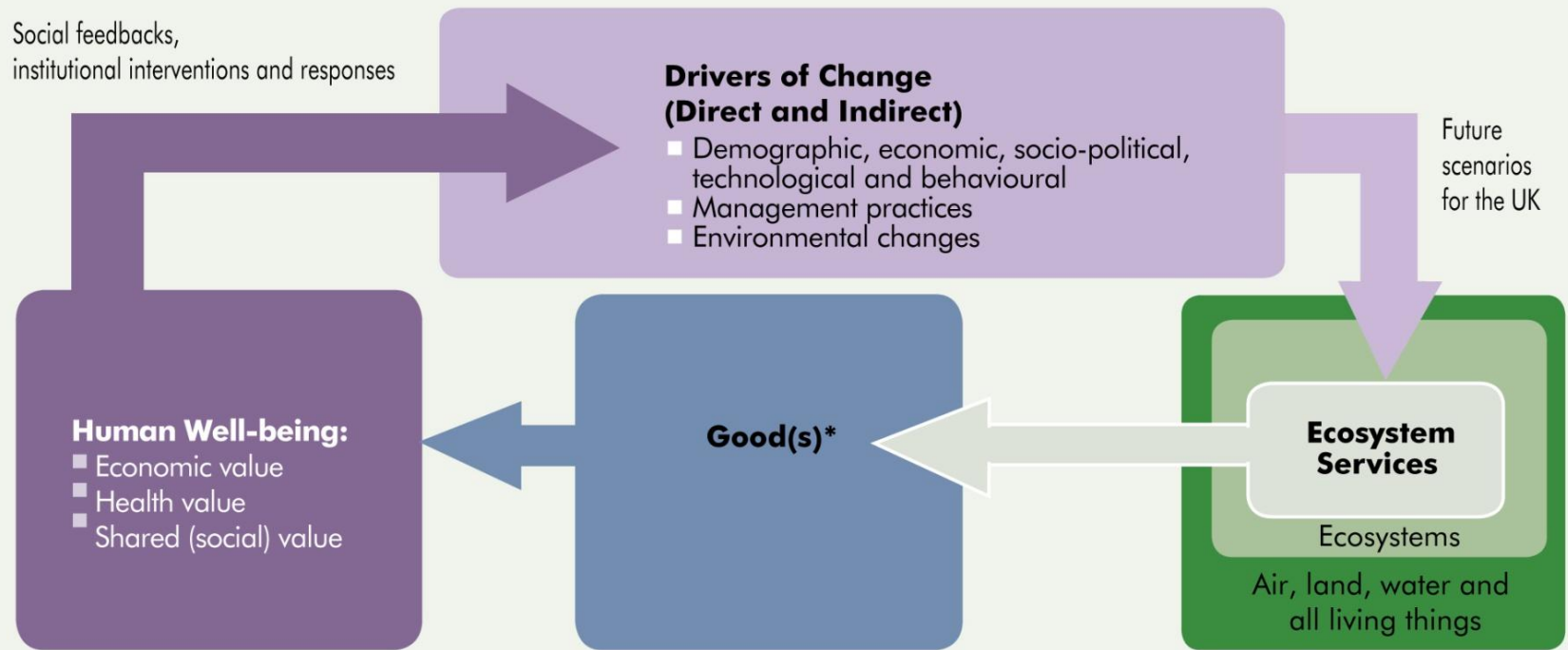


Figure 9 Conceptual Framework for the UK NEA showing the links between ecosystems, ecosystem services, good(s), valuation, human well-being, change processes and scenarios. *Note that the term good(s) includes all use and non-use, material and non-material benefits from ecosystems that have value for people.

Conceptual Framework for Valuing Ecosystem Services

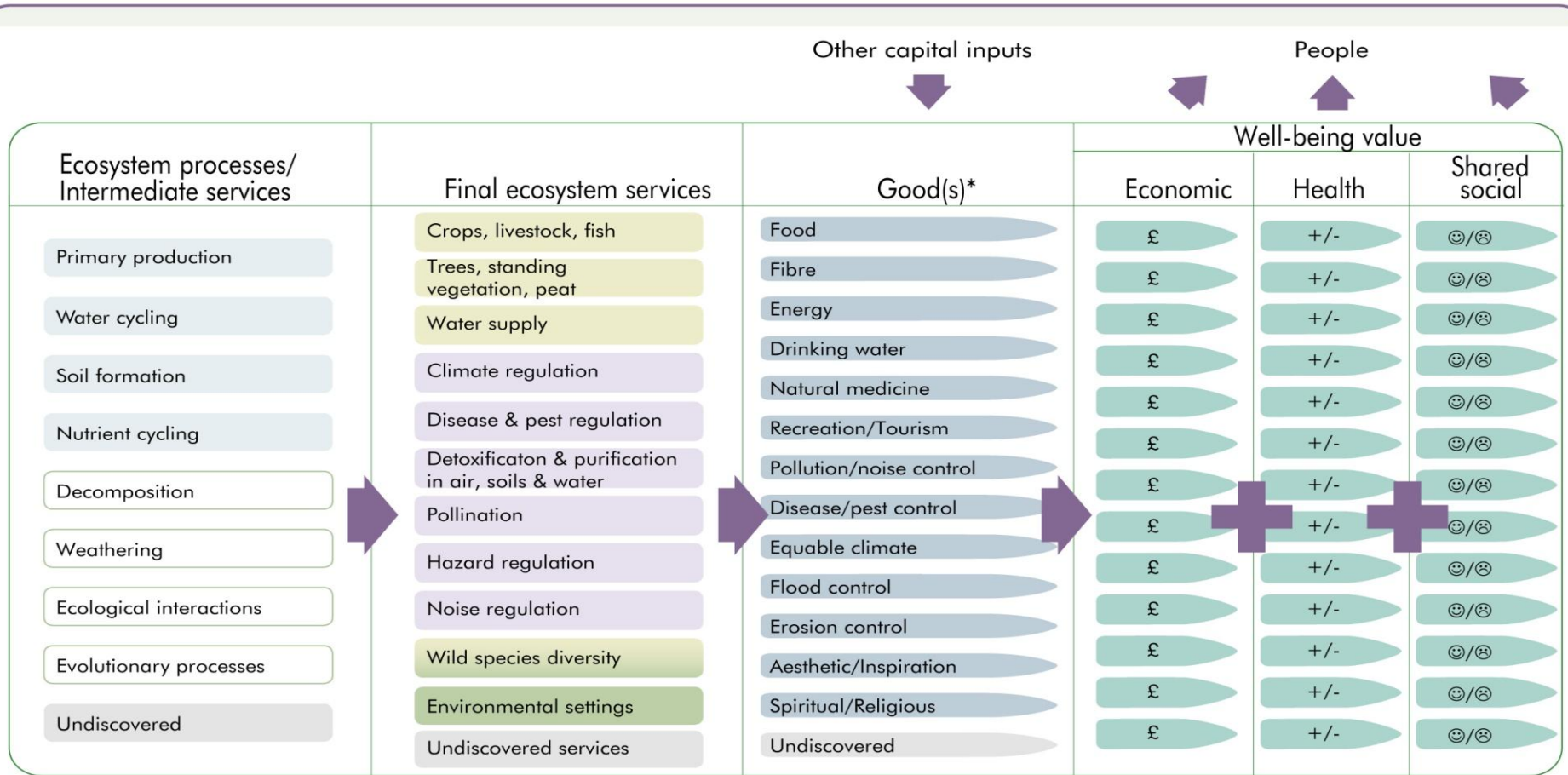
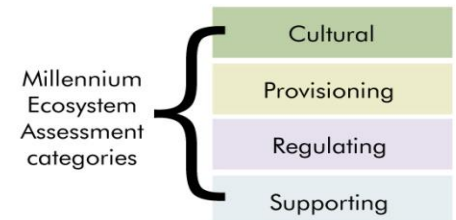


Figure 10 The full set of ecosystem processes, services, goods/benefits and values used in the UK NEA. Note that some ecosystem services can be both intermediate and final services. For simplicity, in this figure, services are shown only in the most final position that they occupy. Services such as pollination and climate regulation that also play important roles further back in the chain are not represented here. Cells with no colour are ecosystem processes/services that were not in the Millennium Ecosystem Assessment classification. *Note that the term good(s) includes all use and non-use, material and non-material outputs from ecosystems that have value for people. Source: adapted from Fisher *et al.* (2008).



What was mapped?

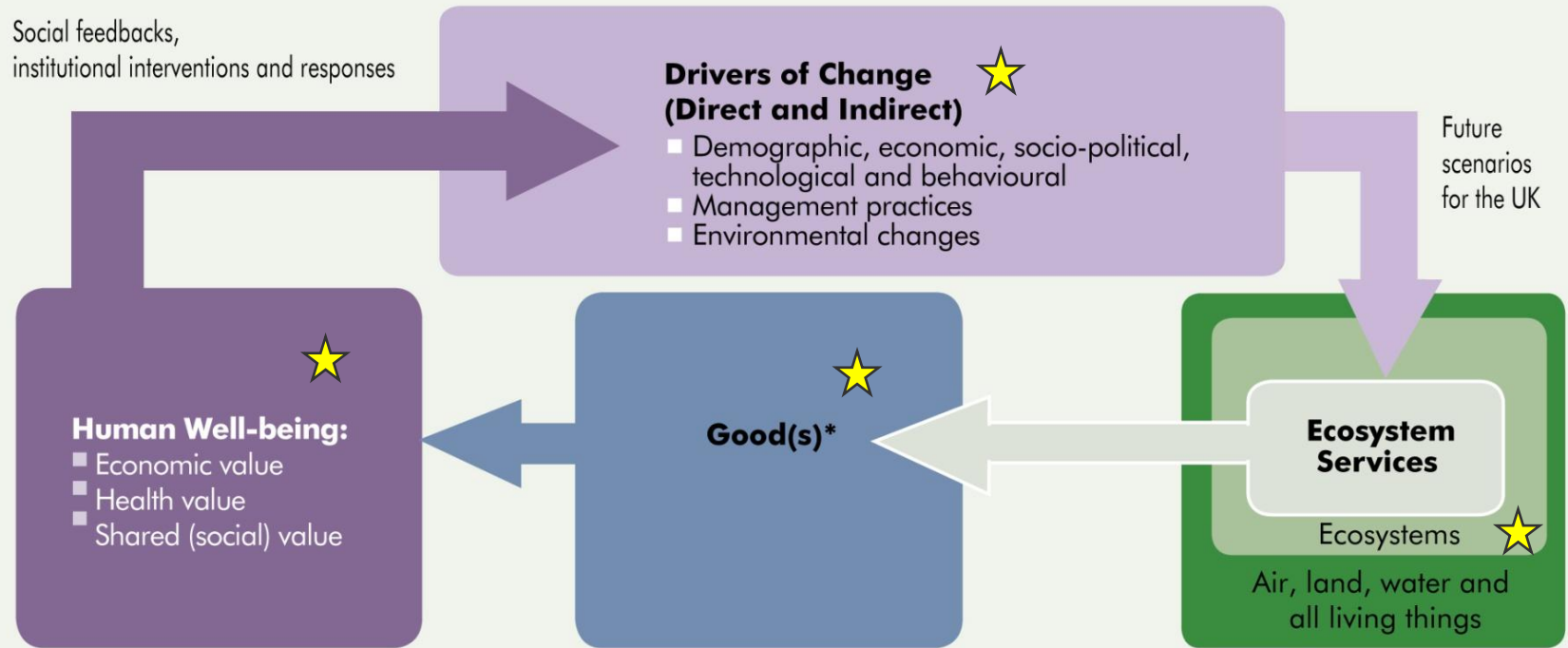


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Box 3. The UK's Broad Habitats

Although lacking in extremes – there are no high mountains, no true deserts and no major rivers – the UK is in fact remarkably variable biophysically, ecologically and socially, with complex underlying geology, a wide climatic range, (from very wet to semi-arid), and large variations in the distribution of the human population, from extensive areas of near-wilderness (in Scotland) to one of the world's largest metropolitan areas (Greater London). In the UK NEA this diversity has been captured in eight Broad Habitat types (Figure 12):

Use of mapping in the UK NEA - habitats

Dominant UK NEA Broad Habitats (>50%) by area per 1km cell

- Mountains, Moorlands & Heaths
- Semi-natural Grasslands
- Enclosed Farmland
- Woodlands
- Freshwaters - Openwaters, Wetlands and Floodplains
- Urban
- Coastal Margins
- Marine

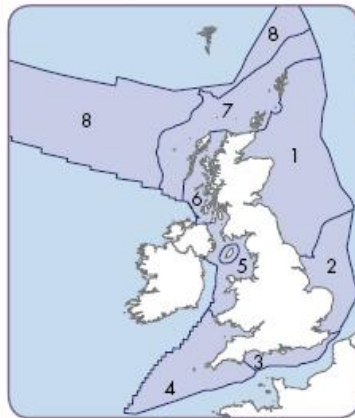
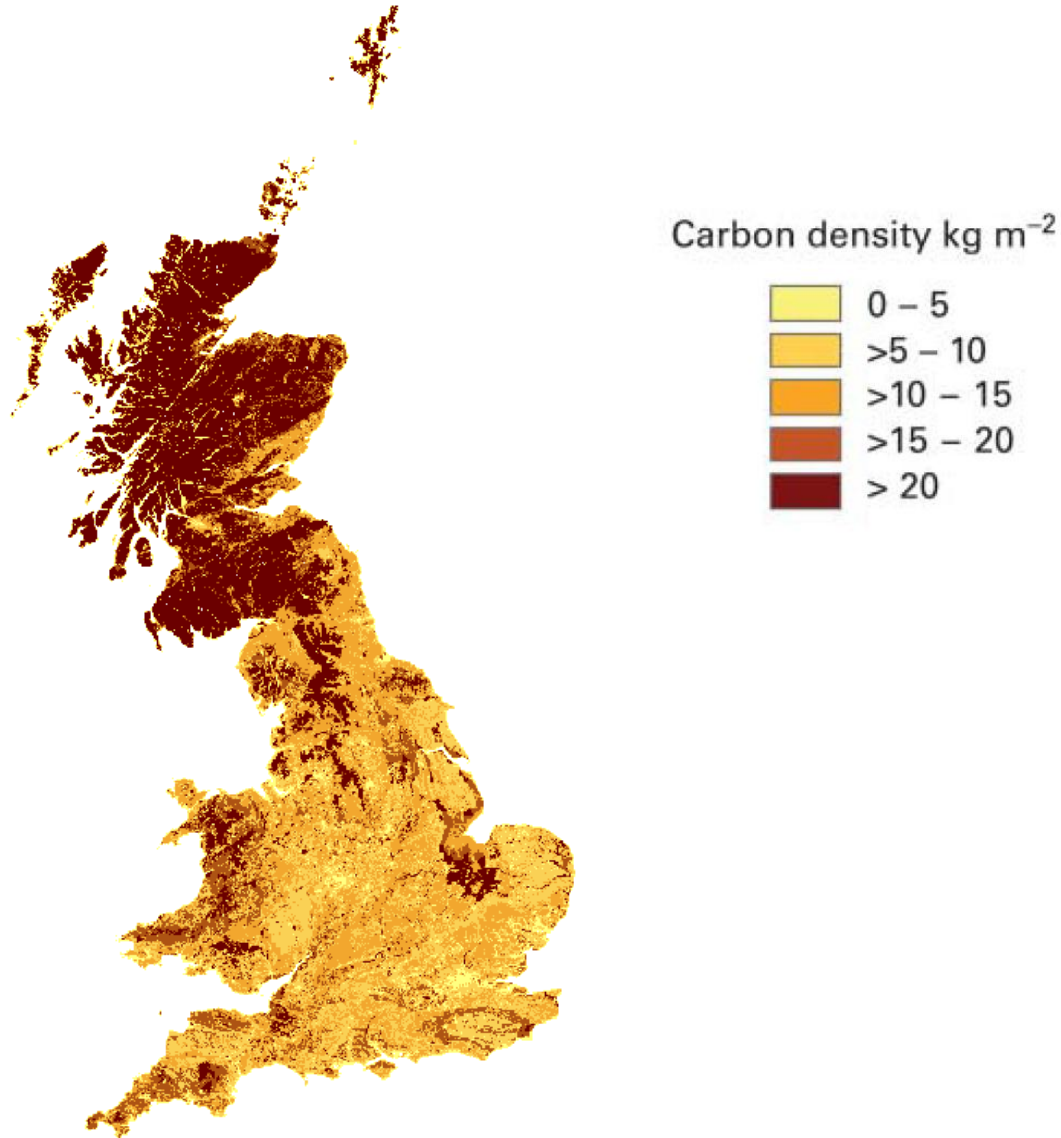


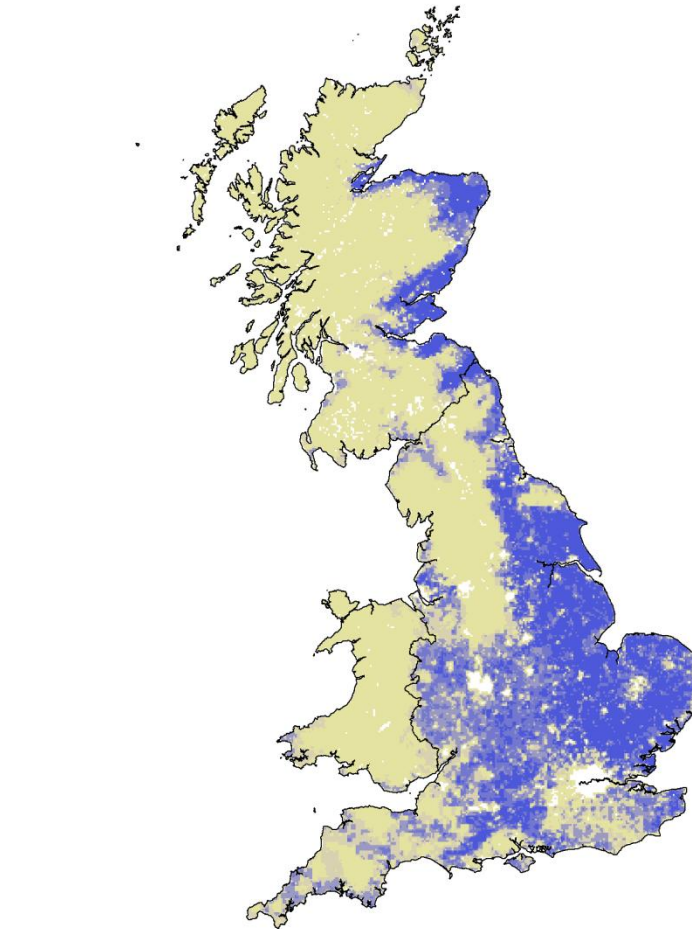
Figure 12 Distribution (%) of the UK NEA Broad Habitat types by area at 1x1 km resolution. Inset: Charting Progress 2, UK Regional Sea boundaries: 1) Northern North Sea; 2) Southern North Sea; 3) Eastern Channel; 4) Western Channel and Celtic Sea; 5) Irish Sea; 6) Minches and Western Scotland; 7) Scottish Continental Shelf; 8) Atlantic: North-West Approaches, Rockall Trough and Faeroe/Shetland Channel. Source: Broad Habitat distribution – data from Land Cover Map 2000 (Fuller et al. 2002); Regional seas map based on URMMS (2010). Coastline: World Vector Shoreline@National – Geospatial Intelligence Agency. Source: NOASS, NGDC.

Mapping Stock - Carbon

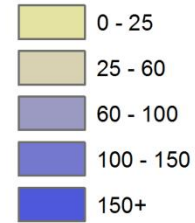


Mapping goods

Actual



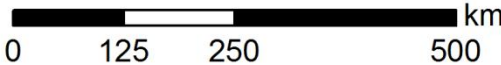
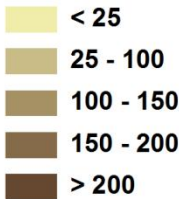
Cereals (ha/grid)



0 125 250 500 km

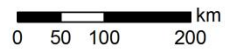
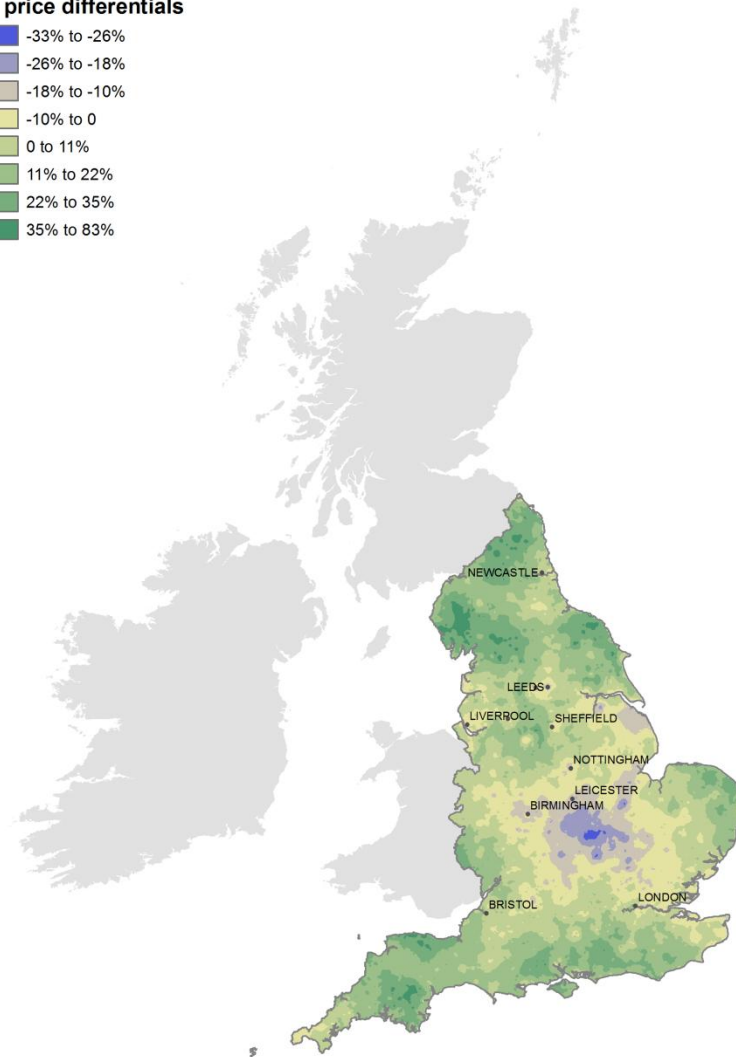
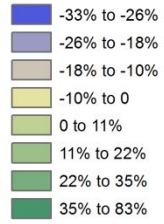


Beef (head)

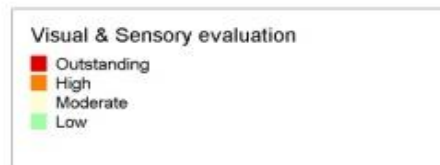
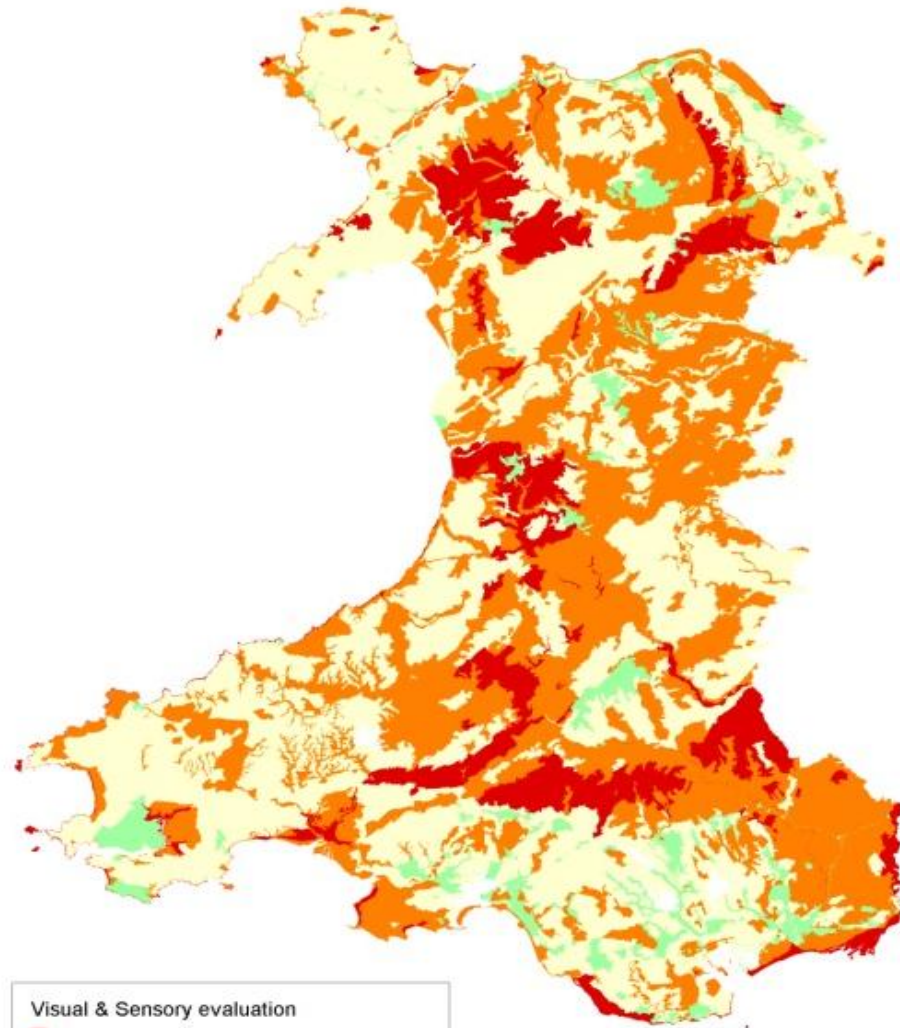


Environmental Values

% price differentials



Landscape values –visual and sensory perception



How might ecosystems and their plausible services in the change in the future under plausible scenarios?

Green and Pleasant Land

A preservationist attitude arises because the UK can afford to look after its own backyard without diminishing the ever-increasing standards of living.

Nature@Work

The belief that the promotion of ecosystem services through the creation of multifunctional landscapes is essential for maintaining the quality of life in the UK is widely accepted.

Local Stewardship

This is a future where society is more concerned with the immediate surroundings and strives to maintain a sustainable focus on life within that area.

Go with the Flow

This scenario is essentially a projection based on current trends and results in a future UK that is roughly based on today's ideals and targets.

National Security

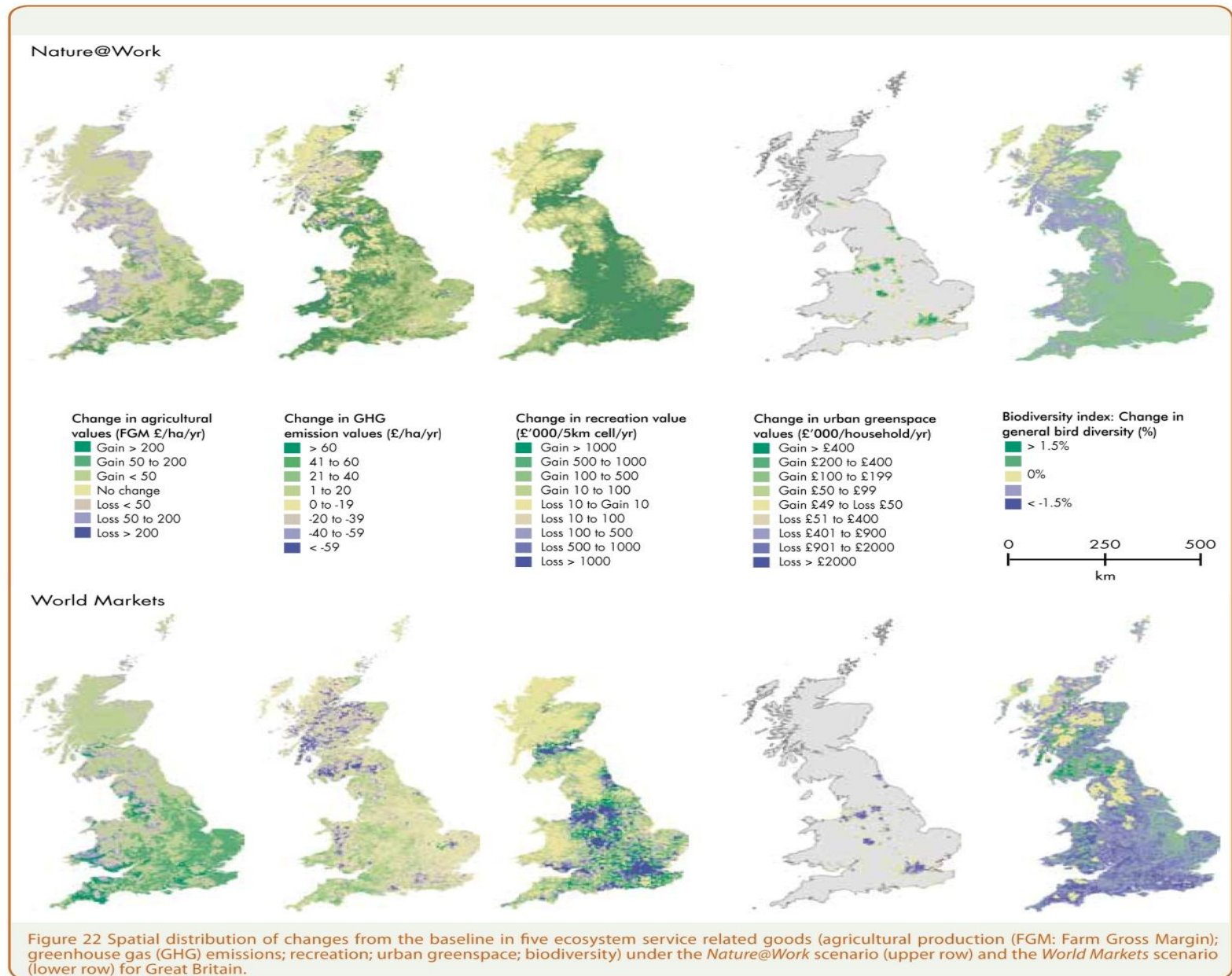
Under this scenario climate change results in increases in global energy prices forcing many countries to attempt greater self-sufficiency (and efficiency) in many of their core industries.

World Markets

High economic growth with a greater focus on removing barriers to trade is the fundamental characteristic of this scenario.

Figure 8 An overview of the six scenarios developed for the UK NEA. All share the common characteristics of a decline in global resource availability and an ageing UK population. They also include some level of technological innovation, although there are differences in the sectors involved..

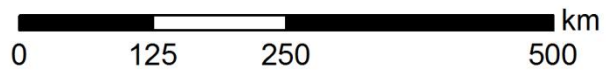
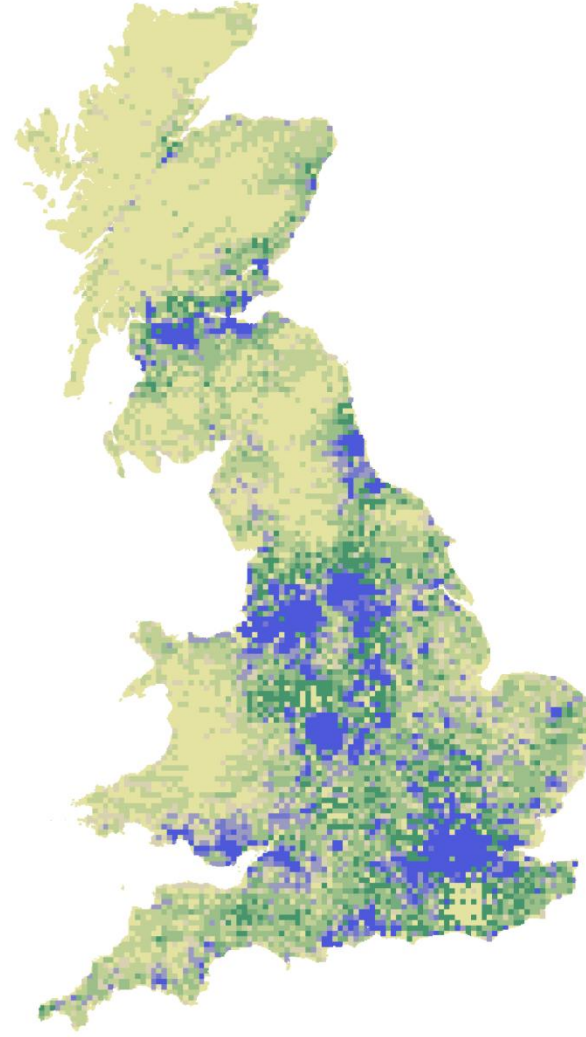
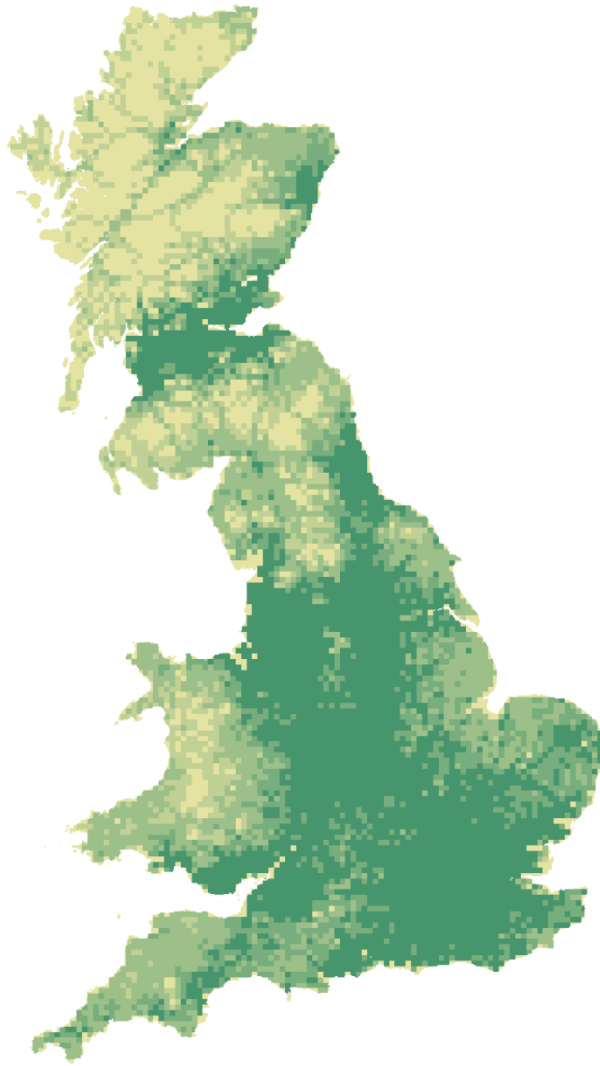
Spatial Economic Implications of Two Storylines: Nature @ Work and World Markets



NW (2060)

WM (2060)

Total Change in Value of Predicted Annual Visits per 5km cell (£ '000)



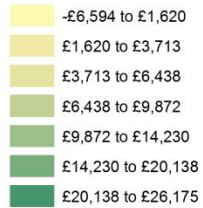
Value of Green Space



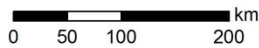
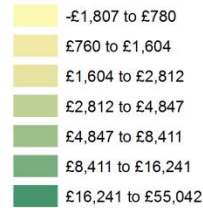
Local Stewardship



Green and Pleasant Land



Nature at Work



What does this mean for business?

- The findings of the UK NEA are already influencing policy (e.g. NEWP).
- Findings can be used as a space for different stakeholders to have discussions.
- Using such an analysis has the potential to assist in a companies management of sites, including identification of trade-offs.
- Relevance of the UK NRA to other countries