NEA WP4: Cultural ecosystem services and human well being

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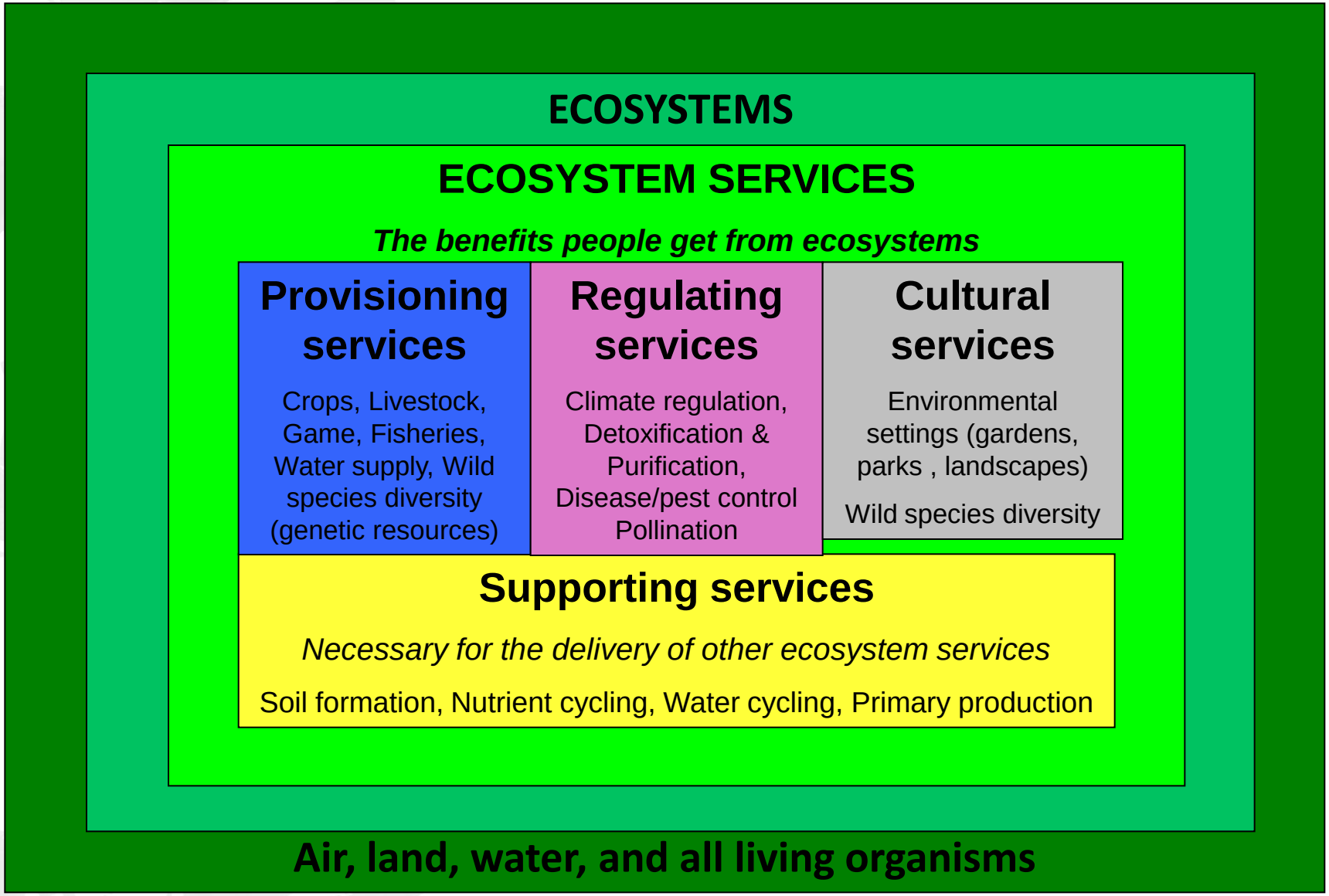
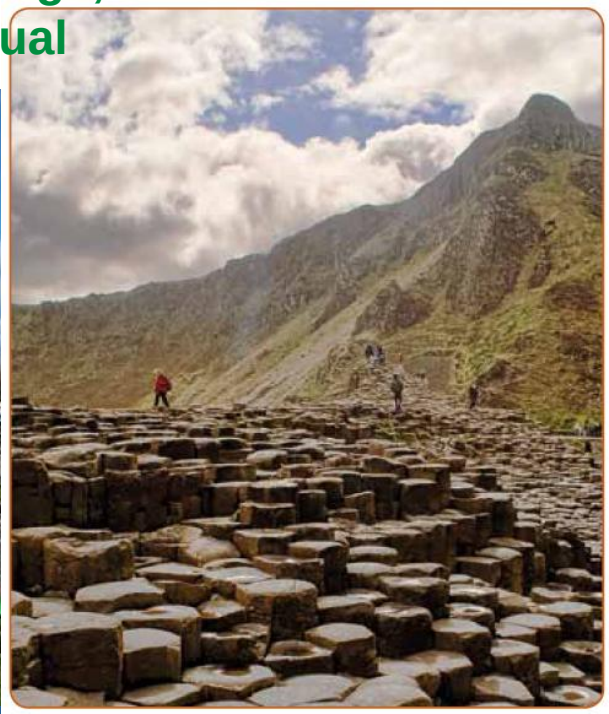

ECOSYSTEMS
ECOSYSTEM SERVICES
The benefits people get from ecosystems
Provisioning services
Crops, Livestock, Game, Fisheries, Water supply, Wild species diversity (genetic resources)
Regulating services
Climate regulation, Detoxification & Purification, Disease/pest control Pollination
Cultural services
Environmental settings (gardens, parks , landscapes)
Wild species diversity
Supporting services
Necessary for the delivery of other ecosystem services
Soil formation, Nutrient cycling, Water cycling, Primary production
Air, land, water, and all living organisms

Environmental settings contribute to a series of cultural goods enhancing well being

The cultural goods – health, tourism and recreation, heritage, education and ecological knowledge, religious and spiritual



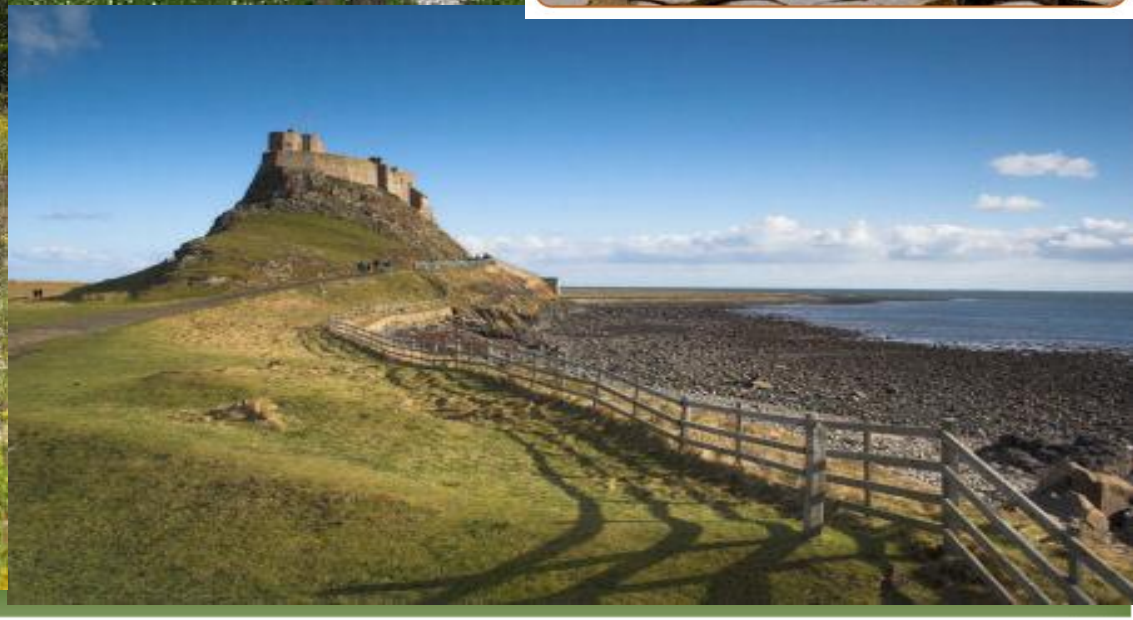


Table 22.13 Implicit prices by region (£, capitalised values).† Statistically significant results are indicated by: ***p<0.01, **p<0.05, *p<0.10. Source: Mourato *et al.* (2010).

	All England
Ward share of‡	
Domestic gardens	1,970***
Greenspace	2,020***
Water	1,886***
Distance to¶	
Coastline	-275
Rivers	-1,751*
National Parks	-461***
Nature reserves	-143
National Trust properties	-1,347***

Conceptual approach

- View characterisation and assessment of Cultural services as essentially 'place-based'.... Because context matters

Experience of Countryside Quality Counts :

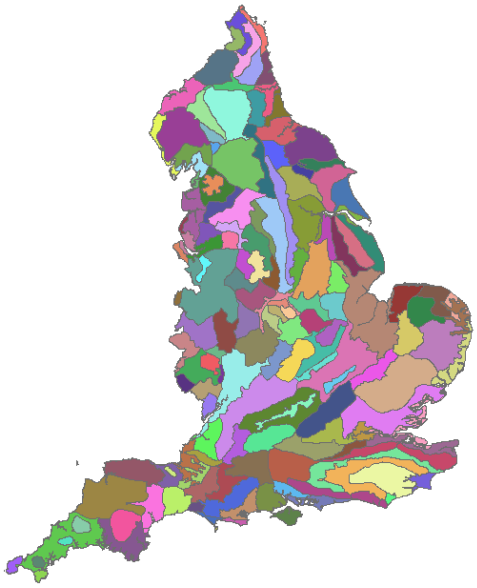
- Where is change occurring?
- Does it matter?

NCA Spatial Framework

CQC Methodology

Character area descriptions

Character area profiles
~which set out threats and opportunities



Where is change occurring?

Analysis of profiles against key data set sets

Judgements about the magnitude and impacts of change on character

Does the change matter?

6 phases of work package activity

Phase 1 - Enhancing the evidence base

Measuring the cultural significance of different environmental settings

- Quantitative on-line survey of individuals - Sample size 1,000-10,000 depending on resources to enable social and spatial disaggregation of findings
- Use, preferences, benefits and significance of different environmental settings
- Assess relationships between different settings and different benefits.

Phase 2 – Classification of environmental settings

- Use new and existing evidence
- Produce revised typology/classification of settings and their corresponding cultural benefits
- Present empirical and conceptual justification for typology/classification that considers the underlying cultural, economic and bio-physical processes.

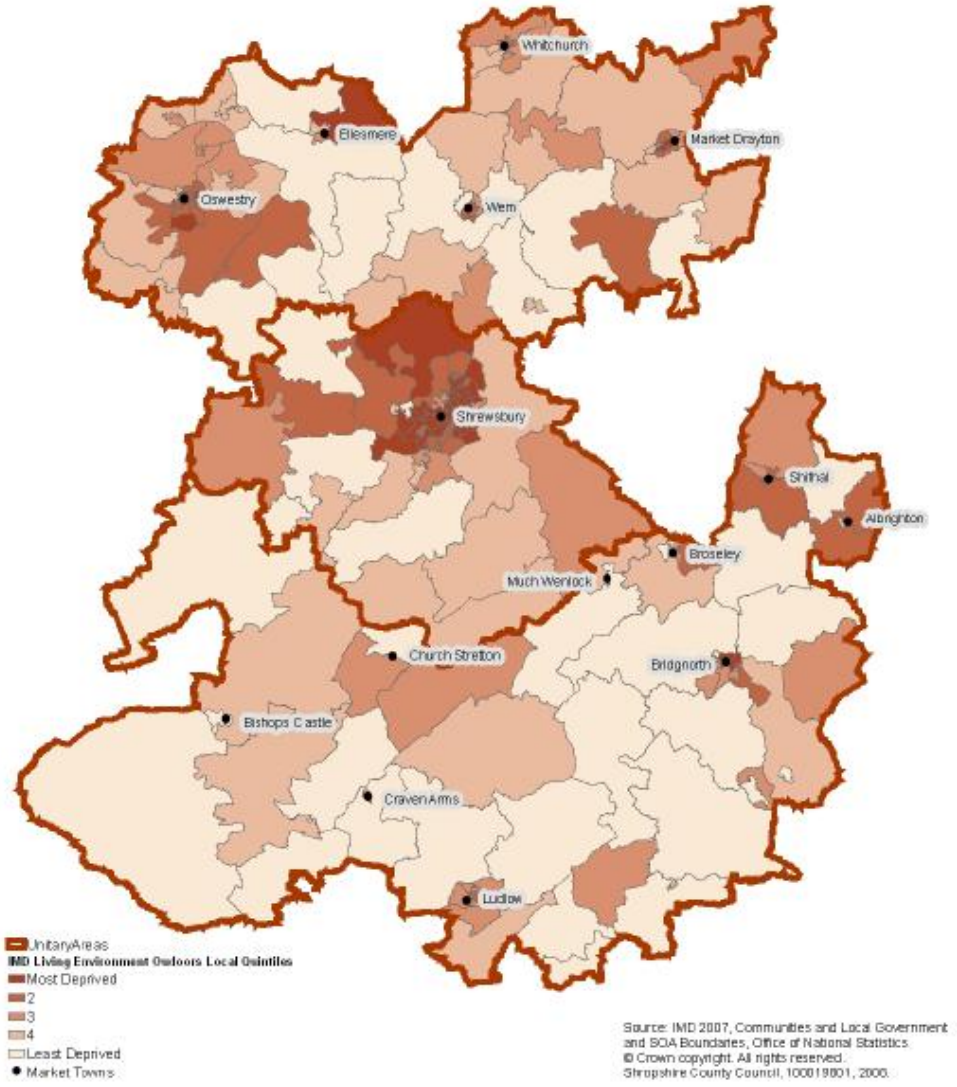
Phase 3 Data assessment and application for environmental settings

- GIS based approach to assess existing data, identify and calculate potential indicators for different settings.
- Opportunities to synthesise data with other indicator based frameworks to explore equity issues and links to biodiversity indicators
- Lower Layer Super Output areas, Local Authority districts, Landscape scale

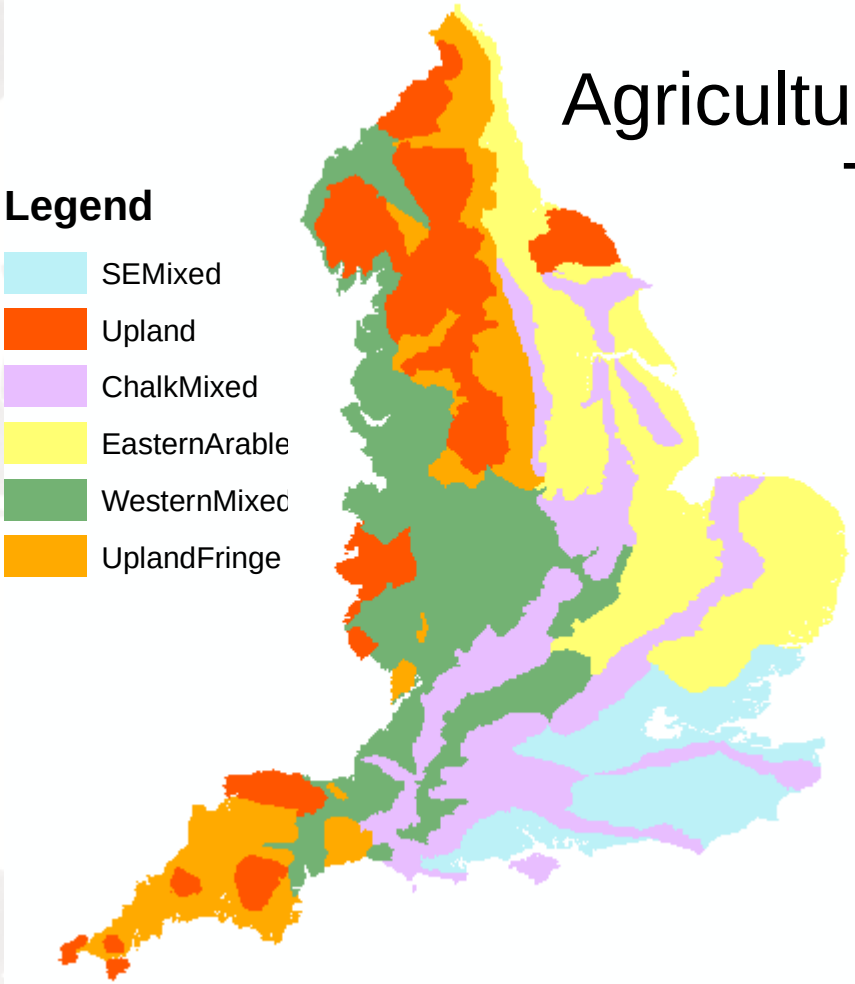
LIVING ENVIRONMENT DEPRIVATION IN SHROPSHIRE – OUTDOORS SUB DOMAIN

IMD07/15

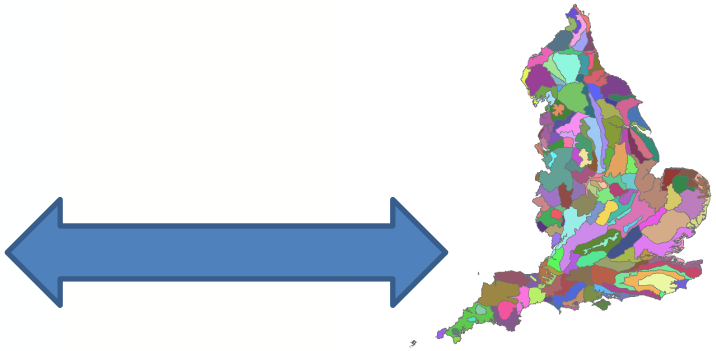
SHROPSHIRE RANK



Spatial scales – Landscape scale



Agricultural Landscape Types



National Character Areas + Wales...

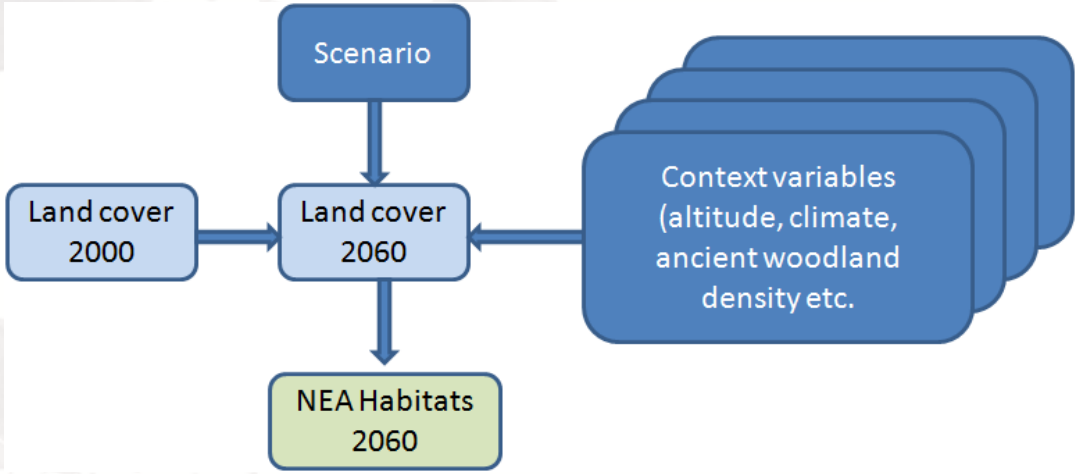
Examples of evidence base for work at landscape scale

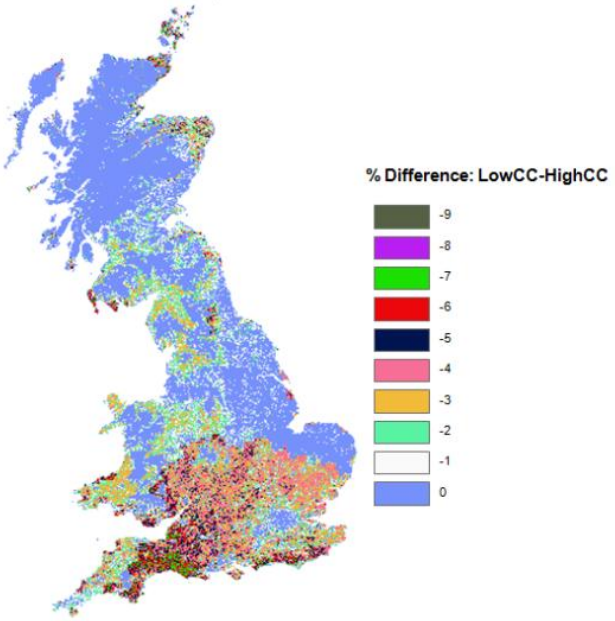
- Data on land cover LCM2007 (plus broad scale change since 1978...)
- Agricultural statistics, plus agri-environmental payments
- Woodland inventory data plus WGS and Felling licences
- Key assets (designated sites etc.)
- Population and socio-economic characteristics

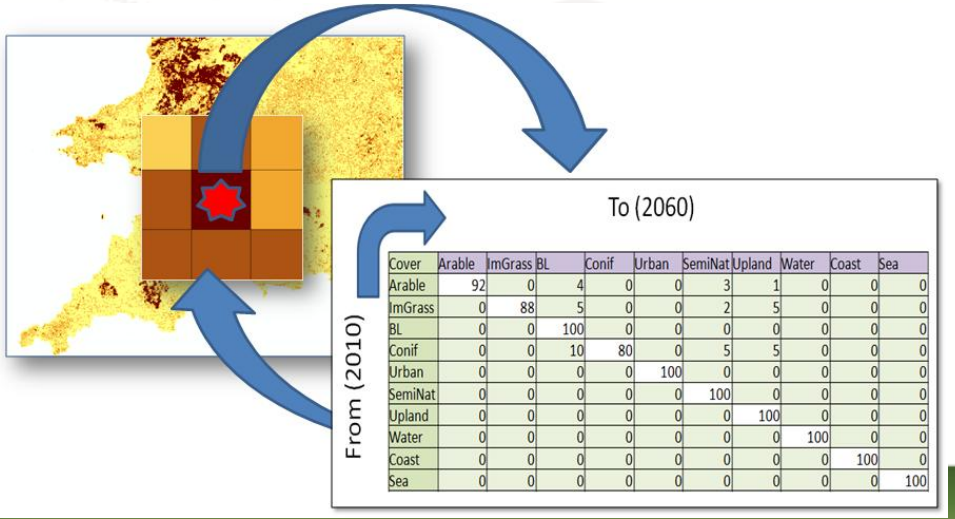
Phase 4 Participatory testing of typology and indicators

- Qualitative research with 5 case studies and advisory board
- Documentary analysis of Local Nature Partnerships priorities and visions
- Pre and post production of potential indicators
- Qualitative assessment of how stakeholders view and address cultural services and environmental settings in current ecosystem assessments
- Test settings and indicators with stakeholders and adjust typology/classification/indicators where necessary

Phase 5 Modelling - Link indicators to Land cover projections for scenarios using Bayesian Networks







To (2060)

From (2010)	Arable	ImGrass	BL	Conif	Urban	SemiNat	Upland	Water	Coast	Sea
Arable	92	0	4	0	0	3	1	0	0	0
ImGrass	0	88	5	0	0	2	5	0	0	0
BL	0	0	100	0	0	0	0	0	0	0
Conif	0	0	10	80	0	5	5	0	0	0
Urban	0	0	0	0	100	0	0	0	0	0
SemiNat	0	0	0	0	0	100	0	0	0	0
Upland	0	0	0	0	0	0	100	0	0	0
Water	0	0	0	0	0	0	0	100	0	0
Coast	0	0	0	0	0	0	0	0	100	0
Sea	0	0	0	0	0	0	0	0	0	100

Example output for projections of arable areas under the *World Markets* scenario for high and low climate change versions of the storyline. Map shows % difference in arable area between them for 2060; the differences between scenario outcomes are greatest in south where climate impacts are projected to be greatest.

Phase 6 - Define research and data agenda for cultural services

- Produce a typology/classification of supported by stakeholders
- Identify research and data requirements to produce robust indicators of environmental settings and cultural services
- Indicators that will be of value to a range of decision-makers at different spatial scales.
- Land and environmental management, conservation and planning

Project Team and Advisory Board

- Andrew Church, Neil Ravenscroft, Lee Stapleton – University of Brighton
- Alister Scott - Birmingham City University
- Robert Fish, Katherine Leyshon, Cheryl Willis, Mike Winter - University of Exeter
- Susana Mourato - London School of Economics
- Roy Haines-Young, Marion Potschin - University of Nottingham

Advisory Board

- Steve Daniels - University of Nottingham, Kai Chan - University of British Columbia
- Environment Agency, Natural England, Forestry Commission, GreenSpace UK

	Question	Rationale
1	What are the ecosystem services associated with this place that matter to peoples' well-being?	*H… …boundaries to the a…*
2	How are these services generated? Do they arise locally or are they generated outside the place or area being considered?	*Ide… …e issues in r… …lore the links be… …es.*
3	How important is each of these services, to which individuals or groups, and for what reasons? Do people outside the area also depend on these services?	*Helps t… …tions about th… …erstanding of t… …e and other p…*
4	How can the importance of these services be prioritised or valued?	*Op… …uld be assessed and compared (e.g. using individual vs community values; monetary vs non-monetary).*
5	Do we expect to have enough of each of these services either here or elsewhere in the future?	*Highlight the issues surrounding the notion of living with environmental limits and questions about sustainability of natural capital.*
6	What, if anything, could replace or substitute for each of the benefits obtained from these services, either here or elsewhere?	*Links to question 4, and further explores the nature of criticality, compensation and substitutability of benefits; provides a riches insight into the relationships between different places.*
7	What kinds of management or policy actions are needed to protect or enhance these services and in particular how might actions directed towards one service impact or enhance another?	*Hel… …anagement or p… …r groups and the i… …nflicts and how the…*

Establishing values

Some notion of causality

Establishing values

Responses

NEA Amenity value of environmental settings

Mourato *et al.* 2011 – Amenity value

- Hedonic pricing study of over 1 million housing transactions between 1996 and 2008

- Assess the effect of environmental settings on amenity value

- For census wards in England a 1 percentage point increase in the land use share made up of the environmental setting of greenspace added 1.04% to house prices (£2,020 at 2008 prices) compared to national average house prices.

- Comparable figure for domestic gardens was 1.01% (£1,970 at 2008 prices) and for water 0.97% (£1,886 at 2008 prices).

NEA Valuing health goods linked to environmental settings

Mourato *et al.* 2011 – **New primary data**

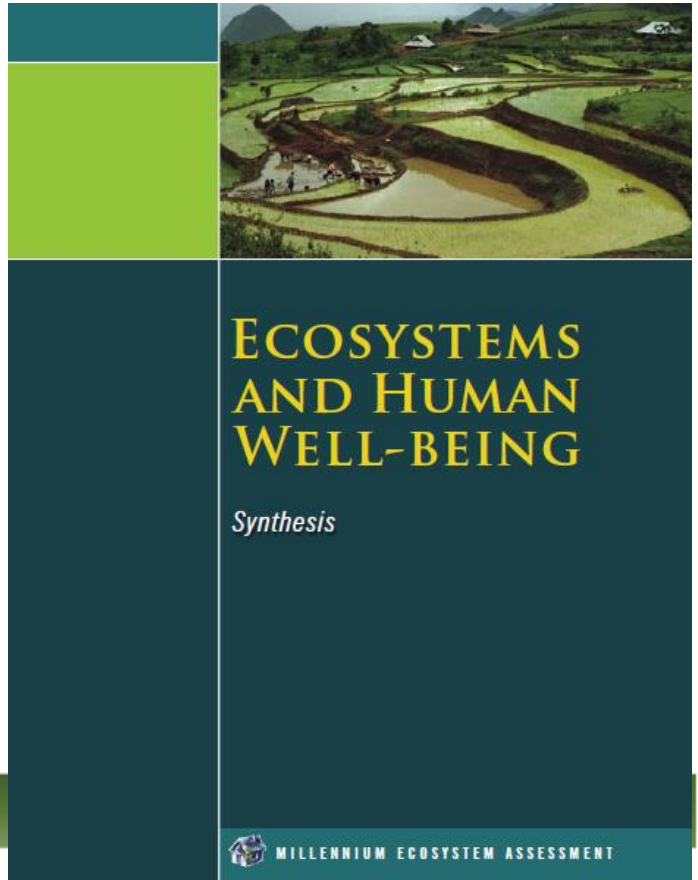
- Questionnaire survey on interactions between environmental settings and health.
- A geographically referenced quota survey of 1,851 respondents OLS regression
- **Statistically significant relations** between health measures of physical functioning/emotional well being and the use of the environmental settings of **domestic gardens and local green spaces**.
- Respondents who at least once a month visit non-countryside green spaces, such as urban parks, report significantly better health on both measures compared to those who do not. As do respondents who at least once a week spend time in their garden

NEA Defining ‘so-called’ cultural services – an on-going debate

- **Millennium Ecosystem Assessment**

  Cultural Services defined as ‘Non-material benefits derived from ecosystems’ - Different countries and systems of knowledge

  - Cultural identity
  - Heritage values
  - Spiritual services
  - Inspiration
  - Aesthetic appreciation
  - Recreation and tourism



Human-Scale Development matrix
(Max-Neef 1992).

►Existence needs ▼Value needs	***Being***	***Having***	***Doing***	***Interacting***
SUBSISTENCE				
PROTECTION				
AFFECTION				
UNDERSTANDING				
PARTICIPATION				
LEISURE *				
CREATIVITY				
IDENTITY				
FREEDOM				