

Briefing paper for TABLES project meeting

11th October 2012, Birmingham

# Primary Purpose of the Research

**To embed the ecosystem approach and thinking into a framework with associated tools to improve policy and decision making.**

The UK National Ecosystem Assessment Work Package 9 (WP9) is about **developing a framework** to achieve this purpose.

NB. In this research we definea tool as simply a ‘mechanism to help achieve a desired goal or end’.

Below, we have detailed the planned stages of WP9. Thursday’s workshop represents Stage Four of WP9 and will use **your collective experience and expertise**, informed by intelligence emerging from the tools reviews (attached list of the tools is in Appendix 1: Full reviews in Appendix 3), to **prioritize key tools for development into the framework**.

The selection of tools for inclusion in the framework should be based on their capacity and potential to embed the ecosystem approach or ecosystem services effectively, whilst also maximizing impact on policy and decision making.

# Key Stages of WP9

1. Creation of a research team COMPLETED although with ongoing additions.
2. Identification of a series of case studies that exhibit innovative thinking and experience in tool development and/or use of the Ecosystem Approach COMPLETED
3. Construction of a template for tool reviews COMPLETED
   1. Thoughtpieces on tools from each member of the research team
   2. Development of a typology of tools
   3. Scoping interviews with case studies to identify key criteria for tool development
4. **Workshop with case study sites and research team to prioritize tools for development 11th October – WE ARE HERE**
5. Preparation of tools framework
   1. Using case study events with different publics to build an inclusive conceptual framework
   2. Using dedicated workshop sessions (e.g. LWEC Annual event 12-13 November ; BCU Built Environment workshop on using Ecosystem Services in planning policy and practice (Late November).
   3. Present draft framework at the TABLES project and stakeholder meeting on 17 December 2012
6. Draft end of research report for WP9 with full work programme for WP10 (the development and testing of individual tools in selected case study areas, where appropriate)

# The Tool Typology

Our starting proposition is that we should choose at least one tool within each category that collectively forms our tool typology developed in Stage 3b (above). These were:

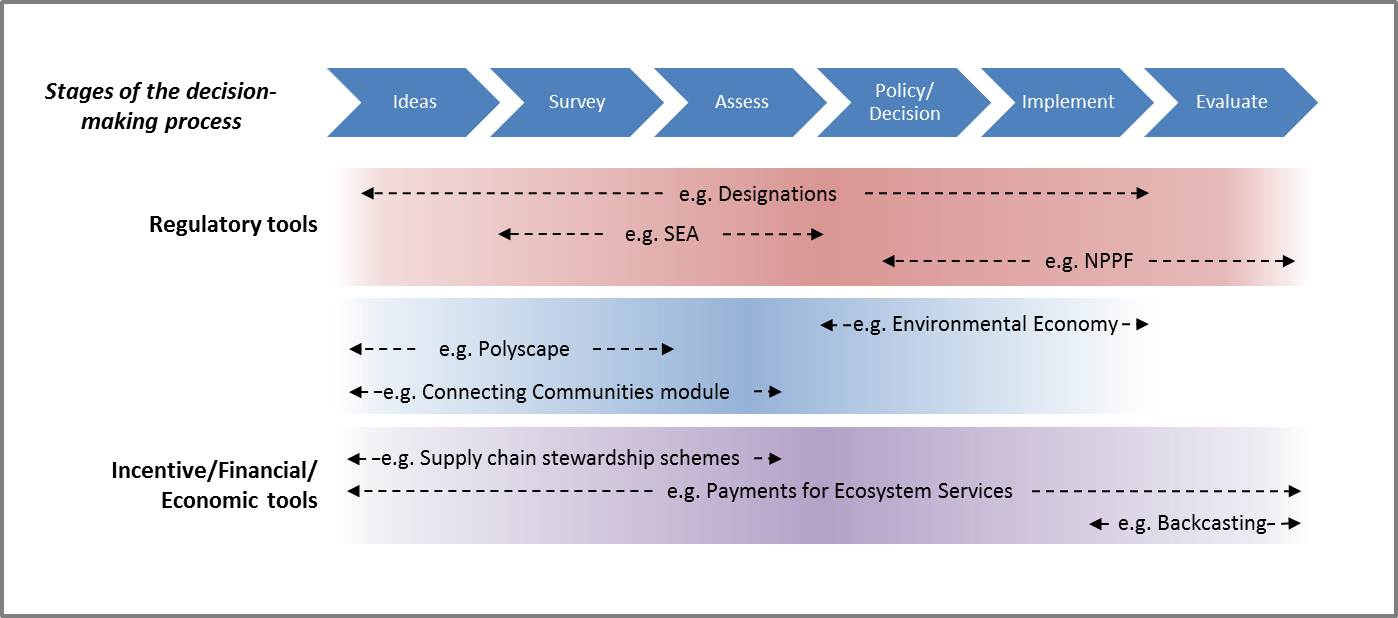
1. Regulatory tools (statutory)
2. Incentive tools (voluntary/financial)
3. Participatory tools (inclusive/learning )
4. Decision Support tools (evidence models)
5. Futures/ Forecasting tools (scenarios) – UK NEA **WP6**
6. Valuation tools – UK NEA **WP3**
7. Behaviour / Mindset change tools – UK NEA **WP8**

However, a tool can straddle several categories so they are not meant to be mutually exclusive. Appendix 1 lists the tool by the categories we have used for this workshop only.

***Please note that the futures, valuation and mindset tools are not being covered explicitly in this workshop as they comprise specific outputs of other UK NEA Work Packages which will feed into our research at a later stage****.*

Using this typology we therefore propose to develop a framework which **prioritizes at least four tools for detailed investigation and adaptation incorporating the ecosystem approach**. Within this work we will necessarily address, within practical resource limitations, issues relating to the wider efficacy of the tool, as well as how to embed ecosystem thinking within it. When prioritizing the tools it is also important that we capture tools that collectively capture all the key stages of decision/policy making process (Figure 1).

**Figure 1: Tools typology and stages in the decision making process.**



*Stages of the decision-making process*

Regulatory Tools

Incentive/Financial/Economic Tools

Decision Support/

Participatory Tools

# The Tools Reviews

The research team and selected members of our advisory panel and other specialists have been engaged in compiling tool reviews. The choice is subjective and based primarily on the skills, knowledge and experience of the team, reflecting their views on selecting the tools where the greatest potential exists both in terms of the tools importance as well as its suitability for embedding ecosystem thinking. The reviews have been largely completed in small teams with BCU performing some quality assurance**. However these tool reviews are work in progress and therefore should not be seen or distributed as finished documents**. **These reviews do not reflect the views of any agencies, and their final format is the responsibility of the research team itself.**

We welcome your views to inform and strengthen the reviews. If you have any views or extra information that can enhance the reviews, please feel free to amend any review and email back. [Michael.hardman@bcu.ac.uk](mailto:Michael.hardman@bcu.ac.uk)

Appendix 1 lists the 25 tools that have been selected and, which in our research team’s view have most potential for success for embedding the ecosystem approach. The full text of the reviews can be found in Appendix 3 (a separate zipped attachment). The review template was designed in response to several scoping interviews with selected case study participants that identified key issues in the use and application of existing tools, together with thoughts about how to maximize the utility of the Ecosystem Approach.

Before considering the results of the tools reviews themselves, a more general critique of the ecosystem approach provides an important context within which this research is located. The summary below is based on case study participant interviews, workshops and a literature review.

The ecosystems literature contains a lot of published theoretical work which is rarely translated into practical policy applications.[[1]](#footnote-1) There are a growing number of examples of the approach being applied in a piecemeal way, focussing in particular on ecosystem services.[[2]](#footnote-2) Where more integrated work has been done as evidenced in green infrastructure approaches, it tends not to be strongly embedded into mainstream decision-making albeit with the notable exception of Birmingham City Council.[[3]](#footnote-3)

Whilst the Ecosystem Approach has been evident in environmental research and policy there are important considerations when exposing other sectors or professions to this concept and associated vocabulary. At present there is a stream of thought that champions this as a separate process rather than embedding it within existing activities/projects or, as demonstrated in the Relu rural urban fringe project, fused with other conceptual approaches to produce simpler and more accessible frameworks.[[4]](#footnote-4) There appears to be a tension between the need to champion explicitly the ecosystem approach as the premier model for integration across the land based industries as opposed to a more implicit embedding of its principles.

**The key issue appears to be ensuring that any initiatives secure full sign up and active involvement by all those sectors who make policy and decisions, ideally at the earliest stage in the process. Significantly, there is little evidence of this happening in contemporary policy and decision making.**

There is also an important point about scales and spatial frameworks with agencies using different spatial frameworks for their work programmes and associated initiatives. Rarely do these spatialities coincide leading to a confused situation on the ground.

Our framework, therefore, will be built from the ground-up based on the views and aspirations of individuals and agencies positioned at the cutting edge of innovative practice. Consequently, the case studies play a critical role in helping shape the development of the framework. And through their subsequent involvement in testing of the frameworks and tools our team produces, maximises the chances of success. Appendix 2 highlights the case study projects in the research with a summary description of their value in this project.

# Themes and Lessons Emerging from the Tools Review

The following section captures the main lessons emerging across the tool reviews with some questions for you to think about prior to the workshop. For a detailed look at the reviews please see the separate attachment (Appendix 3).

* The vocabulary of ecosystems thinking is causing problems through the uncritical use of ecosystem approach (the wider holistic concept) and ecosystem services (the benefits derived from ecosystems). Terms are used interchangeably signalling that its wider intelligibility has failed to be grasped fully by publics and experts alike. The jargon and terminology needs simplifying for greater engagement (use commonly heard terms and concepts that reflect the EA or ES).
* There is a lot of relevant good practice going on in policy and practice but which does not use the ecosystem approach framework explicitly. Does this matter?
* There is a tension between sophisticated tools that are driven by huge amounts of data and evidence with significant resource demands in terms of IT capability, skills and supporting services *versus* more ‘quick and dirty’, but immediately usable, approaches. Which is the best option?
* The role of effective partnerships is crucial in tool development; rarely are tools effective when developed in isolation. What does an effective partnership look like on the ground?
* There is a bias on using ecosystem services as the principal derivative from the ecosystem approach in many tools, with alternative avenues not being investigated. In particular the distributional (social and environmental justice) impacts of interventions using ecosystem services are not recognised. How can the winners and losers be identified in such processes?
* When engaging with professions where the ecosystem approach is largely unknown there is a need for a ‘hook’ that can engage key stakeholders to adopt it. Whilst regulatory and incentive tools can be useful for securing engagement, they are vulnerable in the extent to which they secure active buy in and resilience. A different approach is to identify champions and innovators within these professions who, through their leadership roles, can alert people to potential value through exemplars and demonstration projects. What in your view is the best way to secure the buy in and commitment to the principles of the ecosystem approach?
* All tools require people to have skills in the use, application and interpretation of results and outputs. This area of skill development is poorly recognised and built into tool development leading to misuse of the tool with significant resource implications. This is most marked where complex models appear as a black box system with end users not conversant with the model dynamics and, where answers provided can create a dependency culture hindering understanding as well as a failure to appreciate the limitations within such models. .
* There are tensions between expert led and more inclusive approaches. Short timescales generally mean that expert led approaches will dominate, including many tools that favour ecosystem services. This inadvertently leads to particular tools being favoured by agencies (e.g. scenarios), set within a one-size-fits-all or ‘take it or leave it’ type approach, rather than a tool being selected that best fits a particular goal. There is an inherent danger that the tool becomes the end in itself rather than the mechanism to achieve such goals.
* There is clear evidence that local knowledge on the ground is failing to be adequately captured and fed into tools. The issue of local expertise versus professional expertise presents a major barrier to the successful engagement with tools. Many organisations have developed their own tools to do the job. How can we better capture local expertise in tools. Is open source a useful approach to follow.
* The way many tools are currently used/abused (e.g. poorly implemented) raises key issues that go well beyond the remit of this research. Today many decisions are made with tools being used to justify it rather than being used to help improve the decision/policy making process. Consequently we need to be careful selecting tools that have such weaknesses within them as that may inhibit impact in subsequent tool development. **There is a strong relationship with W8 here on behaviour and culture change.**
* At present we lack good indicators to assess ecosystem services. This is highly problematic as evaluation is all too often a bolt on; yet within these reviews we have built an evaluation framework from the scoping interviews.

The reviews (included in full in Appendix 3) do not make any overall evaluation of their potential for the research *per se*. The process was one of critical reflection which should allow you to be well-informed about a range of tools currently in use. However, these are DRAFT works in progress and are not written as a final version for publication.

**The role of the reviews is to provoke and allow you to use the ‘tools boards’ during the workshop to add any comments you wish to make on the value or otherwise of certain tools you have used. The workshop format will revolve around a general introduction to the family of tools, keynote presentations and prepared reflections from participants. There is also plenty of time for plenary discussion. The discussions will have an iteration with a chance to build on the morning’s deliberations in the afternoon.**

Table 1 provides a summary overview of the tools with a particular focus on ecosystem thinking dimensions. This provides a gateway to the reviews and should help you to construct a critical understanding of the issues in advance of the workshop.

**Table 1: Summary table of tools.**

| **Potential for incorporating the ecosystem approach** | **Comments** | **Tools that could be adapted to this effect** |
| --- | --- | --- |
| **Improve stakeholder/user understanding** of EA concepts | (+) Simplify terminology for greater engagement; wider public understanding of the concepts could lead to improved community environmental governance; learning and action approaches for embedding ES/EA concepts; promote community ownership of issues | Connecting Communities module  Games (e.g. RUFopoly)  National Character Areas (NCAs)  Participatory Mapping  Sustainable Estates Workbook  Ecosystems Knowledge Network |
| (-) EA/ES language may not resonate well with stakeholders |
| Better understanding of **impacts on ES and trade-offs** and ES linkages | (+) Develop economic arguments for conservation of ES; quantitative measures of ES effects on well-being; create stakeholder forums for understanding each others’ goals and concerns (links with point about public engagement) | Community Infrastructure Levy  MIMES (Multi-scale integrated earth systems model)  Participatory Mapping  Payments for Ecosystem Services (PES)  SEA |
| (-) Philosophical issues with ‘putting a price on nature’ |
| Better **visualisation of the local supply chain**, incorporating EA/ES concepts | (+) Link suppliers of ES with consumers; create new markets; support strategic planning; promote public engagement in developing local supply chain; integrate environmental and socio-economic goals; link stewardship schemes with the EA | Backcasting  Community Economic Development (CED)  Participatory Mapping  Payments for Ecosystem Service (PES)  Supply chain stewardship schemes  Visitor Payback  Local Economic development models. |
| (-) Lack of buy in from key publics hinders success |
| Streamlining/expanding content of tools to **incorporate 12 principles of CBD** or a ES ‘checklist’ | (+) Would require trade-offs to be made explicit; would help extrapolate implications beyond the local scale; encourages standardisation and early consultation | EIA  SEA  Supply chain stewardship schemes  Sustainable Estates workbook  Local Plans |
| (-) Potential use/abuse of tool to support a decision already taken; tick box syndrome applies |
| Enable use of tools **across natural and built environment** (incorporating all types of ES) | (+) Use pre-existing statutory and good practice ‘hooks’ where possible (e.g. NPPF, EU Habitats Directive, Natural Environment White Paper but also include particular exemplar etc.); present and consult on interactions between natural and built environment | Biodiversity offsetting  NPPF with respect to Local Plans  Green Infrastructure  Games (e.g. Rufopoloy)  SEA  Visitor Payback  Green Infrastructure |
| (-) The ES concept is not suitable for engaging all relevant parties |
| Visualisation of **practical ES delivery** (spatial tools, using GIS) | (+) Powerful, web-based modelling software to allow visualisation of ES trade-offs and scenarios; helps to understand flows and interactions | ARIES (ARtificial Intelligence for Ecosystem Services)  InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs)  POLYSCAPES (renamed LUCI) |
| (-) Hard to integrate temporal aspects and requires specialist training; outputs imply a false sense of objectivity when data limitations (Garbage in garbage out). |
| **Improved public engagement** in developing visions/strategic plans for ES delivery (local resonance) | (+) Linking up different constituencies of people; can be on a context/product-specific basis; draw on local knowledge; tools that enable dialogue to understand the interventions needed to improve ES function and delivery; enhance communication between ‘non-usual’ suspects; collaboration to address data gaps | Backcasting  EIA  Connecting Communities module  Development plan  Neighbourhood Plans  Participatory Mapping  POLYSCAPES (renamed LUCI)  *Rufopoly* |
| (-) Often requires volunteer time to facilitate engagement (limits include available time and skills) |
| Transform ‘mitigation’ discussion to consider wide range of ecological and social **‘benefits’ that encompass ES** | (+) Public engagement in planning for offsets raises awareness of ES ‘benefits’; improve knowledge of how to mitigate for a range of ES; move away from ‘development-led’ approach to ‘habitat/ES-sympathetic’ approach | Biodiversity offsetting  Games  NPPF with respect to Local Plans  SEA  EIA  Visitor Payback  Payment for Ecosystem Services |
| (-) Difficult to accurately assess all benefits in line with ES thinking |
| Better **integration of environmental and socio-economic goals** into planning and projects | (+) Using local resources to meet goals; supporting the local supply chain; projects which have multiple benefits; requires more interdisciplinary working between ecologists, social scientists and economists; thinking beyond ‘usual concerns’ | Community Economic Development (CED)  Environmental Economy  EIA  Local Economic Development Model  Participatory Mapping  Games (e.g. RUFopoly) |
| (-)Need to ensure good, meaningful quality and avoid ‘tick-box’ culture |
| **Incorporate ES into ‘bids’** for developments and/or other planning processes (e.g. designations, SEA etc.) | (+) Requirement to quantify and qualify ES in order to strengthen ‘bids’; requirement for management plans that incorporate EA/ES; better understanding of cultural components | Designations  SEA  EIA |
| (-) Need to ensure good, meaningful quality and avoid ‘tick-box’ culture |

Appendix 1 Tables Project: Overview of reviewed tools

**List of tools as per type/function as detailed in the October workshop**

**Regulatory tools**

1. Designations (AONB/National Parks/ Nature Improvement Areas)
2. Development (Local) Plans
3. Environmental Impact Assessment (EIA)
4. National Planning Policy Framework (NPPF)
5. Strategic Environmental Assessment (SEA)

**Decision (support) tools / Participatory tools**

1. ARIES: ARtificial Intelligence for Ecosystem Services
2. Community Economic Development
3. Connecting Communities Module (Community Champions Course)
4. Environmental Economy Tool (possibly)
5. Games (e.g. RUFopoly)
6. InVEST - Integrated Valuation of Ecosystem Services and Tradeoffs
7. MIMES - Multi-scale, integrated shell of models that determine stock and flows of selected ecosystem service models
8. National Character Areas
9. Neighbourhood Plans
10. Participatory Mapping
11. Polyscapes/LUCI (GIS toolbox that uses multiple criteria analysis to explore the impacts of decisions on land use or management changes)
12. Sustainable Estates workbook: ‘Getting the Best from Scotland’s rural estates – twelve actions for sustainability’ (aid for planning/change decisions)

**Incentive / Financial / Economic tools**

1. Backcasting
2. Biodiversity Offsetting
3. Community Economic Development
4. Community Infrastructure Levy (CIL)
5. Green Infrastructure (GI)
6. Local Economic Development and Environment Toolkit
7. Payment for Ecosystem Services (PES)
8. Supply Chain Stewardship Schemes
9. Visitor Payback

**\*\*Tools covered by other work packages not included here**

* Economic valuation
* Futures and scenario tools
* Macros economic tools

**Alphabetical list of tools reviewed (please note our remit does not cover scenarios and other economic valuation tools as these are developed in other Work packages.**

1. ARIES - ARtificial Intelligence for Ecosystem Services
2. Backcasting
3. Biodiversity Offsetting
4. Community Economic Development
5. Community Infrastructure Levy
6. Connecting Communities Module (Community Champions Course)
7. Decision Support Tools (including: INVEST, ARIES, ECOMTETRIX, LUCI/Polyscape, SIAT, NatureServe Vista, Planning Screening Tools)
8. Designations
9. Development (Local) Plans
10. Environmental Economy Tool
11. Environmental Impacts Assessment (EIA)
12. Games (e.g. RUFopoly)
13. Green Infrastructure
14. InVEST - Integrated Valuation of Ecosystem Services and Tradeoffs
15. MIMES - Models that determine stock and flows of selected ecosystem service models
16. National Character Area
17. National Planning Policy Framework (NPPF)
18. Neighbourhood Plans
19. Participatory Mapping
20. Payment for Ecosystem Services (PES)
21. Polyscapes/LUCI (GIS toolbox that uses multiple criteria analysis to explore the impacts of decisions on land use or management changes)
22. Strategic Environmental Assessment (SEA)
23. Supply Chain Stewardship Schemes
24. Sustainable Estates Workbook: ‘Getting the Best from Scotland’s rural estates – twelve actions for sustainability’ (aid for planning/change decisions)
25. Visitor Payback

Appendix 2 Tables Project: Potential Case Studies

1. **Birmingham and Black Country Nature Improvement Area:** Selected due to the peri urban location of a new landscape scale nature conservation designation.The experimental nature of this new bottom up designation was seen to offer valuable learning opportunities.
2. **Black Country Geopark bid:** Selected as the Geopark Bid forms a central plank of the Nature Improvement Area and Local Enterprise partnership strategy. The use of ecosystem services within a designation bid was seen as an experiment to secure additionality and enhance chances of success.
3. **Wolverhampton City Council Planning Department:** Selected due to the highly successful change of culture in the design and delivery of planning functions. The change management theme here provides important lessons in joined up planning and improving delivery of planning services.
4. **Birmingham City Council: Green Infrastructure Ecosystem Assessment:** Selected due to ground leading and innovative work on embedding ecosystem services within the Green Infrastructure planning of Birmingham City Council (and the Black Country) and making connections with health and socio-economic indicators. A full assessment has been undertaken driven by a policy champion. Important lessons for embedding ecosystem services across the built environment.
5. **Worcestershire County Council *et al.*’s Green Infrastructure Partnership:** Selected due to their innovative use of concept statements in their green infrastructure partnership working. Featured as a case study in the Relu Rural-Urban fringe work. This has brought stakeholders together across the built and natural environment and helped construct a framework within which ecosystem services have been discussed and assessed. Being used as a ‘template’ by other Councils and GI partnerships.
6. **Much Wenlock Neighbourhood Plan:** Selected due to the status of Much Wenlock as a frontrunner pilot plan. We also have a team member who is chair of the group.
7. **Cannock Rugeley Community Champions:** Selected due to the bottom up nature of a training course that was developed by BCU staff (Scott, Hardman, Curzon). The role of champions is important in highlighting and driving a change of thinking and which provides valuable learning opportunities.
8. **Welsh Government Single Environment Body:** Selected due to the parallel development of a framework within which the Ecosystem Approach will be embedded. The initiative is interesting due to its ‘regional’/national scale of operation set within a devolved government framework. There are also important lessons and reciprocity from sharing experiences across TABLES and the Welsh Government Single Body project projects as they have similar goals and timescales.
9. **Staffordshire County Council:** Selected due to their innovative thinking and new policy framework exploring how the ecosystem approach can be embedded in their new governance arrangements.
10. **Grow with Wyre project:** Selected as an exemplar landscape scale project that seeks to deliver ecosystem services within an integrated land use strategy.
11. **Greater Birmingham and Solihull and Worcester Local Enterprise Partnerships:** Selected as an exemplar that has developed spatial planning frameworks for delivery. The LEPs are currently moving to take on more strategic roles in the delivery of economic growth and planning. Dedicated working group provide important opportunities to look at the potential for using the environment as an asset for development opportunities.
12. **North Devon District Council Local Plan:** Selected due to their innovative work on incorporating an ecosystem approach into the design and delivery of their local plan documents. This is one of the first plans that explicitly seeks to champion the Ecosystem Approach in policy development.
13. **Cotswold AONB:** Selected due to its status as a high profile landscape designation with a range of ecosystem services set amongst challenging governance arrangements. There is an on-going management plan review. The review provides an opportunity to incorporate ecosystems thinking more explicitly into the plan. As a landscape scale designation it also offers a challenge of governance given the number of local authorities involved in its management. There are a range of tools on offer to help deliver the AONB objectives and further develop the goals of this project. We also benefit by having a Board member on our research team which offers important opportunities for reflexive action research.
14. **High Weald AONB:** Selected due to its status as a high profile landscape designation with a range of ecosystem services set amongst challenging governance arrangements. There is clear evidence of innovative practices in response to challenges of tool development, including the use of the partnership as a model for the duty to cooperate. There is an on-going management plan review. The review provides an opportunity to incorporate ecosystems thinking more explicitly into the plan. As a landscape scale designation it also offers a challenge of governance given the number of local authorities involved in its management. There are a range of tools on offer to help deliver the AONB objectives and further develop the goals of this project. This also offers a comparison to the Cotswold example.
15. **South Downs National Park:** Selected due to its new status as a National Park and Nature Improvement Area. Important experiments in land management and planning practice together with some experience of trying to use ecosystem services in the park plan and in bottom-up community engagement.
16. **EU Interreg SURF (Sustainable Urban Rural Fringes) Gaywood Valley, Kings Lynn:** Selected due to its innovative status as a project on the EU Sustainable Urban Fringes project where ecosystem services have been assessed within a river valley as part of a wider learning and participation exercise. This has informed a management plan for the area as part of the overall Interreg project.
17. **West Country Rivers Trust:** Selected due to its novel partnership approach to look at river management at a landscape scale. Involved in catchment pilots and offers a new way for thinking about ecosystem services.
18. **Biosphere reserves (Canada and South Africa**): Selected due to the ability to use international research on biosphere reserves and consider how an ecosystem approach has or could be incorporated within them. This also links to the North Devon local plan which has a biosphere reserve within it.
19. **Welsh Farmers:** Selected due to the importance of tenants and landowners in the management of countryside. Important group to highlight how current developments in agricultural and rural policy are collectively viewed.

1. Scott et al (2013) Disintegrated Development at the Rural Urban Fringe: Re-connecting spatial planning theory and practice, *Progress in Planning* (in press). [↑](#footnote-ref-1)
2. Norgaard, R.B. (2010) ‘Ecosystem services: From eye-opening metaphor to complexity blinder.’ *Ecological Economics* 69(6): 1219-1227 [↑](#footnote-ref-2)
3. Grayson, N. (2012) ‘Birmingham – The Total Environment to an Edible City?’ Paper presented at: Carrot City Seminar, Birmingham, Birmingham City University [↑](#footnote-ref-3)
4. Scott, AJ and Carter (2011) The Rural Urban Fringe Forgotten Opportunity Space?  *Town and Country Planning* May/June 2011 231-234 [↑](#footnote-ref-4)