

# Natural Capital Asset Check Tool Review

## Ecosystem Services/Valuation Tools

### TABLES Project 2012: Mini reviews

**Guidance** *Using your experience and expertise, consider the following tasks in relation to the tool. It may not be possible to complete all tasks for each tool due to a lack of available information, the task not applying to the tool, etc. **Please note where this is the case by writing in the reason in the space provided.** Please use a maximum of 6 pages of A4 (excluding diagrams and appendices). **Your responses are required in the white spaces.***

#### Task 1: Basic information

**Name of the tool** Natural Capital Asset Check (NCAC)

**Type of tool (list all that apply)**

*Learning and skills (pedagogic); participatory; regulatory; collaborative; mapping; valuation; modelling; decision; futures; financial; ecosystem services*

Participatory, Regulatory, Collaborative, Decision, Futures, Financial, Ecosystem Services

**Group members**

*(minimum size 3 members, must include a BCU rep)*

1. Ian Dickie
2. Phil Cryle
- 3.

**Please provide a brief synopsis of the tool**

*This may include: background context, development (and ownership if appropriate), current use and applications etc.*

*Please also note any desired outcomes of the tool so that you can make reference back to these in Task 7: SWOT analysis*

The UK Government is committed to Sustainable Development (SD), understood as inter-generational equity<sup>1</sup> but this broad concept provides little practical guidance to decision makers facing difficult trade-offs. Natural capital is the combinations of natural assets that produce values (i.e. ecosystem services) to society. Conventional economic appraisal techniques using market data often fail to reflect how impacts on the underlying natural capital assets will impact t on future human welfare.

However, our understanding of the links between natural capital assets and the services they provide has improved through application of ecosystem service concepts. The NCAC approach aims to provide a way of analysing the relationship between current changes to natural capital and its ability to support future human welfare.

To understand the impacts of our actions, we want to understand how a natural capital asset producing a ‘flow’ of ecosystem services will be affected by past, current and future changes (e.g. a policy decision). Currently there is no systematic method to assess the resilience of natural capital and feed it into policy and management decisions. Cost-benefit analysis (CBA) is often inadequate in this respect because it fails to capture some strategic issues (e.g. cumulative effects), and because marginal valuations are not relevant where thresholds effects are (potentially) being approached.

In 2010, the Government Economic Service Review of the Economics of SD recommended that a ‘natural asset check’ should be investigated for use in the appraisal of public policy options (Price et al., 2010). Following publication of the results of the UK National Ecosystem

<sup>1</sup> i.e. the widely recognised Brundtland Commission definition of SD: ‘...development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’ (1987 Brundtland Report, “Our Common Future”)

Assessment (UK NEA, 2011), the Natural Environment White Paper (NEWP) (HM Government, 2011) proposed that the case for such an asset check to be considered further, with a view to supporting the work of the Natural Capital Committee (NCC).

This support will take the form of providing advice on: when, where and how natural assets are being used unsustainably; where action to protect and improve natural capital should be focussed for greatest impact on well-being; and, the research priorities that follow from these needs.

The emphasis of the work is to develop a practical and applied approach – in both methodological, and resource terms. Methodologically, the approach must be robust but also achievable with the current state of environmental-economic knowledge. It must be deliverable from resources that are realistic in the context of public sector budget constraints and on a timetable that can inform policy and other decisions.

An asset check tool can provide inputs to both cost-benefit analysis and wealth accounting approaches at micro and macro scales.

## Task 2: Use of the tool

Position / Use	Stage	Currently used	Could be used
<i>If you can, please indicate which <b>stage(s) of the decision / policy making process</b> your tool is / could be used in (these stages were identified in the specification document)</i>	Ideas	There is currently no assessment of the condition of natural capital assets in the UK. Environmental accounts provide a snapshot at point in time of the value of natural capital. CBA is undertaken to determine the marginal impact of government policies.	An asset check will link natural capital assets to the current and future provision of ecosystem services, such as how ecological functions may be impacted by cumulative effects. Research on the link to national accounts will also be developed.
	Survey	-	Engagement across economics and ecology from academics, consultancies, government agencies and industry experts.
	Assess	NCAC will build on the UK National Ecosystem Assessment (UKNEA) <sup>2</sup> which provides a snapshot of key ES in the UK.	An asset check will build on UKNEA by combining information on the stock of natural capital, trends in its state and impacts/ thresholds.

<sup>2</sup> <http://uknea.unep-wcmc.org/neat.ecosystemsknowledge.net>

Policy / decision	Current analysis of impacts on natural capital is through CBA. Its main weakness is the inappropriateness of marginal valuations where thresholds effects are (potentially) being approached.	NCAC will account for the concept of 'critical natural capital' recognising that substitution between different forms of capital (man-made, human and natural) is not always possible. It can input to both CBA and wealth accounting approaches.
Implement	-	NCAC could be implemented at both macro level – wealth accounting and the national impact of government policies and micro level – local authority and private firm impacts on natural capital.
Evaluate	-	The rates of change in different natural capital assets and/or the services they support will influence the longevity of asset check results, and therefore the frequency with which they will need to be updated.

Please add any further comments here:

### Task 3: Existing literature about the tool

**Are you aware of any KEY policy and / or academic literature evaluating your tool?**  
(e.g. reports, journal articles, books)

Tool is not yet in the public domain.

### Task 4: Your experience of working on the tool

**Have you done any research/consultancy work on this tool in terms of its development, testing and/or evaluation?**

*If so, please provide an outline.*

The first version of the asset check was tested in two ways. Firstly, a preliminary UK application was undertaken drawing on the UK NEA, in order to consider some of the main ecosystem components and systems that make up the UK's natural capital.

Secondly through three more detailed case studies which were used to test the application of the draft methodology:

1. Fisheries and saltmarsh fish breeding habitat;
2. Using Countryside Survey (CS) data on habitats (e.g. farmland), and
3. Woodland, using CS data and other analysis, such as ONS national accounting data and modelling of ecosystem services from the Public Forest Estate.

The project and drafts of the asset check tool were presented to a meeting of the Government's Natural Capital Committee on the 18<sup>th</sup> July, 2012. Feedback from this meeting has informed the ongoing work. Following the testing, the natural capital asset

check (NCAC) tool was revised again. It is suggested that this version is taken forward for use in the UKNEA follow-on project natural capital asset check work package (WP1).

**Guidance** For Tasks 5-7, please also try to consider the **future** development and application of this tool in the TABLES project in your answers.

**Task 5: Incorporating the ecosystem approach (EA) and ecosystem services (ES)**

*\*\*Please refer to the summary text about ES for concept clarification at the end of this template (appendix)\*\**

**Using examples (from practice, research or consultancy), explain how EA and/or ES are currently incorporated in/by the tool**

*If neither approach is currently incorporated, please move to the next question*

The NCAC aims to analyse the impact of a change in a natural capital asset on its sustainability in terms of the total 'stock' and ecosystem services 'flows'.

Natural capital assets provide the 'flow' of ecosystem services that we benefit from. The continued production of these ES is dependent upon the extent and integrity (condition) of these assets. Therefore understanding the state of natural capital, and the possibility of harming service flow through our actions is important for our future welfare. This thinking has laid the foundations for the NCAC. The asset check potentially informs us about the possibility of ensuring we don't cross thresholds that diminish or destroy the flow of ES

**Table 4.1. Summary of natural capital asset check result for saltmarsh and fisheries ecological cycle**

Provisioning ES: Fisheries Productivity

Key observations	Thresholds	Natural asset integrity	Tradeoffs	Future Sustainability
Decrease in extent of UK saltmarshes due to historical land claim from sea, ongoing loss from coastal development and relative sea level rise being slowed by managed realignment.	Saltmarsh plays key role in development of juvenile fish, insufficient habitat could limit fish stocks, increasing vulnerability to other pressures.	Currently supply of saltmarsh habitat is potentially insufficient to support demand for fish stocks (i.e. could be a limiting factor).	Managed realignment usually removes land from agricultural use (except extensive grazing). Loss of crops may be of similar value to gains in fisheries productivity.	Continued loss from climate change threatens to increase constraint on fish stocks from lack on juvenile feeding habitat.

benefits.

**How could the ecosystem approach and/or ecosystem services be (further) incorporated within the existing tool?**

As above.

**Task 6: Situating the tool within priority questions/criteria arising from the scoping interviews**

**Explain how the tool can be situated within the priority questions/criteria that arose in the scoping interviews**

*Complete as many boxes as required*

Priority question/criteria	Does your tool address/implement this question/criteria? Or does it have the potential if it was better integrated with an EA/ES approach? <i>Please explain how.</i>
<b>Language and communication</b>	
1. Contribution to aiding the development of shared vocabulary within which principles of EA and ES can be shared with multiple stakeholders across built and/or natural environment	The output will lead to development of a shared discourse of EA/ES through its contribution to a more holistic assessment of ES that could be used by local authorities and private firms in project appraisal. This would provide an opportunity to engage with stakeholders and therefore could help to share principles of EA and ES.
2. Capacity of the tool to develop shared understandings of the many identities and values of places from the perspectives of multiple visitors, residents and businesses	The concept of nature as a capital asset that produces value is consistent with standard accounting terminology. The tool is flexible so as to account for but consolidate different perspectives on what constitutes natural capital.
3. Capacity of the tool to improve or enable engagement across different publics so avoiding the usual suspect problem	Engagement on draft NCAC approaches is likely to involve a wide range of stakeholders, but given its technical nature it may be difficult to increase participation from other publics.
<b>Learning from experience/pedagogy</b>	
4. Capacity of the tool to help reveal and value 'hidden' assets that are not recognised by communities or publics that use them	Through highlighting issues around the sustainability of natural resource use, the NCAC should help reveal the impacts of natural capital depletion. Dissemination of the tool beyond use by central government in CBA and wealth accounting could highlight the importance of natural capital assets to local authorities and businesses.
5. Extent to which tool is building on other tools or EA/ES progress	NCAC aims to build on the development of ES thinking exemplified in ecosystem assessments such as MEA, TEEB and UKNEA as well as the WAVES project and the literature on comprehensive national accounting including notions of 'Green Accounts' and 'Genuine Savings'.
6. Extent to which tool is locally derived or grounded or can be adjusted to closely reflect 'local' context. Is the tool suitable for an open source approach?	NCAC is intended to work at different scales, and to provide local authorities and private firms with the power to determine impacts on local natural capital assets e.g. at a catchment level.
7. Extent to which the tool is open to interpretation and application in a variety of forms (that reflect 'cultural')	The tool as it currently stands is sufficiently flexible to enable application across all forms of natural capital, interpreted in a variety of ways. Much like

differences)	CBA, the basic concept of the tool exists and its application is open to interpretation within the boundaries set by this concept e.g. how to determine a threshold – in fish stocks use concept such as maximum sustainable yield, for atmospheric GHG composition use the consequential limits to climate change (under 2 degrees global warming)
<b>Developing and selecting tools</b>	
8. Is the tool dependent on a specific funding source? How onerous is the application procedure? What are the chances of success?	Application requires significant analytical effort and combination of environmental-economics and ecological knowledge of the natural capital assets in question and their ecosystem services.
9. Does skills development (essential or optional?) and support exist for the tool or is there a body to ensure the optimal and correct use of it?	We currently envisage one of the outputs of the NCAC approach to be a guide on <i>how</i> to undertake an asset check, with links to supporting information such as technical reports, practical case studies, links to information sources. A web-based guidance tool, similar to the online value transfer guidelines <sup>3</sup> , could be suitable.
10. Extent to which current statutory hooks can be exploited by the tool or will benefit the quality or application of the tool (e.g. NNPF's duty to cooperate, SUDS, ecol. networks)	An overarching message from the Natural Environment White Paper is the need to put natural capital at the centre of economic thinking and at the heart of the way we measure economic progress nationally. A key commitment is to establish a Natural Capital Committee to advise the government on the state of English natural capital. The White Paper also includes a specific commitment to take forward this NCAC.
<b>Informing resultant policies effectively</b>	
11. Extent to which the tool informs or improves policies/decisions. What does the tool cover? (full range of positive and negative economic, social and environment impacts / tradeoffs?)	Through identifying criticalities in certain natural capital assets, the NCAC may also form priorities for action at a policy level.  The tool is intended to be used in CBA as additional evidence of the impact of decisions on natural capital assets. It considers the impact of changes to natural capital assets/stocks on human welfare through the production of ES flows. It therefore considers the full range of economic, social and environmental impacts.
12. How does the tool link into the planning system (applications and processes). At what cost / extra burden?	Specific links to policy appraisal including planning regulations and subsequently the use in planning applications is to be confirmed.

<sup>3</sup> <http://www.eftec.co.uk/eftec-projects/valuing-environmental-impacts-practical-guidelines-for-the-use-of-value-transfer-in-policy-and-project-appraisal>  
[neat.ecosystemsknowledge.net](http://neat.ecosystemsknowledge.net)

<b>Delivering management objectives</b>	
13. Suitability or capacity of the tool to assist with managing visitor needs and pressures within protected areas / the considered area? How?	The tool can facilitate the management of areas through contributing evidence about the condition and integrity of natural capital within an area to the decision making process.
<b>Local ownership/new governance</b>	
14. To what extent can the tool assist in developing statutory plans (local and management plans) and improve ownership and use by publics?	NCAC could assist in the appraisal of local authority policies and management plans.
15. To what extent does/could the tool contribute to a new form of community governance in management of the environment?	Through highlighting the value of natural capital to human welfare and the impact of human actions on local natural assets, new governance strategies may emerge at local authority level.
<b>Improved tools: understanding flows, interconnections and spatial issues</b>	
16. Capacity to improve spatial understandings of the flows and interactions of various ecosystem services between sectors and at different scales	The tool will require consideration of the ES 'flows' that arise from different natural capital assets or 'stocks'. Use of the tool by local authorities and private firms as well as central government can improve understandings of these concepts more widely.
17. Capacity of the tool to reconcile assessments of options and benefits across different scales (and sectors)	The intention is for the tool to be used in both CBA and wealth accounting and the reconciliation of natural capital assessments across different spatial scales will therefore be required.
18. Extent to which the tool is capable or can be manipulated to work across sectoral and administrative boundaries	The tool should provide sufficient flexibility for assessments of natural capital to be made across different spatial scales and for different sectors.
19. Extent to which the tool can handle data shortages and gaps (or is effectiveness considerably compromised?)	Assessments of different forms of natural capital will utilise the data that's available and rely on expert opinion where shortages and gaps in evidence exist.
20. To what extent has/could the tool put landscape/nature conservation and designated species/sites on the radar (positively or resulting in resentment?)	The intention of the tool is to identify the condition of natural capital assets and therefore it has direct relevance to the increasing the prominence of conservation as an issue.

*Please add any further comments here:*

**Task 7: A SWOT analysis of the tool**

**Referring back to the relevant policy and academic literature (listed in Task 3), plus your own expertise (listed in Task 4) and the way in which the tool is situated within the priority questions/criteria (listed in Task 6), please complete a summary SWOT analysis ensuring that each point is well justified**

*Where possible, this analysis should reflect the tool's past and current application, as well as its effectiveness in policy and decision making processes*

**Strengths** *(of the tool in delivering intended outcomes)*  
 NCAC is likely to improve the consideration of impacts on the underlying natural capital asset 'stock' across government and local authorities. Providing a structured way of analysing criticalities (e.g. thresholds) in natural capital for the first time.  
  
 It should also act to improve understanding and alter perceptions around the value of nature, thresholds in nature's ability to produce ES 'flows' and the sustainability of human actions.

**Weaknesses** *(factors that detract from the tool's ability to deliver intended outcomes)*  
 The outcomes of the tool depend upon the ability of users to identify impacts of policies. Data on impacts may be insufficient or non-existent and thus reliant upon expert opinion which can be subjective. In order for the tool to have traction outside of government and local authority circles it will have to be combined with regulatory requirements e.g. inclusion in CBA of firms.

**Opportunities** *(consider opportunities for application of the ecosystem approach and services)*  
 NCAC provides a means by which nature as an asset is acknowledged by firms and government authorities in order that their actions and policies are more sustainable.

**Threats** *(factors which negatively affect the tool and its outcomes)*  
  
*Classify these by their "seriousness" and "probability of occurrence" in the table below, and pay particular attention to the threats associated with potential use of ecosystem approach/ecosystem services.*

Threat	Seriousness (high, medium, low)	Probability of occurrence (high, medium, low)
<b>Complexity vs Usability</b> - The tool must be sufficiently developed so as to have a meaningful impact on the safeguarding of natural capital but not too complex so as to make its use and the outputs ineffective.	High	Low – acknowledgement of the risk at early stage enables the working group to account for it.
<b>Flexibility</b> – the tool must be sufficiently flexible to account for the wide range of natural capital assets that exist, however defined at different scales.	High	Low – <i>as above</i> .

Please add further comments here:

**Guidance** *Please now use the remainder of the document (box below) to make any general comments, observations or analyses of the tool*

**Further comments**

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