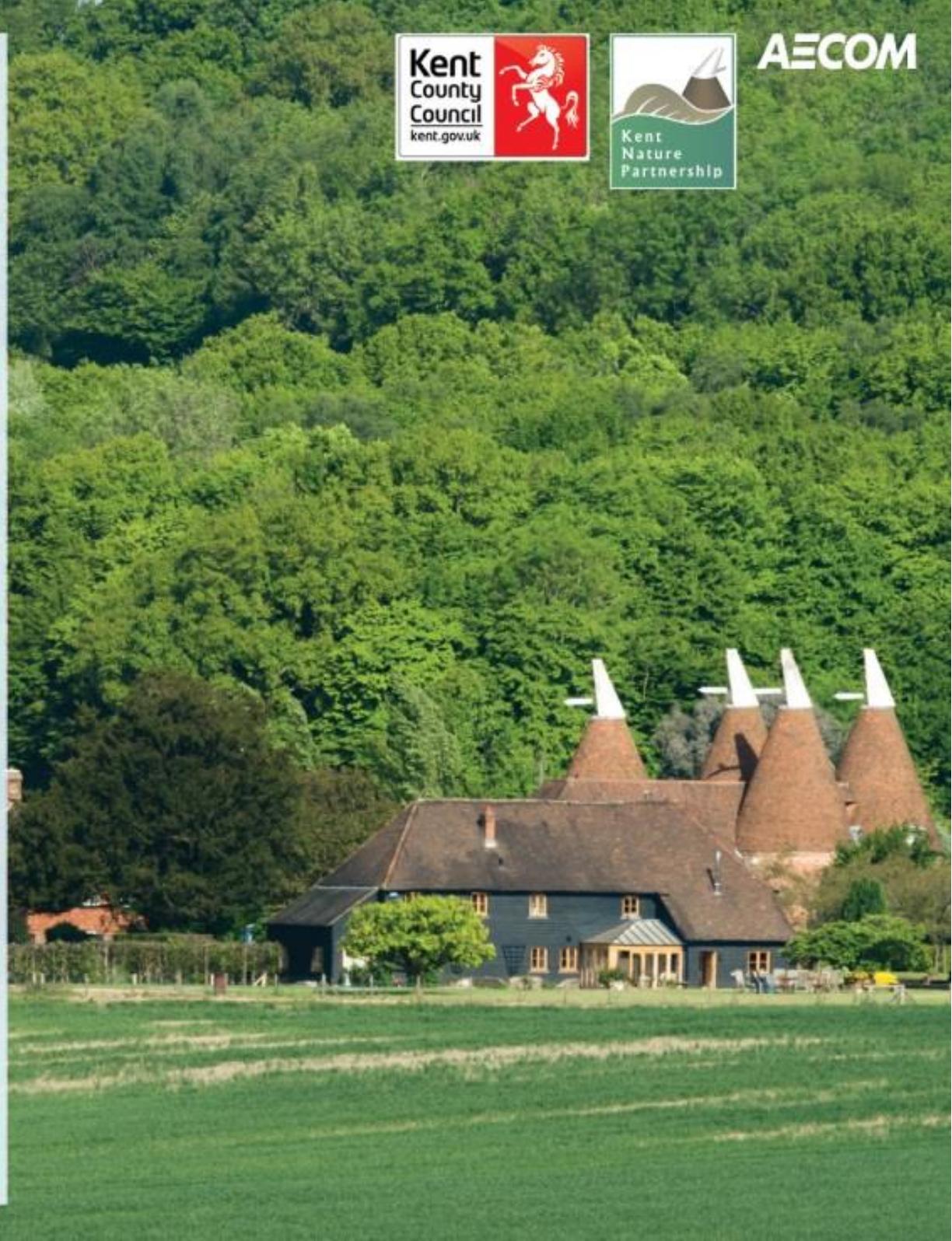




MAKING A CASE FOR NATURAL CAPITAL ACCOUNTING IN KENT

August 2015





Kent County Council (KCC) and the Kent Nature Partnership (KNP) are in the early stages of developing a Natural Capital Account for Kent. As Natural Capital Accounting could have benefits for a wide range of Kent's stakeholders, they are now looking for support to develop this tool further. By providing an overview of some of the opportunities Natural Capital Accounting could have in Kent this note is a call for interested parties to come forward and help shape the project and its application going forward.

What is Natural Capital Accounting?

Kent's natural environment works hard. It provides natural goods, such as food and timber, as well as space for recreation; it helps to improve the quality of water and reduce air pollution; and it offers protection from heavy rainfall and flooding, high winds and rising temperatures. The way in which Kent's natural assets are arranged across the landscape also creates an attractive, characterful identity that draws in residents, employers and visitors. The supply of these goods, regulating and cultural services is highly valuable, and the ability of the natural environment to perform well will have a direct impact on Kent's long term prosperity and well-being.

Natural Capital refers to the stock of natural asset in an area that collectively underpins the supply of natural goods, regulating services and cultural identity provided by the natural environment.

The value of these goods and 'ecosystem services' is, however, not always fully accounted for in decisions around the way in which land and other natural assets are managed and used. As the quality and extent of the natural assets has a direct impact on this value, an improved understanding of the status and trends in the extent and condition of natural assets can in turn highlight risks and opportunities for ecosystem service provision relating to decisions around land management and use.

Natural Capital Accounting provides a framework for determining the overall 'stock' of natural assets or natural capital, and monitoring changes in the associated flows of benefits to people.

This not only provides a powerful way to communicate the contribution that the natural environment plays in supporting economic vitality and social wellbeing, but can also be used to evaluate the nature and significance of trade-offs where investments affecting the natural environment can support or impede the capacity of ecosystems to function.

Recognising the need for Natural Capital Accounting to be robust, consistent, and comparable with other accounting systems, the UN has developed an Experimental Ecosystem Accountingⁱ (EEA) approach. Although an emerging science, the EEA builds on the recognised System of Environmental Accountingⁱⁱ to set out the terms, concepts and accounting principles to be able to describe the value of benefits flowing from ecosystems using physical or monetary metrics comparable with those used in the internationally recognised System of National Accounts, such as GDP. As such, this value of natural assets – the natural capital - can be considered alongside other forms of capital.

Natural Capital Accounting is often described in two related, but separate parts. The first part, the Natural Capital Asset Accountⁱⁱⁱ, has already been completed and can be viewed at: <http://kentnature.org.uk/rural-green-economy.html>. This Asset Account provides a baseline of the extent and condition of Kent's natural assets; links these to the ecosystem services they provide; and looks at trends over time.

The next stage, which KCC and KNP are looking for support in developing, will be the Natural Capital Flow Account. This will quantify the goods and services flowing from these natural assets, identify beneficiaries and assign a valuation (either monetary or physical). This can also be presented spatially to show variations across the county.

By developing a County-wide *Natural Capital Account*, Kent is leading the way in developing more sophisticated approaches to environmental management.



	Extent		Condition	
	Past trend (1961-2012):	Anticipated trend (2012-2050):	Past trend (1961-2008):	Anticipated trend (2012-2050):
Woodland	↓	↔	↓	↔
Enclosed Farmland	↑↑	S	↓↓	↔
Semi Natural Grassland	↓↓	S	↓↓	↑
Open water, wetland, and floodplain	↓↓	S	↓↓	↑
Mountain, moorland, and heath	↓↓	S	↓↓	↑
Coastal Margins	↓	↓	↓	↔
Urban areas	↑↑	↑	↔	↑

↔ - Trend difficult to ascertain / variable

S – Stable

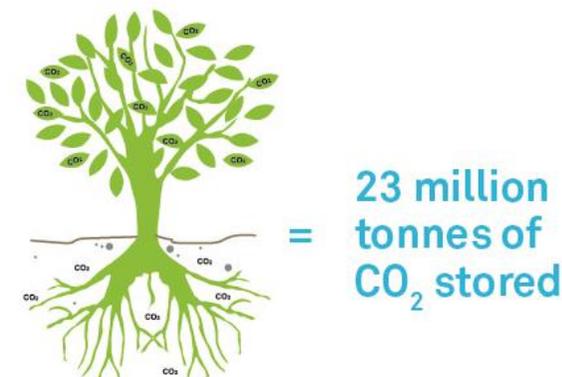
↓ / ↓↓ - Decrease / significant decrease

↑ / ↑↑ - Increase / significant increase

What is Kent Natural Capital?

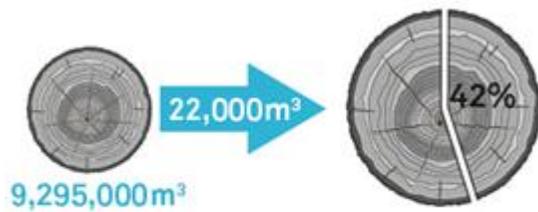
The Natural Capital Asset Account for Kent draws on the extensive Kent Habitat Survey 2012^{iv} and other local and national data sources to provide a baseline of the quantity and quality of natural assets in the county. The table to the left provides an overview of the changing habitat coverage. The table on the right highlights the expected trend of ecosystem service provision resulting from the changing land cover. The graphics highlight additional headline findings from the Natural Account Asset Check.

Vegetation and the first 15cm of topsoil in Kent store over 23 million tonnes of CO₂. The *Natural Capital Account* could inform understanding of the benefits and trade-offs from different types of land management, such as no till agriculture.



Over 4,550km of public rights of way wind through a variety of Kent's habitats. These routes provide better access to green space with numerous health and well-being benefits. They can also help reduce dependence on cars and support the visitor economy.

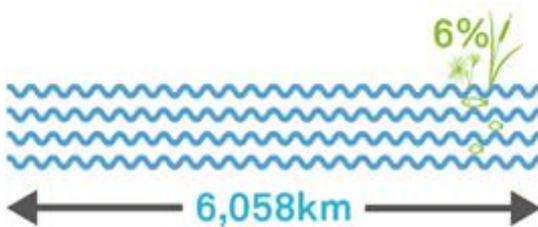




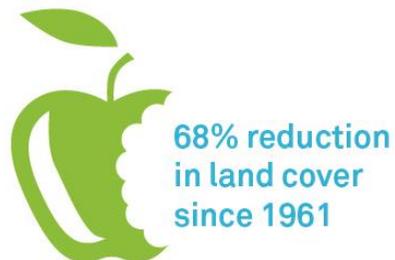
There is 9.3 million cubic meters of hardwood growing in Kent. Every year this expands by another 22 thousand cubic meters. However, only 42% woodland is actively managed, suggesting that there is potential for a greater return from Kent's wood stock and the biodiversity it supports.



There are 10,700km of hedgerows in Kent, providing important habitat connectivity. Like orchards and hops, hedgerows also contribute to the distinctive Kent landscape. This identity has a value in attracting inward investment from visitors and employers.



Out of the 6,058km of waterways in Kent, only 6% have good or high ecological status. *Natural Capital Accounting* could be used to help identify opportunities for improving river margins using mechanisms such as payments for ecosystem services.



Orchards and hops, quintessential elements of Kent's character and identity have declined in area by 68% since 1961.

Ecosystem Services		Past trend (1961-2012)	Anticipated trend (2012-2050)
Provisioning services	Crops	↑↑	↑
	Livestock	↑	↑
	Wild foods	↓	↔
	Drinking water	↓	↓
	Other water uses	↓	↓
	Timber	↑	↔
	Energy	↑	↑
Regulating services	Air quality	↑	↑
	Climate regulation	↑	↔
	Flood protection	↓↓	↓
Cultural services	Recreational	↑	↑
	Educational	↑	↑
	Heritage	↑	↑
	Aesthetic	↓	↓
	Existence	↓↓	↓↓

How can using a Natural Capital Account be beneficial for Kent?

Working at strategic landscape scale, the Kent Nature Partnership aims to restore natural systems in order to increase the flow of benefits to society and the local economy. The development of a *Natural Capital Account* builds on previous work, including the UK National Ecosystem Assessment^v and Kent's '*Securing the Value of Nature*^{vi}' by providing a local, Kent focused assessment of the sort of benefits these documents highlight. Like the KNP, the South East Enterprise Partnership and Kent and Medway Economic Partnerships support innovation and development of the rural economy. A *Natural Capital Account* could help unlock the value of different types of land management, attract investment by highlighting a broader spectrum of mutual beneficiaries and facilitate understanding of the contribution of the landscape to Kent's strong identity and visitor appeal.

A *Natural Capital Account* would provide a useful framework for monitoring and evaluating the implementation of Kent's Environment Strategy. Accounting for environmental good and services using defined physical or monetary terms in a consistent way can help track the impact of land cover changes over time and support the evaluation of risks and opportunities associated with different land use patterns.

For example, there is significant housing growth forecast for Kent and Medway, and the Local Economic Partnerships, Kent County Council and local authorities are focused on ensuring it is delivered in a sustainable way. A *Natural Capital Account* could be used to help identify the most valuable and most productive environmental assets so that the impacts of development on these can be mitigated as far as possible. It could also be

used to help demonstrate the value to communities of increased access to green space and improved air quality which support healthier lifestyles. Being able to utilise the preventative health and recuperative benefits of greenspace is also recognised as a key consideration for sustainability within Kent's Joint Health and Wellbeing Strategy.

The following text boxes provide a high level overview as to key areas where Natural Capital Accounting could help inform decision making, including

- Understanding the impact of land cover change
- Managing growth
- Supporting communities
- Supporting the land based economy
- Supporting sustainable water management
- Maximising the potential of woodland resources

Understanding the impact of land cover change

The Kent Habitat Survey – Land Cover Analysis^{vii} shows that there has been a significant change in land cover since 1961. This has occurred due to development as well as changes in agricultural practices. In some instances this has led to a loss of biodiversity but also opened up opportunities for greater productivity and variety in the produce grown.

The countryside and landscape of Kent are also frequently identified as important factors in visitors choosing to travel to Kent, helping to contribute around £2.4bn^{viii} to the local economy each year.

Opportunity

In making decisions and directing investment that influence land use change, it is important to recognise and understand which aspects are most important so as to not unintentionally erode the value they bring.

Role of Natural Capital Accounting

As NCA provides an indication of the relationship between land management and ecosystem service provision, trend analysis can be used to consider how changes in land cover could threaten or provide opportunities for future ecosystem service provision. For example, changing land cover might add or remove elements of the landscape and change its attractiveness to future visitors. In this way, NCA can be used to highlight trade-offs resulting from decisions around land management - e.g. the varying values of investing in different habitat types

Managing Growth

Development makes up around 17% of Kent's land cover. This has increased by around 62% between 1961 and 2008^{ix}, and with projections of about 150,000 new homes by 2032^x there is increasing pressure for further land cover change for development.

Opportunity

By directing development away from the most valuable areas, the impact on the value of benefits flowing from natural assets can be minimised. Where impacts are unavoidable, develop an approach to biodiversity offsetting that takes into consideration the location and beneficiaries of mitigation habitats. Equally important is the need to reduce the impact of growth on sensitive landscapes and the contribution the landscape has on the character of the County.

Role of Natural Capital Accounting

Can be used to develop county-wide (or area specific) understanding of the ecosystem services and their value from different land cover / habitat types. It could also provide an indication of ecosystem service 'hotspots' that might be particularly affected by development.

The aesthetic value of important landscapes can be taken into consideration by using measures of their visual appeal and the effects of the landscape on property prices and visitor movements.

Supporting Communities

Access to greenspace can deliver a wide range of community benefits. Furthermore, in April 2013 public health responsibilities were transferred to Local Government. As such the County and Districts have greater responsibilities for tackling the projected rise in incidents of cardiovascular and repository diseases^{xi}.

Opportunity

In addition to access to green space for enjoyment, recreation in green spaces has considerable health benefits. The natural environment can play a significant role in providing recreational, health and wellbeing benefits as highlighted by Kent's Joint Strategic Needs Assessment. As such, it is important to make good use of the existing natural assets and ensure new development provides adequate new green infrastructure.

Role of Natural Capital Accounting

Natural Capital Accounting can be used to reveal how particular habitats can lead to health benefits for communities through improved air quality. For instance, preliminary valuation work indicates that Kent's woodland provides around £73 million of benefit each year in avoided health related costs through air pollution regulation^{xii}.

It can also help track the recreational value of Kent's natural environment over time and could be used to as part of wider approach to understand links between accessibility to the countryside and the link to indices of multiple deprivation.

Supporting the land based economy

As the 'garden of England', Kent has a long proud productive history. Mechanisation and intensification of agriculture has however led to a reduction in habitat cover which has caused tension with the conservation movement, particularly in financially constrained times when maximising yield is paramount.

Despite the economic downturn the industry has, however, been working hard to utilise innovative technology and land management techniques to both maintain productivity and deliver environmental enhancements – often through the recognition and management of ecosystem service.

Opportunity

Innovation and diversification will be crucial to maintaining a competitive land economy. Demonstrating the broad range of benefits these advancements can deliver will also be key to attracting inward investment.

Role of Natural Capital Accounting

By tracking changes in ecosystem service provision such as changes in soil carbon stocks and agricultural yields (e.g. resulting from changes in land management practices) NCA can help to develop a broader understanding of the value derived from different types of land management. In turn this could be used to help shape investment in alternative practices base on this evaluation of increased value. In this way it can also help provide an evidence base to support funding bids, e.g. EU Life Funding, into alternative practices.

Supporting Sustainable Water Management

Kent's waterways play an important role in diluting the water discharged from water treatment plants. The health of the fresh water ecology affects the performance of this assimilation. The quality of waterbodies is declining, with only 6% considered to have a good or high ecological status^{xiii}; indicating that the capacity of waterways to fulfil this valuable function is being reached. There are a number of factors that could affect the health of the rivers, including diffuse urban run-off, the constrained sewer systems overflowing during rainfall events, agricultural run-off and the waste water discharge itself.

Growth and climate change are also likely to constrain the capacity of these waterways which, along with chalk aquifers, provide Kent with most of its drinking water.

Opportunity

Improving waterway health through sustainable urban drainage, enhancing riparian margins and proactive waterway enhancement will help maintain and increase valuable water cleansing functions. Cleaner water also is also more resilient to low flow conditions

Role of Natural Capital Accounting

Understanding the relationship between land cover and the quality/rate of recharge of aquifers and rivers will form an important part of their long term management. NCA can help to develop an understanding of habitat cover, nitrate vulnerability and aquifer/waterbody conditions to

help shape different approaches. The NCA could help highlight strategic opportunities for the development of Payment for Ecosystem Services schemes that incentivise changes in river management.

The NCA could also support Natural England work around woodland creation and flood risk management by tracking land cover changes in flood risk zones. It could also potentially work towards developing an understanding of the value created by protecting these areas, although this is currently an early concept and approaches are in their infancy.

Maximising the Potential of Woodland Resources

As highlighted above, only 42% of Kent's woodlands are currently actively managed and Kent's hardwood resources increase by 22,000 cubic meters per year^{xiv}. As such, there is potential to utilise more of Kent's woodland; whether as wood produce, biodiversity or in helping support the delivery of low carbon energy as highlighted by the Kent Renewable Energy Action Plan.

Objective

Increase the extent of woodland in active management and support the development of the wood-based market in Kent, such as the Kent Downs Woodfuel Pathfinder.

Role of Natural Capital Accounting

The NCA helps to establish the value of Kent's land-based products, including timber and woodfuel, so providing an improved evidence base for local initiatives.

Next steps in developing Natural Capital Account for Kent?

KCC and KNP are keen to develop an approach for integrating consideration of natural capital better into decision making. This commitment is highlighted in the emerging Kent Growth and Infrastructure Framework as well as the Kent Environment Strategy. The next step will be to develop a Natural Capital Flow Account so that the benefits of the services provided by the County's natural assets can be evaluated and mapped to their various beneficiaries. In order to do this, KCC and KPN are seeking support and funding from local partners. If you are interested in valuing Kent's natural capital and shaping the future of the County's assets please contact William Moreno William.moreno@kent.gov.uk

References

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- ⁱ United Nations (2014) *System of Environmental Economic Accounting 2012 Experimental Ecosystem Accounting*
- ⁱⁱ United Nations (2014) *System of Environmental-Economic Accounting 2012 Central Framework*
- ⁱⁱⁱ AECOM for Kent County Council and the Kent Nature Partnership (2015) *Natural Capital Account for Kent, Asset Account*
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- ^v UK National Ecosystem Assessment (2011) *The UK National Ecosystem Assessment: Synthesis of the Key Findings*
- ^{vi} Kent County Council (2011) *Securing the Value of Nature*
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- ^{ix} Assessing Regional Habitat Change (2012) *Kent Habitat Survey – Land Cover Analysis*
- ^x AECOM for Kent County Council (2015) *Growth and Infrastructure Framework*
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- ^{xiii} Ibid
- ^{xiii} Derived from Environment Agency (2014) *Water quality in protected area* [online] available at: <http://www.geostore.com/environment-agency>
- ^{xiv} Derived from multiple sources in AECOM for Kent County Council and the Kent Nature Partnership (2015) *Natural Capital Account for Kent, Asset Account*