

# Green Infrastructure in Cumbria

The role of green infrastructure in aiding the delivery of sustainable growth and regeneration in Cumbria



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# Executive summary

## Introduction

The Cumbria Green Infrastructure Forum commissioned Rebanks Consulting Ltd to undertake scoping analysis of the potential role of ‘green infrastructure’ and ‘ecosystem services’ in aiding the delivery of sustainable economic growth and regeneration in Cumbria (in December 2009). The research centred on a case study of the Bassenthwaite catchment, but also looked at the wider issues across Cumbria and the position of green infrastructure in economic development.

## What is ‘green infrastructure’?

Green infrastructure (GI) is a holistic approach to understanding and developing networks of natural assets within their landscape context that are maintained, enhanced or created to fulfil identified economic, social and environmental needs within an area. Green Infrastructure assets include a variety of open and green spaces and other smaller scale environmental components such as street trees. These assets can be considered at a landscape scale, such as within the context of a National Park; or at more local scales such as within the urban fabric of towns and cities. Green Infrastructure can deliver a suite of benefits. The type and quality of such benefits will be affected by the size, location, physical characteristics and connectivity of such assets to intended beneficiaries.

## Evidence

The natural environment provides a range of economic benefits. These benefits are derived from investment to maintain and/or enhance the green infrastructure of an area in order to sustain or boost its ability to deliver ecosystem services. The Natural Economy NW project has developed a checklist of 11 themes used to help communicate the economic benefits that green infrastructure can deliver. This checklist is used

in this report as a basis for setting out an agenda for further consideration of the potential future role of green infrastructure in broader strategy for economic development, regeneration and growth in Cumbria.

The nature of the economic benefits of green infrastructure can be considered as being direct, indirect, cost reduction or risk management related, although these categories necessarily overlap. This report focuses specifically on the direct economic benefits of GI and explores the nature of the relationship between Cumbria’s green infrastructure and its economy from the perspective of potential contribution to GVA. It should be noted that the report has a focus on green infrastructure in a broad Cumbria context with a more specific high level review of some issues relating to the GI agenda for two key locations of Carlisle and Barrow.

The Annex (Case Study) report on the Bassenthwaite Lake Catchment is a more detailed assessment and looks at how the 11 economic benefits of the GI checklist can be used to help identify and communicate the direct economic benefits of the Bassenthwaite Lake Catchment ecosystem services.

The form of assessment undertaken therefore must be seen as a limited analysis that seeks greater clarity of economic impacts of GI in Cumbria and its relationship to direct measures such as GVA. It is important to note, however, that there is increasing recognition that a fuller economic valuation of ecosystem services would require alternative approaches that would result in broader economic assessments more in line with wider sustainability and wellbeing thinking.

## Analysis

The functional value of green spaces depends heavily upon their scale, form, quality, and location. It also has a complex relationship with

the market economy. There are two powerful arguments for the role of green infrastructure and ecosystem services in the Cumbrian economy: the first is about them **underpinning and sustaining** the economy (by providing the basic infrastructure and resources for the economy), and the second is about a **direct contribution to economic growth and development**.

We believe these are two different arguments and best made separately, often to different funders. We would also encourage the champions of the GI approach to **develop specific strategic proposals for Cumbrian communities**, or this debate can descend into an overwhelmingly academic discussion about the rights-and-wrongs of the principles underpinning economic growth.

There is widespread agreement of the ‘underpinning’ argument – i.e. that the economy needs to be underpinned by healthy and well-functioning eco-systems. But this does not translate into actual investment from funders whose primary goal is direct economic outcomes. If that is the goal, then a new approach is required from environmental practitioners that is explicitly about direct measurable economic impacts in strategic locations. But many environmental initiatives are perhaps best justified and explained in non-economic terms. Applying an ‘economic argument’ inappropriately can result in a law of diminishing returns and credibility.

Green infrastructure plays a key role in making the Cumbria economy more resilient to risks and challenges. The November 2009 flooding occurring in the Bassenthwaite catchment and downstream resulted in c. £200 million of damage. Significant opportunities exist to better plan for the future to ensure that the outputs of green infrastructure both better underpin and sustain the current economy, but also opportunities to directly bring about positive changes in other communities where the need is greatest. However, if the argument is to progress from underpinning to directly

contributing to growth then new partnerships, and investment models, are required that involve investing in green infrastructure to create direct economic outputs.

One of the key challenges for champions of green infrastructure in Cumbria is the fact that the debate in Cumbria is quite different to that in many other more urbanised regions. In urban areas with limited green space it is relatively easy to convince people that additional or better quality, green spaces can improve the quality of life, sense of place or assist with attracting investment. Cumbria’s wealth of green infrastructure and relatively poor economic performance make the argument more complex. Cumbria often lacks the high quality economic infrastructure to maximise the value of its green infrastructure.

The economic outputs associated, directly or indirectly, with the natural environment are of considerable value: for example, Cumbria attracts 15.3 million visitors, which bring in £1.17 billion to Cumbria’s economy and provides employment for 20,575 full time equivalent (FTE) posts. But green infrastructure also defines how places are experienced and perceived, and this can be equally important to economic development.

## Issues and challenges

Future green infrastructure initiatives aimed at direct economic benefit should be targeted to addressing the following issues:

**Positively changing internal and external perceptions of Cumbria, and particularly those communities which have the greatest need of investment and development**

**Providing high value experiences/products that can unlock economic value from landscape or biodiversity to positively affect the relatively low GVA rural economy, with wage rates 20-30% below UK averages**

**Providing high quality employment, particularly for young people in Cumbrian communities**

**Addressing disparities in prosperity, health and wellbeing across Cumbrian communities and particularly improving the quality of life for residents of communities suffering from multiple-deprivation**

**Supporting the productive private-sector elements of the economy which have a landscape management role, to underpin the environment with a sound and sustainable economic infrastructure**

**Reducing the risks and costs of negative environmental events like flooding and climate change – the November 2009 floods had a cost of £200 million**

Key to doing these things effectively will be better targeting of environmental initiatives to ensure they are of the most appropriate scale, form, and quality, and located in the optimum places to achieve these goals.

## Conclusion

Cumbria's landscapes contain a range of green infrastructure assets that deliver a substantial set of ecosystem services that both contribute directly to, and underpin the economy of Cumbria. However, the county faces a situation of both disparity of provision, and vulnerability of maintenance. The Bassenthwaite Lake Catchment case study reveals that there are structural disconnections between the ecosystem services provided by the landscape and the economic business activity which manages that landscape which suggest that continued provision of the identified environmental benefits is vulnerable to agricultural commodity prices and potential changes in public investment through farm payments and agri-environment schemes.

In addition to that, whilst it is clear that GI offers potential to support the delivery of regeneration and growth strategy in places such as Carlisle and Barrow, there are cultural and perceptual issues that appear to be inhibiting the development of better vision for the future that incorporates and recognises the role that GI

could play in the future development of key growth and regeneration spots in the county. For example, the language and ideas underpinning GI is very much an 'insider dialogue'.

Overall, there is need for Cumbria to consider in more depth the role that improving quality of environment can play in the future improvement of quality of life and place across Cumbria to sustain existing valuable landscapes and address issues around disparity of provision and accessibility of high quality natural environments that exist for many Cumbrian communities.

There are real opportunities to unlock even greater social and economic benefit from Cumbria's 'green assets' in the future through more effective investment and targeting of environmental enhancements and initiatives, e.g. through projects that create health benefits for communities suffering from multiple-deprivation. There are still huge disparities between the benefit that more affluent communities get from Cumbria's high quality green spaces, like the Lake District, and the benefits experienced by less affluent communities in more urban settings, in places like Barrow or Carlisle. The economic benefit created by this landscape is realised through the workings of a complex relationship with tourism, agriculture or other economic activities. So meaningful discussions about how environmental improvements can provide the greatest economic benefit necessarily need to address the wider socio-economic issues.

We recommend that rather than Cumbria Green Infrastructure Forum developing a Green Infrastructure Strategy as a next step, it focuses instead on embedding this agenda into a holistic economic vision and strategy for Cumbria and its communities (reconnecting it to other agendas). If this can be achieved then Cumbria has an opportunity to develop a powerful and progressive economic vision that has environmental and landscape issues at its heart.



# Introduction

## The Brief

This research, analysis and report was commissioned in December 2009 by the Cumbria Green Infrastructure Forum, a partnership of national and regional agencies, local authorities, regeneration bodies and other key players involved in the delivery and development of green infrastructure. The Cumbria Green Infrastructure Forum has been tasked by its members to produce a framework for green infrastructure delivery in Cumbria. The commissioning agent was Cumbria County Council. Funding was provided by Natural England and Natural Economy North West.

This report was commissioned to serve as a scoping document on the potential role of green infrastructure in aiding the delivery of sustainable economic growth and regeneration in Cumbria. The research has been based on interviews with key policy makers and existing evidence from across Cumbria, the North West, and the rest of the UK.

The brief called for a scoping study that would explore how green infrastructure might play a more active role in economic development.

The detailed case study was requested to illuminate the issues in more detail for one area of Cumbria. The deteriorating quality of Bassenthwaite Lake and its impact not only on the ecosystem but also species as well has resulted in investment by the Defra agencies through such projects as Restoring Bassenthwaite and, Bassenthwaite Reflections. The case study examines the way improvements to the quality of the lake will directly contribute to economic benefits as set out in the 11 economic benefits defined for green infrastructure by Ecotec (2008) and adopted by the North West Green Infrastructure Think Tank (2008). The case study is appended to this report but is also intended as a stand alone document in its own right.

## Project Objectives

The project was tasked with addressing the following questions.

1. What is going on in the target areas? Identify the key drivers for growth and regeneration in the selected project target areas and review their main forces for change – major schemes and their planning and policy relevance. What opportunities exist for green infrastructure initiatives within these schemes and how might they improve the quality of schemes?
2. What role can green infrastructure play in enabling more multi-functional benefits to be derived from already planned growth and regeneration initiatives? Using existing good practice in green infrastructure planning in the NW, reviewing and identifying the key role that green infrastructure might play in helping to ensure that change in the target areas embraces environmental enhancement and resilience to deliver quality of place and quality of life outcomes through investment in improved quality of environment.

3. What is the role for green infrastructure in Cumbria for developing resilience to the impacts of climate change such as increased severe weather events and flooding? Is this being considered within the developing plans and policies of the relevant authorities and agencies?
4. What is the current relevance and profile of green infrastructure within the developing policy framework of the key areas?
5. What are the functional and thematic relationships between the different areas of Cumbria? Review the collective of environmentally related initiatives operating within Cumbria and identify any important linkages, environmental/economic links, and ecosystem service links and develop a high level understanding of the wider planning and investment needs of wider land management to maintain and/or strengthen these links.
6. Why is there a discrepancy between a visitor economy that underpins much economic health in Cumbria, benefiting both the private and public sectors, and basic environmental stewardship which is largely carried out by the voluntary sector or as a poorly resourced by-product of farming? How can the roles of the sectors merge and better reflect commitment to the benefit of all?
7. What are the likely risks to Cumbria of not adopting a green infrastructure approach in planning, economic development and ecosystems services delivery?

The projects overall approach is based on the eight principles of green infrastructure planning, design and implementation as set out in the *North West Green Infrastructure Guide* ([www.greeninfrastructurenw.org.uk](http://www.greeninfrastructurenw.org.uk)).

## What is Green Infrastructure?

Green infrastructure is an important part of sustainable economic development, creating or supporting attractive communities where people live, work, play and visit. It has the potential to contribute to a number of different local, regional and national strategies. The function of green spaces depends heavily upon their scale, form, quality, and location. It also, as we will see in this report, has a complex relationship with the market economy that is sometimes evident through transactions, whilst at other times it provides an underpinning non-transaction role in sustaining the economy. The concept of green infrastructure embraces all undeveloped open space from unenclosed commons to roadside verges but specifically includes the following environmental assets...

Parks and public gardens

Moorland

General amenity space

Agricultural land

Outdoor sports facilities (incorporating hard surfaces and school playing fields)

Allotments, community gardens and urban farms

Woodland

Cemeteries, churchyards and burial grounds

Water courses

Derelict land

Grassland and heathland  
 Private gardens  
 Coastal habitat  
 Roadside verges  
 Seascapes

The concept of green infrastructure looks at viewing these elements as a network of multi-functional spaces, with important ecological, social and economic linkages. These environmental assets represent a complex ownership pattern, ranging from publically owned spaces, to privately-owned and managed landscapes, so proposed changes need to be clearly communicated to a range of stakeholders with appropriate incentives to encourage its management and enhancement. The following table demonstrates the functions of green infrastructure:

Functional Category	Functional analyses
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Flood alleviation</li> <li>• Air quality amelioration</li> <li>• Biodiversity</li> <li>• Renewable energy</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>• Food production</li> <li>• Labour productivity (recreational benefits)</li> <li>• Labour productivity (visual benefit)</li> <li>• Image and investment</li> <li>• Contribution to regeneration</li> <li>• Contribution to tourism</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>• Recreation and amenity</li> <li>• Access to accessible natural greenspace</li> <li>• Health</li> <li>• Education</li> <li>• Cultural heritage</li> </ul>
<b>Multi-functionality</b>	<ul style="list-style-type: none"> <li>• Potential multi-functionality derived from greenspace location and physical characteristics</li> <li>• Potential for additional functions through physical interventions</li> </ul>

**Figure 1 Source: A Guide and Toolkit for Green Infrastructure, East Midlands Development Agency, created by AMION Consulting**

Green infrastructure is often seen as something that is relevant in urban and urban fringe areas only. When viewed from the viewpoint of local deficit it is likely that the greatest need for new resources and existing asset enhancement will be in such areas. It is also true that often the greatest additional benefit will be derived from green infrastructure in urban and semi-urban areas. The recent report on the use of green infrastructure to mitigate and adapt to climate change in north west England, noted that the ‘climate change services’ that can be derived from green infrastructure are most numerous in urban areas. Also it is often in such areas that green

infrastructure will have most multi-functionality<sup>1</sup>. A more holistic view, however, recognises the importance of the often abundant green infrastructure that lies between urban areas as well as that within them. This can be equally important for providing services to the urban populations as well as to the local rural population. In this report we have taken this more holistic view and examine the benefits to be derived from the green spaces around urban areas and those lying further afield that may underpin aspects of county-wide economic activity and in some instances have a regional impact too. Green infrastructure is a key part of the emerging North West regional approach to strategic planning as set out in the 4 North West and North West Development Agency's statement of priorities and framework for activity, *Future North West: Our Shared Priorities* (penultimate draft June 2010).

## Our Approach

Our research was commissioned to provide a foundation for a new dialogue between environmental organisations and practitioners and those working on economic development within Cumbria. Although initially intended to provide an advocacy document our research indicated that what was required was a mechanism to assist these sectors in reaching some common ground with regard to green infrastructure. It is not an academic study measuring ecosystem service outputs or modeling how they might hypothetically be valued<sup>2</sup>, but is a more practical assessment of the link between these two things in a Cumbrian context taking existing evidence and existing models that are appropriate to this task.

In our case study of the Bassenthwaite catchment we have taken a highly pragmatic approach which is based primarily on looking at measurable economic impacts that affect the traded economy. There is increasing international interest in alternative approaches that seek to maximise, not traded wealth but economic welfare on a broader and more sustainable basis<sup>3</sup>. Gross Value Added (GVA) is, arguably, not the most effective way of assessing environmental outcomes as it does not take account of environmental and social capital<sup>6</sup>. But our methodology necessarily focuses on the economic baseline, looking at proposed interventions and looking forward where possible at the impact and beneficiaries. We have also included a focus on whether the economic infrastructure has the potential to effectively unlock the economic value modeled. We are keen to root this discussion in the economic realities of Cumbria and ensure that potential economic impacts are seen within the context of the capacities of the economic as well as the green infrastructure<sup>4</sup>.

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<sup>1</sup> NWDA Green Infrastructure: How and where it can help the Northwest mitigate and adapt to climate change (2010)

<sup>2</sup> The reader looking for such analysis can find it in the following sources: *No Charge? Valuing the Natural Environment*, Natural England (2009), *Economic valuation of upland ecosystem services*, Natural England Commissioned Report NECR029 (2009), *The Social and Economic Value of the UK's Geodiversity*, Research Report Number 709, English Nature (2006), and *Strategic Review of the South Solway Peatlands for People; review, business plan and feasibility study*, Natural Economy North West (2009).

<sup>3</sup> Readers wishing to learn more about this challenge to GDP as a measure should read 'The GDP Paradox', Jeroen C.J.M. van den Bergh, *Journal of Economic Psychology*, 30 (2009)

<sup>4</sup> E.g. much of the literature on the economic value of ecosystem services creates impressive figures for hypothetical economic impact through tourism or citizen willingness to pay for items without explaining or

These other economic valuation tools are also slightly flawed as a basis for discussions with bodies responsible for economic development in that they often model hypothetical value for future developments without providing any proof that the output (e.g. increased tourism) can actually be turned into desirable economic outputs through the existing economic infrastructure (e.g. whether the increase in tourism be strategically beneficial or relatively low value activity with low wage seasonal jobs). These methodologies are interesting indicators of the economic contribution of the environment but we consider they are too different from how other elements of the Cumbrian economy are currently measured to initiate a successful dialogue between the environmental and economic development communities<sup>5</sup>.

Consequently, we have not used economic valuation tools based on ‘replacement costs’, and ‘factor income’; except where current evidence exists of an economic benefit. We have also avoided using ‘travel cost’ as a measure of the economic value as it seems to us a poor way of measuring the value of the ecosystem services concerned. We have not used ‘contingent valuation’ in this report; for two simple reasons, 1) too little data exists concerning the alternative experiences/products for which visitors to Cumbria might be willing to pay, and 2) there is a difference between those notional experiences for which people claim a willingness to pay and the actual experiences for which they will pay. Because we have focused on the measurable economic benefits for which data exists in our case study area our findings have a particular focus. The ecosystem benefits whose economic benefit is most difficult to measure are given less focus – we would suggest that the initial focus of that dialogue are those ecosystem services which are best evidenced and most directly linked to recognizable existing economic activity. But we acknowledge that most of the ecosystem services need to be in place and functioning well to underpin sustainable futures.

We have, where appropriate and possible, used ‘hedonic pricing’ as a measure of the extra prices people will pay for access to this landscape through housing, land, or other products. But have been careful to put this into socio-economic context. We have occasionally looked at ‘avoided cost’ because the November 2009 flooding provides relatively sound data on the potential cost benefits of flood alleviation<sup>6</sup>. There are compelling arguments for viewing enhancements to Ecosystem services as an investment in making the whole landscape more resilient and robust for the future, sometimes, as with flood alleviation, this appears to be a very direct linkage with a very measurable cost, but at other times the impact is so incremental and so long-term that the economic impact will almost certainly be negligible and we have judged it beyond the scope of this study. Nothing in this report should be read as casting doubt on the importance of sustaining biodiversity or making ecosystems more resilient to climate change or

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analysing the economic infrastructure’s potential to make this real. Bergh, JCM (2009) The GDP Paradox. *Journal of Economic Psychology* 30(2): 117-135

<sup>5</sup> To properly contextualise such questions you would need to look at whether people were also willing to pay more for other social, economic or cultural interventions and assess these findings in a socio-economic context.

<sup>6</sup> Very little sound catchment-specific evidence exists by way of cost estimates for flood alleviation measures upstream, or even to prove that measures in the catchment could actually reduce downstream flooding sufficiently to prevent or significantly reduce the impact of such events in the future.

other challenges – but the direct present-day economic focus of this work means we necessarily have focused on the significant measurable economic issues and weighted our attention to those issues of greatest economic scale, especially in terms of GVA.

Much of our analysis uses the measure of Gross Value Added (GVA) productivity because this is the primary measure of economic performance in the UK at present, and is the measure most well understood by economic development professionals. GVA, however, is not necessarily the best way of measuring the full value of two of the most significant Cumbrian green infrastructure based economic activities, tourism and agriculture. For example, the total annual GVA for all agricultural produce and activities in England in 2008 was £4,369m whereas the total market value was £10,316m<sup>7</sup>. Using GVA as a measure of environmental contributions is difficult and most commentators agree it has limitations. Both *Future North West: Our Shared Priorities* and UK Government Sustainable Development Strategy (*Securing the Future, 2005*) make quite clear that GVA is not the only measure of success, and that a high GVA economy also requires investment to sustain and enhance its often less directly productive environmental assets.

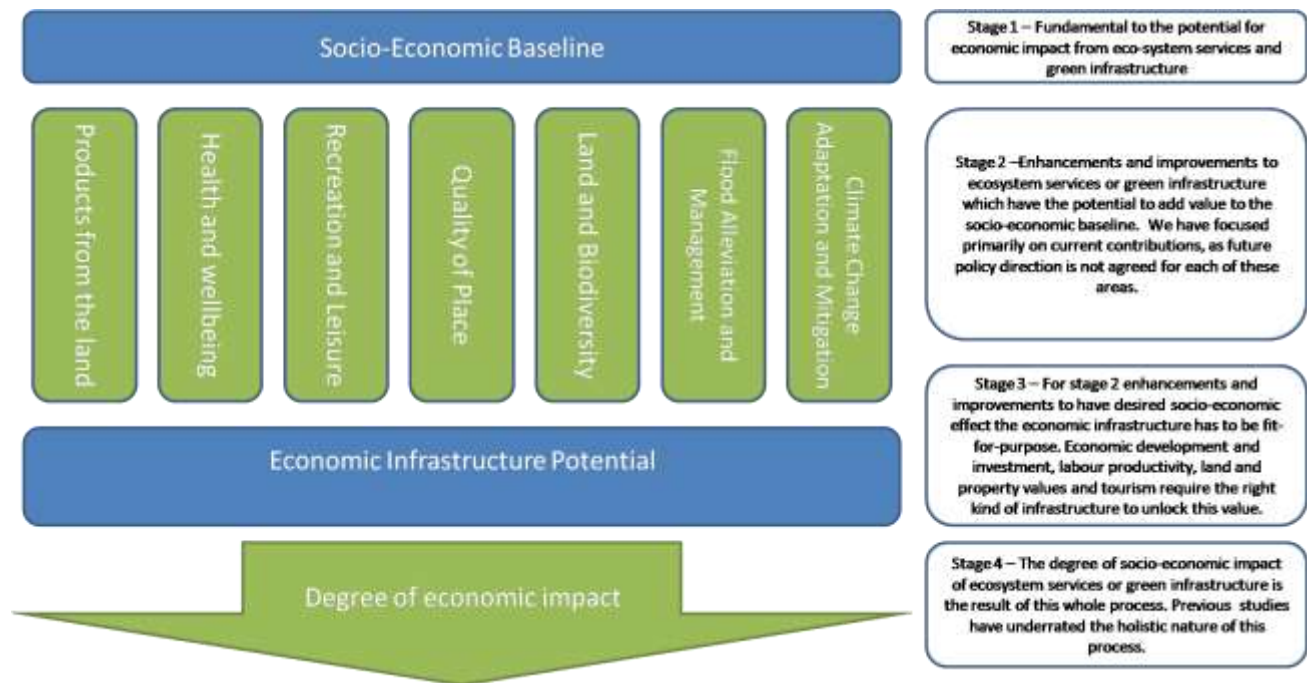
There is more to life than GVA productivity, and there are many other powerful and compelling arguments for investing in environmental improvements and enhancements whether they deliver economic growth and productivity or not. However, this research was unashamedly targeted at the direct economic value of green infrastructure in terms of contribution to GVA or in other economic measures.

## Our Model

We have created a relatively simple model for explaining the issues we have encountered in this report. We have worked with the Natural Economy North West 11 economic impact areas for green infrastructure, but have recognised that some of these 11 areas are ecosystem services (stage 2 in diagram below), whilst others are the benefits that flow from ecosystem services, or the mechanisms that unlock their value (stage 3 in diagram below). The ecosystem services are **products from the land (food and fibre), tourism, health and well-being, recreation, quality of place, biodiversity, flood alleviation and climate change and mitigation**. The others are **economic development and investment, labour productivity, or land and property values**. Key to our understanding is to relate environmental projects and interventions to the socio-economic context in which they are located.

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<sup>7</sup> Jacobs 2008, Valuing England's Terrestrial Ecosystems Services



**Figure 2 The economic infrastructure is critical to any understanding of the economic outputs of ecosystem services**

Lots of environmental modeling of environmental goods remains disconnected from the economic geography of the areas concerned. But how much green infrastructure or ecosystem services can enhance the economy of any given area is highly dependent upon the socio-economic baseline and potential (**Stage 1** above). Economic context is everything in this debate. Previous analysis done by the Forestry Commission suggested that three variables are critical: location, accessibility and multi-functionality<sup>8</sup>. In practical terms this means that communities with high levels of employment and economic activity in high value sectors will have limited strategic need for seasonal relatively low value tourism jobs - whereas communities with high unemployment and low wages might deem the same job a welcome boost and a step forwards<sup>9</sup>.

Whilst green infrastructure and ecosystems are full of potential economic value (**Stage 2** above), that if developed holistically can be economically beneficial, the potential value is dictated overwhelmingly by the socio-economic infrastructure of local communities (**Stage 3** above). Healthy ecosystems don't automatically result in better health and well-being; they need a lot of human effort, investment and infrastructure to translate effectively. Some of the most deprived communities in Cumbria live in close proximity to some of its most amazing natural landscapes, for example the wards of Barrow in close proximity to the stunning coastal environment of

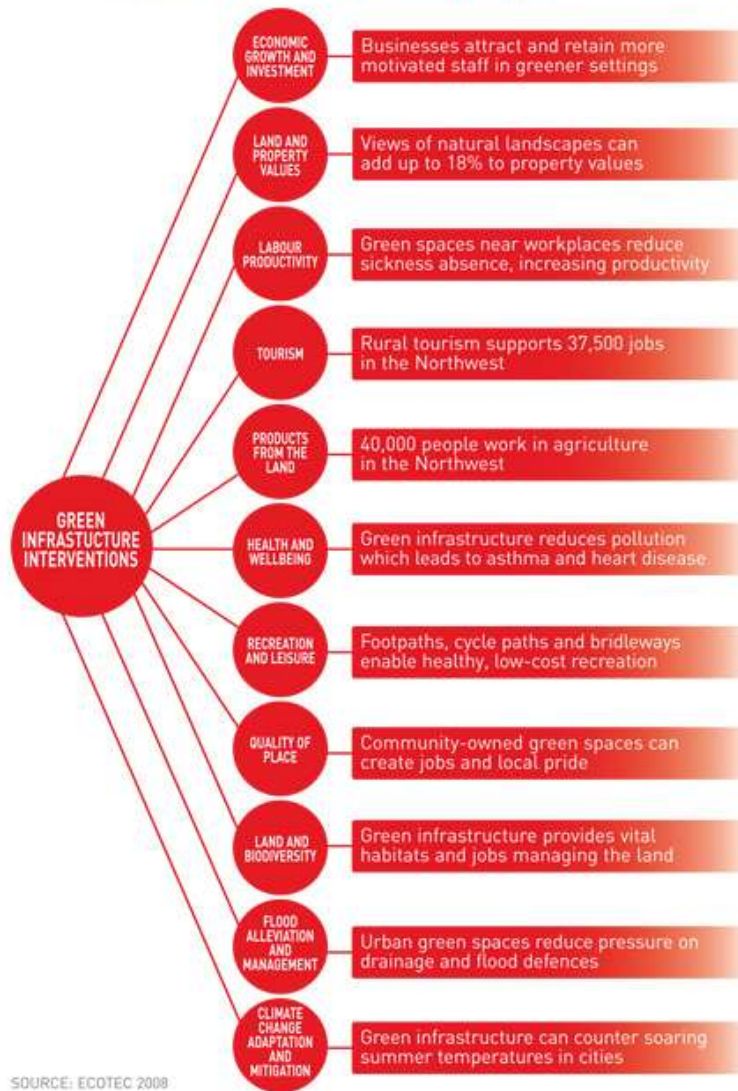
<sup>8</sup> We agree with this but would emphasise that 'location' and 'multi-functionality' should include the relationship with the economic geography that can unlock value. An Introduction to the Public Benefit Recording System (PBRs), courtesy of Keith Jones, Forestry Commission

<sup>9</sup> Another example would be that farmers with significant acreages of extensively grazed fell land might benefit significantly from the likely modest return per hectare from future carbon capture schemes - more intensively stocked farms with smaller acreages might find the same return per hectare an unnecessary restraint on their productivity for too little overall reward and avoid initiatives of this kind.

Walney Island. Whether ecosystem services or green infrastructure enhancements have a positive effect on **economic development and investment, labour productivity, or land and property values or tourism** almost entirely depends upon whether the economic infrastructure of local communities is fit for purpose.

The brief requested that the benefits of a green infrastructure approach to economic development initiatives in Cumbria be considered under the 11 economic benefit areas identified in the ‘Economic Value of Green Infrastructure’ report commissioned by the Natural Economy North West Steering Group. Those economic benefit areas are as follows:

**Figure 1: The economic benefits of green infrastructure**



At a landscape scale these are necessarily complex discussions and touch on a range of issues.

We begin with a review of the needs and opportunities for green infrastructure in Cumbria, concentrating on Barrow and Carlisle. This along with the case study on the Bassenthwaite catchment form the background to an overview of the 11 economic benefits at a Cumbrian scale.

# Review of green infrastructure needs and opportunities

Natural Economy North West's study of green infrastructure solutions to 'Pinch Point' issues in the North West<sup>10</sup> highlighted those areas where there was greatest need for green infrastructure to address environmental risks that could impede economic development. The pinches were risks of environmental impacts or risks to economically beneficial activities dependent on the environment. The pinch points were those places likely to be the focus of most economic development in the immediate future. In Cumbria the principal concerns were risks of flooding, coastal storms and inadequate water supply, which given the occurrence of major floods and drought orders between November 2009 and July 2010 seem valid. Those places most likely to experience economic growth and with the greatest number of pinches were the west Cumbrian coast between Maryport and Whitehaven, Barrow and Carlisle and it is the latter two that form the focus of our review of needs and opportunities.

## Green infrastructure as a driver for change in Carlisle?

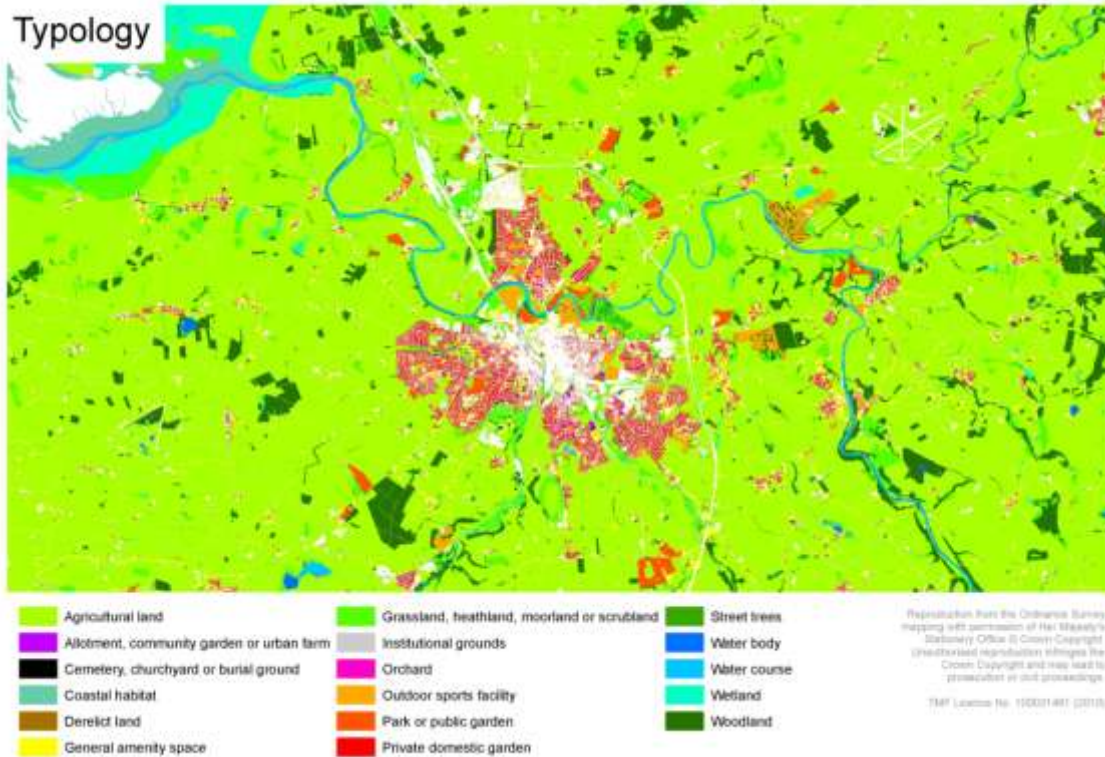
Carlisle is a fascinating city in which to explore the potential value of green infrastructure. The city is home to 100,000 people, and as one of the UK government's 'growth points' plans are being developed for another 20,000 residents in the next 20 years. This is based on new housing sites being opened up around the city and new investment in infrastructure. Key to the future is Carlisle's proximity to the M6 corridor with three different junctions on the M6. The city is home to the University of Cumbria, and plans exist for the development of Carlisle airport. Carlisle is clearly a critical area for the economic development of Cumbria.

Much of urban Carlisle, however, reflects the industrial nature of the city for much of the past two centuries<sup>11</sup>. The city's identity and infrastructure is in many ways stuck in an industrial paradigm that may not meet the needs for the future.

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<sup>10</sup> North West Green Infrastructure Unit (2009) Green Infrastructure Solutions to Pinch Point Issues in North West England

<sup>11</sup> A great deal of research and analysis has been done of Carlisle's economic issues in the past 5 years, and we do not propose here to duplicate that work. See Carlisle Renaissance website for a range of reports on Carlisle's economy - <http://www.carlislerenaissance.co.uk/pdf/Carlisle%20Economic%20Strategy%20.pdf>



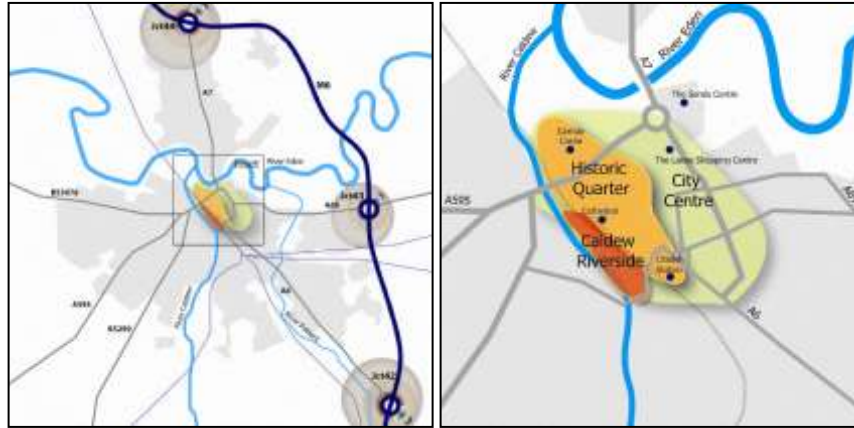
**Figure 3 Carlisle is located in close proximity to some of the UK's finest landscapes, the countryside reaches right into the heart of Carlisle and offers an opportunity for designing and planning for a great 'green city'. Source: graphic developed by Mersey Forest Partnership**

We believe that Carlisle has the potential to benefit greatly from an economic vision that maximises the benefits of its green infrastructure. In summary, we think the opportunities are as follows.

- There is the potential in the long term to create a great modern 'green city' that reflects it being the capital or 'gateway' for a county known for the quality of its landscape and environment
- There is potential to use high quality green infrastructure to change perceptions of the city held by residents, and potential investors and workers – Carlisle will need to attract new sectors, investment and workers in the future
- Green infrastructure has powerful potential to improve the quality of the life for the city's poorest residents, by transforming its most deprived areas
- Green infrastructure has the potential to impact powerfully on the health and wellbeing of the poorest and least healthy residents of Carlisle

Carlisle, like many similar northern cities, exists in close proximity to some exceptional designated landscapes – including the Roman Frontier UNESCO World Heritage Site (Hadrian's Wall) the Solway Coast Area of Outstanding Natural Beauty, the North Pennines AONB and European Geopark and the north eastern fells of the Lake District. The city also has a large rural hinterland. In terms of natural assets Carlisle is blessed, but as we have seen (see map of

deprivation in Cumbria earlier in this report) Carlisle is also one of those areas of Cumbria with the greatest density of communities (wards) suffering from multiple deprivation and ill health. It is a case study of the point made elsewhere in this report of proximity to high quality landscapes not necessarily resulting in benefit to the least affluent communities.



**Figure 4 The Rivers Eden and Caldew define Carlisle and still form an important part of the city’s economic geography. Source: Derived from Ordnance Survey map © Crown Copyright. All rights reserved Carlisle City Council LA0100024459. 2009.**

If Carlisle is to reach its potential over the next 20-50 years then arguably it needs an ambitious vision for what it wants to be, and stakeholders need to implement that vision to the level of quality required. We think Carlisle’s vision should reflect the fact that it is a gateway city to a series of great landscapes – we believe that future visitors, workers and investors will arrive in Carlisle with expectations of the city that will reflect its proximity to the Lake District, the Solway and the Hadrian’s Wall corridor. To meet this expectation it will be necessary to have a city that looks and feels fundamentally different – less industrial (or less post-industrial), less grey, more green, with higher quality housing stock and public spaces, and the offer and potential for a high quality of life in one of Britain’s most rural cities. It should feel a like a city where you are never more than a few minutes from the countryside.

In summary, we think Carlisle can and should differentiate itself from a host of similar post-industrial northern cities by being a great green city, where the countryside flows into the heart of the city itself.

The current picture is not all negative by any means: Anyone who has ever lived in Carlisle will be aware that many residents of Carlisle, in communities like Denton Holme and Stanwix already benefit greatly from access to the river corridors for the Eden and Caldew. Many areas of Carlisle offer good access to the countryside and a range of green spaces including playing fields, children’s play areas, footpaths, cycleways, community gardens, and allotments. There is anecdotal evidence to suggest that communities like Denton Holme have attracted growing numbers of young professionals because of relatively affordable house prices and proximity to

the river corridor and the lifestyle opportunities this potentially offers<sup>12</sup>. The river corridors have defined Carlisle historically and continue to provide one of the distinctive elements of Carlisle's character. Carlisle also has a number of former industrial or manufacturing sites that have become through benign neglect high quality wildlife habitats, the river corridors can form a green ribbon that links these habitats.

Other areas have much less green infrastructure and poorer access to the countryside that surrounds Carlisle. Communities like Currock or Botcherby are defined by quite dense red brick terraced housing stock or post-war housing stock, have minimal high quality green infrastructure and are somewhat disconnected from the wider countryside. There has a real need for intelligent design and planning that incorporates green infrastructure into the future of these communities. But there is also a powerful need for environmental organisations to focus learning and life skills projects in a targeted way on those communities that have become culturally disconnected from the environment – providing green spaces is not enough if the ambition is to impact on health, support is also required to help people develop the lifestyles that will turn this potential into healthier and more active communities.

These ideas are not unknown to those organisations looking to support economic development in Carlisle: There are, for example, already plans to 'green' the main arterial routes into the city to change the aesthetics and feel of the city as it is entered. The plans for the new campus for the University of Cumbria included better use of the river corridors and green spaces. Green infrastructure is acknowledged by almost everyone who is involved in the future of the most deprived communities as being part of the solution to raising the quality of life and the housing stock. But there is perhaps scope to plan holistically across the city and its green assets to ensure that the potential for Carlisle is realised by building on its unique strengths. To realise its potential Carlisle needs a lot more than just green infrastructure alone, but it does form an important part of how it can realise its potential.

There is, in short, an important role for green infrastructure in ensuring that the growing city reflects future expectations rather than offering a disappointing northern post-industrial 'clone' city. Distinctiveness does attract investment. A greener city with better physical and intellectual access to open space and biodiversity within and around the city, more green spaces, more trees and better connected networks of green assets will assist in an improved sense of place and happiness, should have health benefits provided support is given to modify lifestyles, and may assist with adaptation to climate change. None of these may produce direct economic benefits but a study undertaken for the NWDA demonstrated that there was a link between green infrastructure interventions and increasing GVA.<sup>13</sup> Improved quality of life, better health and an improved environment for development do underpin the framework that leads to increased GVA even if they do not contribute directly.

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<sup>12</sup> Revealed in discussions with Carlisle estate agents. The author lived in Denton Holme for two years in 2003-5 and was surprised to see more wildlife whilst living there than he was used to seeing in rural Cumbria – including regular sightings of otters, kingfishers, barn owls, badgers, and foxes. This is one of the joys of living in Carlisle, but is contrary to the perceptions of most non-residents who often assume a rather grim northern post-industrial city.

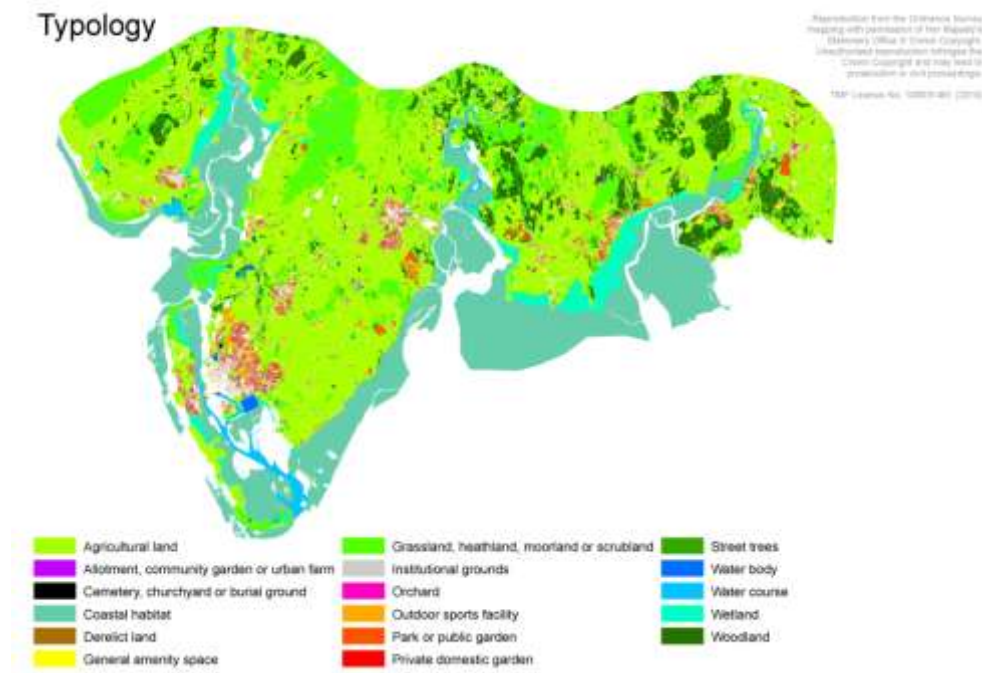
<sup>13</sup> AMION 2008, The Economic Benefits of Green Infrastructure – an Assessment and Framework for the NWDA



**Figure 5 Green infrastructure mapping shows just how much of Carlisle is made up of GI of one kind or another, and how the surrounding countryside reaches into the heart of the city.**

## Green infrastructure as a driver for change in Barrow?

Barrow-in-Furness is one of the most important economic centres in Cumbria with more than 70,000 residents in the Borough. Barrow is undergoing significant economic change. The town is the ‘Gateway to Britain’s Energy Coast’, is home to a significant manufacturing sector including the second largest shipbuilding construction complex of its kind in Europe (BAE Submarine Solutions). In Barrow 23% of all jobs are in manufacturing. Barrow, like Carlisle, is identified as a strategic area where new development is required. Major development projects include ‘The Waterfront – Barrow’s Energy Coast Business Park’. Barrow also provides a fascinating example of a community that has a complex and potentially powerful relationship with its green infrastructure.



**Figure 6 If you were looking for a site for a town where people would benefit from the natural environment it would be hard to find somewhere more perfect than Barrow. Within minutes of leaving Barrow town centre you can be amidst stunning seascapes or the Lakeland landscapes.**

Barrow also suffers, like many other comparable urban communities, from some tough socio-economic challenges resulting from the decline of, or transition from, its traditional industrial economy – with a number of wards in the Borough suffering from deprivation. In short, Barrow is the kind of town where people are likely to be less concerned about the environment than employment and job security. As some of the most deprived wards in Barrow are just a few minutes walk or drive from some of the most beautiful seascapes and Lakeland scenery in Cumbria there is a degree of scepticism about the economic value of the environment.

There is an underpinning of reality to this scepticism (as we have argued elsewhere in this report, the economic outcomes from the environment are almost entirely dependent upon the quality and scale of the economic infrastructure). The economic development professionals

interviewed as part of this research were keen to emphasise that whilst they support the concept of green infrastructure being important, the primary focus of their attention is the economic infrastructure and how it can directly deliver the jobs this community needs. In other words, the value of green infrastructure is understood, but ultimately given lower priority in investment decisions.

The question becomes whether the vision for places like Barrow is sufficiently bold and transformational to really change its trajectory in the long run, and whether that vision should perhaps make Barrow a greener and less aesthetically industrial destination over time. There is no easy consensus on such an issue, but it does require careful consideration – because if a new vision is required then the green assets of places like Barrow will be deemed to be a valuable part of the solution.

In terms of ‘place making Barrow certainly has real opportunities offered by its setting and green infrastructure. A green infrastructure approach to economic development sees these things as mutually beneficial and interdependent, and might be a valuable part of masterplanning for genuine transformation of communities in Barrow over time. We believe that Barrow has the potential to benefit greatly from an economic vision that maximises the benefits of its green infrastructure. In summary, we think the opportunities are as follows:

- There is potential to use the town’s setting and green infrastructure to change perceptions of the town held by residents, and potential investors and workers – despite the quality of Barrow’s location and the stunning coastal and Lakeland scenery the town still has an (often unfairly based) image problem. It is often perceived as being old fashioned, polluted, cramped, Victorian and industrial in a negative sense. Such an image does not encourage investment.
- There is the potential in the long-term to create a town which has an exceptional quality of life based on the quality of the natural environment which surrounds Barrow (complementing the development of a high value added economy). Though such an approach requires both inspired green design and significant investment in higher quality housing and ‘grey infrastructure’.
- Green infrastructure has powerful potential to improve the quality of life particularly for the town’s poorest residents, by transforming its most deprived areas from high density industrial housing to less densely packed and higher quality housing with high quality green infrastructure including accessible open space.
- Green infrastructure has the potential to impact powerfully on the health and wellbeing of the poorest and least healthy residents of Barrow through initiatives that change their lifestyles with more opportunities for walking, cycling and water-based recreational activities.

Like Carlisle, Barrow’s economic history has in some ways disconnected the town and its population from the countryside that surrounds it. Early guidebooks for the town made the link to the Lake District or Morecambe Bay<sup>14</sup>, but until recently Barrow’s links to these two

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<sup>14</sup> Thanks to Richard Newman, Cumbria County Council, for bringing this to the author’s attention.

environmental assets were perhaps less strong than they should have been. But a new Barrow is emerging that is more connected to its green assets – outdoor activity businesses providing access the environment through activities like kite surfing or cycling or sea kayaking are emerging, and recent projects like the Walney2Wear cycleway, or planned projects like the Sea Change project to develop cycling routes around the Borough are making Barrow a destination and place to live which starts to utilise its green potential<sup>15</sup>.

Because of the poor health scores of some Barrow wards it is an ideal location for environmental projects that are targeted at health outputs through utilising green spaces to encourage healthy lifestyle choices. There is a powerful need for environmental organisations to focus learning and life skills projects in a targeted way on those communities that have become culturally disconnected from the environment – providing green spaces is not enough if the ambition is to impact on health, ongoing support and engagement is also required to help people develop the lifestyles that will turn this potential into healthier and more active communities. Like everywhere else in Cumbria, Barrow needs both high quality grey and green infrastructure to exist in a mutually supportive way.

The approach suggested above is already known to most economic development professionals working in Barrow: they are aware, for example, of how green infrastructure might play a role in effective housing market renewal or in changing perceptions of the town, and some current projects plans reflect this awareness. A number of projects like the greening of the Barrow slagheap and the Green Heart Den Project have taken place with some success. The issue is more about the role of green infrastructure in a long term vision and the weighting given to this in investment decisions. The biggest problem with a green space project like the Green Heart Den is that there are not enough of these quality community green spaces, and they remain honorable exceptions rather than the norm.

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<sup>15</sup> The Morecambe Bay Partnership are currently developing with partners a major ‘landscape partnership’ project to try and secure HLF investment of more than £1 million. This would include making linkages across communities around the bay to maximise the value of the seascape.



**Figure 7 Barrow's 'green' or 'blue' infrastructure is an amazing potential asset**

Barrow is different from more affluent areas of rural Cumbria, explored elsewhere in this report. As a significant manufacturing and industrial community GVA productivity remains an extremely important indicator of economic progress. The challenge is to use green infrastructure to compliment urban design in ways that can attract greater investment and new higher value workers. Barrow needs to provide communities that will be fit-for-purpose for the kinds of workers that high-tech, high GVA value, businesses like BAE Systems will need to employ in the future. Using green infrastructure to impact on health deprivation also has a significant contribution to make. The development of the waterfront, including the cruise terminal which forms a sea entry point for the Lake District, is a timely reminder that the connection to the sea is a valuable ingredient in Barrow's future. There are also opportunities to develop green corridors from both the Lake District fells and seascapes like those of Walney Island that utilise existing public green spaces and woodland. All of these environmental assets can be utilised to reposition Barrow over time out of a traditional industrial aesthetic towards it being appreciated and valued for its unique setting and potentially high quality of life experiences based on its geographical distinctiveness.

## Green infrastructure and strategy

Green infrastructure is fairly prominent in Cumbria and the North West's key strategic economic documents. The **Barrow Borough Local Plan**<sup>16</sup> has a 54 page section on the environment<sup>17</sup>. There is no shortage of awareness of the importance of the environment in Barrow's strategic documents – there is policy on landscape character, and conservation, nature conservation and the role of open spaces and environmental enhancements in urban settings. The Local Plan adopts four guiding principles:

- 1) The regeneration of the local economy by sustainable development;
- 2) Protecting and improving the Borough's environment;
- 3) Providing a balanced and adequate supply of housing ; and
- 4) Developing the Borough's role as a sub-regional centre for leisure and shopping.

The Plan also identifies the drivers for economic growth and development in its objectives, and these reflect the conflicting demands and needs of the local economy:

- 1) To allocate land to meet the Borough's need for new housing, business and industry, so as to provide a range of choice and opportunity while reconciling this with relevant environmental and conservation interests.
- 2) 2 To sustain and enhance employment opportunities and generally assist in strengthening and diversifying the local economy of Furness.
- 3) To preserve and enhance the quality of life and environment in a manner which does not prejudice the enjoyment of future generations.
- 4) To reduce growth in the length and number of motorised journeys and to encourage alternative means of travel with less environmental impact, thus reducing reliance on the private car.
- 5) To encourage a high standard of design and help prevent inadequate design.
- 6) To sustain and enhance the viability, vitality and environment of Barrow town centre and other local population centres within the Borough.
- 7) To conserve the open countryside
- 8) To protect and enhance those parts of the built environment which are of special interest and merit.
- 9) To protect and enhance leisure, nature conservation and amenity areas and interests.

The order of the listed objectives does not represent or reflect any order of priority, but the first objective is a challenging one that has significant implications for the ecosystems of the area. This document highlights the conflicts that can emerge and the competing demands on the local authority faced with development needs for commercial land use (Section 3, Heading 5.3.4).

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<sup>16</sup> The Barrow Local Development Framework includes saved policies from the Barrow Borough Local Plan 1996-2006 and a Port Area Action Plan (published 12<sup>th</sup> July 2010).

<sup>17</sup> Chapter 5, Environment, Barrow Borough Local Plan Review 1996-2006 – provided by Val Holden, Barrow Borough Council

Within the recently published Port of Barrow Area Action Plan the following key issues and opportunities embrace aspects of a green infrastructure approach to the ports development

- Significant areas of derelict and vacant land need to be addressed whilst recognising their biodiversity value
- Private and public open space provision needs to be addressed
- All development proposals need to protect and/or minimise impacts on natural assets
- Networks of open space should contribute to any required mitigation of adverse development impacts on biodiversity and where possible should enhance it
- Opportunities to protect and enhance the environment whilst improving public access and understanding should be identified
- Respect existing character whilst improving standards of amenity and open space
- Protection of existing significant views
- Improve access to open space for residents.

Carlisle has a similar strategic focus on landscape character and biodiversity in the **Carlisle Local District Local Plan 2001-2016**. The main aims of the Sustainable Strategy are:

1. To develop Carlisle's sub-regional role for employment, shopping leisure and services without making excessive demands on resources or being incompatible with the environment in which we live; and
2. To balance the need for economic growth with the need to protect and enhance the quality of the environment; and
3. To meet local housing needs; and
4. To resolve conflict between pressure for an improved transport network, and the need to encourage a reduction in vehicular movements within and around the City; and
5. To encourage appropriate forms of tourism development and rural enterprise; and
6. To promote opportunities for the rural area to create job opportunities and maintain local facilities; and
7. To minimise the dangers of pollution without obstructing economic growth; and
8. To avoid harm to the health of residents.

Again, balancing economic growth against environmental management is at the heart of the strategy. But again the detail of the objectives that follow on from this vision reveal the competing demands on the environment of the local area:

1. Allocating sufficient land to meet employment, housing and other needs of the population, primarily within the existing built up area focusing on previously developed land;
2. Integrating land use and transport planning to improve transport efficiency, reduce the need to travel, encourage greater use of public transport and encourage cycling and walking;

3. Local partnerships, with the City Council setting objectives and targets, and involving the local community in determining local priorities, including affordable housing, and environmental priorities, and providing opportunities for practical action;
4. Environmental assessment of all major development projects that are likely to have significant environmental effects;
5. Monitoring the effectiveness of planning policies in delivering the objectives of sustainable development;
6. Promotion of environmental protection and enhancement, including measures to protect, replace, if lost or damaged and enhance public open space and wildlife habitats, and pursuing such measures as recycling initiatives.

There is a real sense in these documents of responsibility for environmental impacts and change, but what this means in practice is open to interpretation. Throughout Cumbria ecosystem services and green infrastructure are not on the margins because of lack of awareness or lack of strategic focus - they are in the strategic documents, and even the most hard-nosed economic development professionals agree that environmental issues are important. The problem is much simpler than this; it is that **when economic development decisions are made in Cumbria other factors are persistently being deemed to be greater priorities for economic development investment than the environment and individual environmental assets.**



# Applying the economic benefits of green infrastructure to Cumbria

This section provides an overview of the 11 economic benefits at a Cumbrian scale and is based on wide ranging consultations with key individuals dealing with economic development, the provision of green infrastructure and the management of ecosystems services

## Economic growth and investment

Much of rural Cumbria, and some of urban Cumbria, suffers from relatively low productivity, because as an economy it is over reliant upon small businesses in relatively 'low GVA' sectors like tourism and retail. Employment rates are relatively high for much of Cumbria, with pockets of multiple deprivation focused particularly in more urban communities in West Cumbria, Barrow and Carlisle. Environmental projects should prioritise creating relatively higher value jobs, and supporting higher value added activities. Raising the quality and value of employment is the key economic goal across much of Cumbria. Average wages in rural Cumbria are typically 20-30% below national averages.

The quality of Cumbria's environment is a mixed blessing. On the one hand it helps attract some workers, and businesses, and helps some businesses retain staff. But the perception of the Cumbrian landscape has led many people to think Cumbria is a non-business location and that is concerning for dynamic inward investment. Cumbria may need a new economic vision for its communities that builds on its strengths, but it also needs the infrastructure to attract new businesses and retain existing ones. More effective relationships between the economic infrastructure and environmental projects could deliver higher value activity. The tables below reveal the contributions of the different sectors in terms of both employment and GVA.

### Headline Gross Value Added (£million)

	2007	% of GVA output
<b>Agriculture, forestry, fishing</b>	153	2%
<b>Mining and quarrying</b>	60	1%
<b>Manufacturing</b>	1,960	27%
<b>Electricity, gas and water supply</b>	184	2%
<b>Construction</b>	542	7%
<b>Wholesale and retail trade</b>	906	12%

<b>Hotels and restaurants</b>	387	5%
<b>Transport, storage and communication</b>	475	6%
<b>Financial intermediation</b>	136	2%
<b>Real estate, renting and business activities</b>	885	12%
<b>Public administration, defence,etc</b>	312	4%
<b>Education</b>	454	6%
<b>Health and social work</b>	598	8%
<b>Other services</b>	327	4%
<b>Total</b>	<b>7,379</b>	<b>100%</b>

#### Employees in Employment (from Annual Business Inquiry)

	<b>2007</b>	<b>% of employment</b>
<b>Agriculture, forestry, fishing</b>	3,600	2%
<b>Mining and quarrying</b>	800	0%
<b>Manufacturing</b>	38,000	18%
<b>Electricity, gas and water supply</b>	1,600	1%
<b>Construction</b>	11,700	5%
<b>Wholesale and retail trade</b>	38,400	18%
<b>Hotels and restaurants</b>	22,900	11%
<b>Transport, storage and communication</b>	10,800	5%
<b>Financial intermediation</b>	2,600	1%
<b>Real estate, renting and business activities</b>	23,600	11%
<b>Public administration, defence,etc</b>	9,500	4%
<b>Education</b>	17,600	8%

<b>Health and social work</b>	26,300	12%
<b>Other services</b>	9,700	4%
<b>Total</b>	<b>217,100</b>	<b>100%</b>

The key point to note is that Cumbria has a mixed portfolio of sectors, some higher GVA with smaller numbers of jobs, and others lower in terms of GVA value but sustaining large numbers of jobs<sup>18</sup>. Manufacturing is particularly important both as an employer but also in terms of GVA. This economic profile is typical of other comparable rural areas - but discussions about green infrastructure need to include an awareness of these economic realities. These relationship between green infrastructure or the environment and these sectors varies: Tourism is heavily reliant upon the natural environment (see below), but other sectors have a lesser relationship, like the £454 million Cumbrian ‘Education’ economy which often benefits from proximity to the natural environment and environmental projects, and a significant share of Cumbria’s ‘Public administration’ sector, worth £312 million per annum, is related to landscape, biodiversity, conservation and land management. Other sectors are less reliant upon the environment.

### Land and property prices

Previous studies have suggested that property values increase near green spaces, with houses close to parks averaging 8% higher prices than similar properties further away. Green infrastructure in urban areas has therefore been championed as offering significant returns for the property sector<sup>19</sup>. Previous research indicates that residents in suburban settings are willing to pay £7,680 per household for views of broadleaved forests, which would equate to £4.2 billion across the UK. Additionally, studies in the US in the 1980s and more recently in the UK have indicated that average house prices are between 5% and 18% higher where a property has or is near to mature trees.<sup>20</sup> There is a powerful correlation in Cumbria between high quality designated landscapes and high property prices. House prices are 7-12 times the median incomes in the Bassenthwaite catchment’s wards and just 3-4 times median income in wards of West Cumbria. The average house price in the Bassenthwaite catchment being between £250,000 and £320,000 and just £60-£100k in some West Cumbrian wards. A Lakeland landscape view appears to add c. 20% to the value of a property. The ‘real estate, renting and business activities’ sector clearly benefits from a complex relationship with the landscape – this sector is worth £885 million per annum in Cumbria. There are clearly opportunities to improve the quality of life in

<sup>18</sup> There are two schools of thought on the GVA issue for rural Cumbria; firstly that perhaps it doesn’t matter because relatively isolated rural areas are unlikely to be globally or regionally competitive in terms of productivity, and have structural disadvantages in the competition for high value industries which may always gravitate to major urban centres. According to this view an area like Bassenthwaite catchment should perhaps not worry about GVA rates, if it provides the ecosystem services for the rest of an effectively performing local and regional economy. But there is another school of thought that sees this is economically unsustainable.

<sup>19</sup> See The Economic Value of Green Infrastructure, Natural Economy North West

<sup>20</sup> National Urban Forestry Unit 2005, Trees Matter! Bringing Lasting Benefits to People in Towns; CABE 2005, Does Money Grow on Trees?

urban areas of Cumbria by more imaginative use of green spaces – with interesting initiatives emerging already in Barrow linked to Housing Market Renewal and the Green Heart Den project. The challenge is that the economy of rural Cumbria cannot sustain employment that allows residents to buy these homes, creating an affordability issue of some concern. Also the environmental premium paid on properties appears to not benefit the landscape.

## **Labour productivity**

The relationship between green infrastructure and labour productivity is complex. Most research on this subject is about the benefits of urban areas being greened as part of measures to increase quality of life to attract and retain workers. Clearly this relationship is different in rural areas. As we have already seen too much of the employment in Cumbria is relatively unproductive and relatively low paid. The GVA per employee in the Hotels and Restaurants sector in Cumbria is c. £17,000, the all sector average for Cumbria is £34,000. The challenge for environmental organisations and projects is to support economic development of higher value activities (or encourage the higher value activities within the lower value sectors), through linkages to quality hotels, shops, food and drink, and experiences which are capable of sustaining higher value employment. Traditionally too many environmental projects have offered low value tourism facilities, and have as an un-intended consequence perhaps perpetuated the problems caused by low pay, part-time and seasonal employment.

Environmental projects can do more to deliver higher value activities that can complement other measures to improve productivity. In tourism, for example, environmental or cultural events and attractions can work to lengthen the visitor season, persuade new high value audiences to visit, and visitors in general stay longer. This can support the tourism industry to increase its productivity and performance. In agriculture there is scope for adding more value to products. Some National Parks like Cinque Terre in Italy have even started to invest in ‘lowering the cost and improving the efficiency of production’ for land-based businesses as a means of sustaining the sectors that manage the landscape most cost effectively. Consideration also needs to be given as to whether, and how farmers, could be financially rewarded for the provision of a range of ecosystem services in addition to farming.

## **Tourism**

It is clear to everyone that Cumbria’s key tourism brand asset is its landscape, and particularly the Lake District<sup>21</sup>. Tourism is a critically important industry for Cumbria, and particularly for rural Cumbria. The sector is responsible for 10.2% of Cumbria’s GVA, and 14.4% of Cumbria’s employment (compared with 4.7% of the North West’s GVA and 6.7% of its employment)<sup>22</sup>. In 2008 Cumbria had 15.3 million visitors, made up of 5 million who stayed overnight and 10.3 million day trippers. This brought in £1.17 billion to the region's economy and provided employment for 20,575 full time equivalent (FTE) posts. As many tourism jobs are actually part

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<sup>21</sup> The Economic Value of Green Infrastructure suggests that ‘even urban green spaces and less well-known natural areas offer tourism opportunities by incorporating visitor attractions, preserving attractive landscapes, and generating economic activity in sectors such as agriculture, forestry, public services and hotels and catering.

<sup>22</sup> North West Tourism Report, NWDA

time, or seasonal, the total number of people in tourism jobs is estimated at 35,389. As many as 95% of visitors to Cumbria state the main reason for coming was the ‘physical scenery and landscape’<sup>23</sup>.

Tourism makes up more than half the economic activity in some rural areas like the Lake District National Park. The Lake District has **tourism spend per hectare value of £2,875** (with 36.2 visitors per hectare). Comparative analysis of visitor footfall and spend per hectare across the UK’s National Parks shows that the Lake District performs well for a large northern National Park, with a higher spend per hectare than any of the other ‘big 10’ National Parks, but is not the most effective at turning landscape into spend on a per hectare basis by some margin<sup>24</sup>. The Broads and Pembrokeshire Coast all create more tourism turnover per hectare from their National Parks, perhaps explained partly by their concentrated size.

The tourism spend per hectare of the Lake District is a comparatively high figure for a large dispersed landscape, with vast areas of unpopulated mountainous land. The average tourism spend per hectare figure for 10 of the largest UK National Parks (those with over 100 square kilometres of land) is £1,520 per hectare<sup>25</sup>. The northern national parks (i.e. those north of the midlands) have an average spend per hectare of £2,131. Although the Lake District landscape supports a much higher tourism turnover than comparable destinations, this perhaps counts for little in sustaining environmental stewardship if mechanisms are not found to turn that extra spend into re-investment in that same landscape.

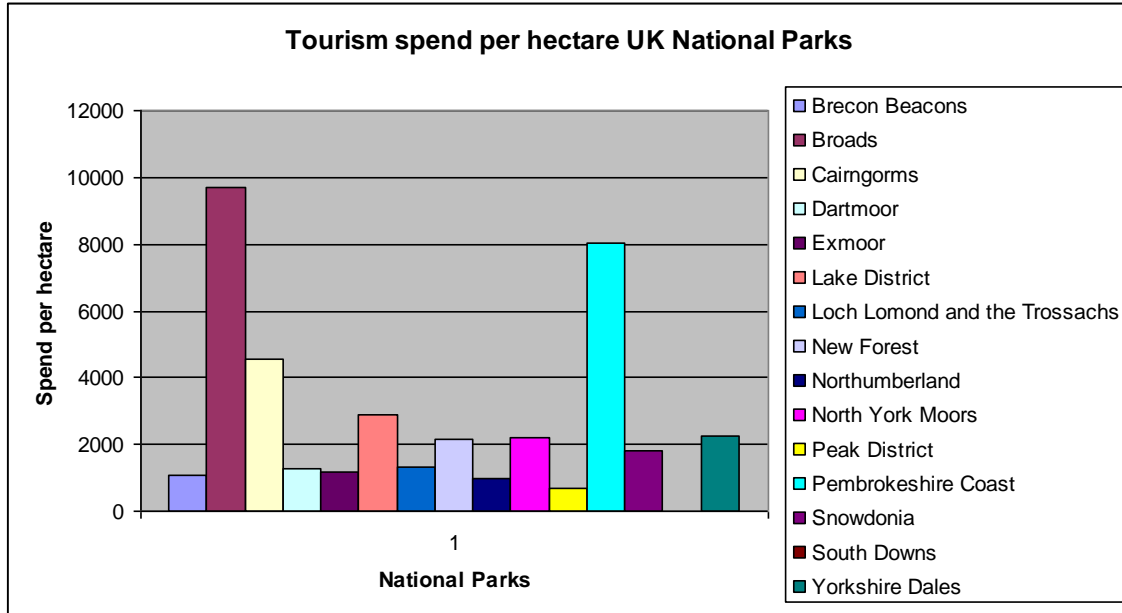
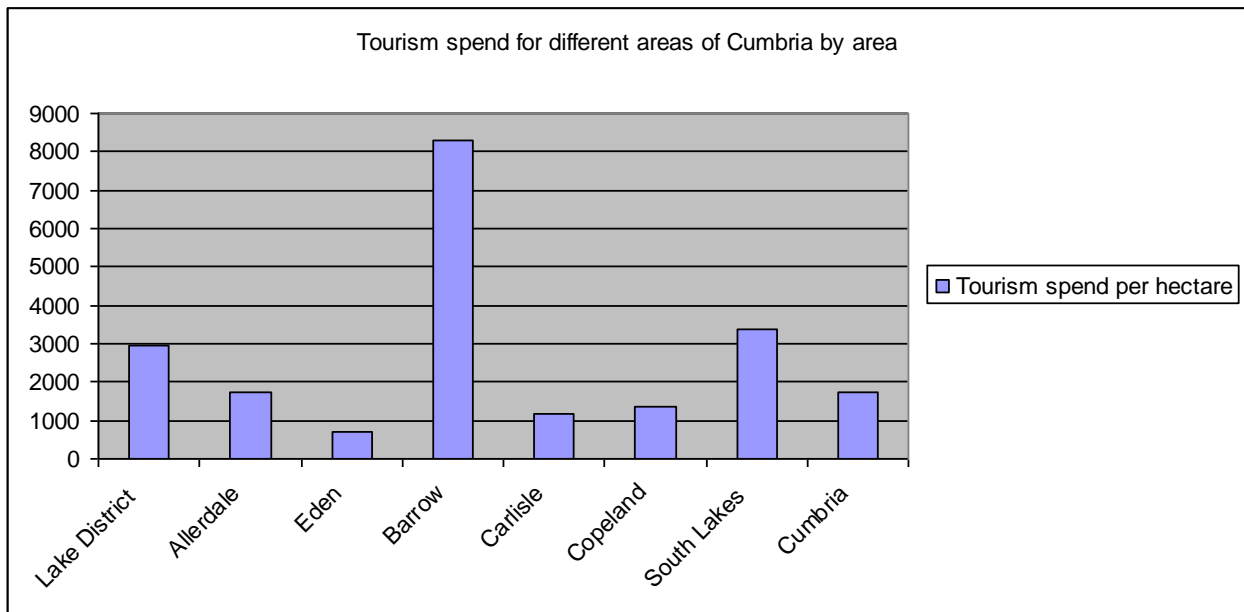


Figure 8 this table is constructed from data on the UK National Park website

<sup>23</sup> Tourism figures from 2008 STEAM data held by Cumbria Tourism

<sup>25</sup> The ‘big 10’ used here are as follows: Brecon Beacons, Cairngorms, Lake District, Loch Lomond, Northumberland, North York, Peak District, Snowdonia, South Downs, and Yorkshire Dales

Similar analysis of the different areas of Cumbria suggests that the Lake District landscape generates significantly more tourism revenue per hectare than most other areas<sup>26</sup>.



**Figure 9 The tourism spend per hectare for the Lake District is almost £2,000 more per hectare than other areas of Cumbria that lack its landscape. The figure for Barrow is a statistical anomaly because of its small geographical size, but demonstrates that economic return on places is about tourism infrastructure, and other issues like business tourism, not just landscape.**

But despite tourism being such a big part of the economy of rural Cumbria; there are challenges with the sector as a means of sustaining the landscape. Most tourism spend is on travel, accommodation, retail and food and drink. Very little of this tourism spend goes directly to environmental projects or land managers of any kind. Unfortunately, environmentally motivated visitor segments appear to spend less per day than other segments. Compare that with the high value of culturally motivated visitors (research has shown that a 1% shift to them is worth £20 million per annum).

The tourism sector is not particularly good at generating significant amounts of money for landscape management. Even with a well managed and progressive visitor payback scheme only £220,000 was raised by the tourism sector across Cumbria for conservation last year. Opportunities exist to secure greater economic benefit from the environment but new

<sup>26</sup> Barrow's high tourism spend per hectare shows two things: firstly that the Borough is a relatively small geographic area with condensed tourism spend, but also that even less picturesque landscapes can unlock significant tourism output if they have the tourism infrastructure of accommodation and food and drink offer. The true comparison, of course, were it possible, would be between Keswick and Barrow, and the suspicion must be that Keswick would have a much higher tourism spend per hectare, which because it is evened out over the whole catchment through averages creates a relatively modest figure per hectare. It should also be noted that the figure for Eden and South Lakeland incorporate key parts of the Lake District National Park, and without these tourism honey pots, would have considerably lower spend per hectare figure.

investment and approaches are required. Some progressive projects are emerging with a greater focus on strategic economic impacts, like the Nurture Lakeland (formerly Tourism and Conservation Partnership) Green Tourism Eden project that has been targeted at delivering ‘higher value’ tourism activity in the Eden Valley.

## Products from the land

In recent decades economic statistics have shown agriculture and forestry appearing to have declined to a relatively marginal economic role even in rural areas like Cumbria. However the role of agriculture remains critical to the management of this landscape. According to previous research<sup>27</sup>, four fifths of the North West’s land is agricultural, with 40,000 people employed in the agriculture sector and 2,800 in forestry. ‘Agriculture, forestry and fishing’ is a £153 million per annum sector in Cumbria directly employing 3600 people, and ‘Mining and quarrying’ which is worth £60 million per annum employs 800 people in Cumbria<sup>28</sup>. The £184 million per annum Cumbrian ‘Electricity, gas and water supply’ sector also benefits significantly from the natural environment, through water extraction etc, and employs 1600 people. Even Cumbria’s £1.96 billion manufacturing sector often benefits directly from the natural environment with businesses utilising the outputs of forestry or agriculture, or benefitting from natural resources like water extraction.

These land-based (or partly land-based) industries are still particularly important to Cumbria<sup>29</sup>. Agriculture has above average productivity rates in GVA terms per worker at a Cumbrian level. The total value of agri-environment agreements for Cumbria is £181,737,556.67, with an annual value at present of £20,917,778. The share of farm revenue from the public purse in our case study model is c.40% but may well decline to 25% if forecasts on global food demand and CAP reform are correct (a potential decline of 20-40% in CAP funding). Maintaining this landscape will require viable farm businesses. An area where the returns from this landscape might be improved is through working with **agricultural producers to find ways to add value to products**, and particularly to get cultural visitors to spend more on local high quality food as a way of supporting the management of the landscape. This kind of work is often a double win because

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<sup>28</sup> Non-tourism figures here are from 2007, tourism figures from 2008. Sources: Office for National Statistics GVA & Cumbria Annual Business Inquiry

<sup>29</sup> Timber Production is still significant in Cumbria amounting to c.65k m<sup>3</sup> (district = 85k m<sup>3</sup>). Timber Prices are very variable over time, but an approximate guide would be £20 per tonne (roadside prices for harvested timber) for lower grade timber quality end (e.g chipwood) and around £40 per tonne for higher grade timber at the quality end of the scale (e.g Sawlogs). Specialist market timber such as Big Douglas, Oak, Sweet Chestnut can fetch significantly more money per tonne. The main markets (and typical consumers) are: sawlogs for construction timber (e.g. BSW near Carlisle); sawlogs for fencing and gardening products (e.g. Peter Irving near Kirby Lonsdale), short logs for making pallets (e.g. James Jones near Lockerbie), spruce logs for making Paper (e.g. Iggesund Paperboard at Workington), lower grade timber for Panelboard manufacture (e.g. Kronospan at Chirk, Wales), and small dimension timber for fencing (e.g. Lavesdale Timber near Carlisle). In terms of woodfuel, half of Cumbria’s woodlands could provide an annual, yield of 39000 tonnes of wood (at 30% MC) which equates to 137000 MWH of energy. This could potentially feed 450 boilers, and save 36000 tonnes of CO<sub>2</sub>. Thank you to Peter Fox, John Bruce and Penny Oliver of the Forestry Commission for providing information.

the kinds of high spending cultural visitors who are most valuable expect to experience high quality locally distinctive food with a clear provenance. The past decade has seen multiple initiatives to try and achieve this, including many which have failed. A key issue which may handicap such efforts is the lack of value-adding (manufacturing and product development facilities) infrastructure in Cumbria.

Recent reductions in regional funding and the engineered contraction of the public sector will mean an enhanced role for the private sector in developing green infrastructure. The farming economy is one area of activity in which a market inspired private sector will take the lead role. There is a risk of forgetting that Cumbria's green infrastructure is overwhelmingly private sector owned or managed, and that its management relies upon a viable productive economy.

## Health and wellbeing

People who are physically active reduce their risk of developing major chronic diseases – such as coronary heart disease, stroke and type 2 diabetes – by up to 50%, and the risk of premature death by about 20-30%. The annual costs of physical inactivity in England are estimated at £8.2 billion. This does not include the contribution of inactivity to obesity – an estimated further £2.5 billion cost to the economy each year<sup>30</sup>. Natural England's *No Charge: Valuing the Natural Environment* report suggested that people who live within 500m of accessible green space are 24% more likely to meet recommended levels of physical activity<sup>31</sup>. The Annual Report of the Director of Public Health (Cumbria 2010) makes quite clear that a key priority is to reduce the inequalities in health within Cumbria, and that lifestyle factors like exercise, good food, meaningful work, and community cohesion have a major impact on health.

Advocates of green infrastructure need to provide better evidence how this landscape provides health benefits, or to develop additional health benefit from the landscape for communities that appear to benefit little, and which will presumably be the target of health investment in the future. The Lake District hosts 15.3 million tourist days a year, with perhaps 40%+ of people engaged in activities that are good for their health and wellbeing. This is a significant public benefit for the UK. Cumbria alone has a health economy worth £598 million per annum. But there are challenges; environmental organisations and projects can play a powerful role in getting more health outputs from this landscape. Currently less than 10% of visitors engage in a walk of more than 2 miles. Residents of affluent areas like the Bassenthwaite catchment have high levels of good health and wellbeing; Life expectancy at birth in the Greystoke ward is 91 years, but only a few miles away in Moss Bay Allerdale the life expectancy is 71 years. The catchment appears to enable affluent residents to live long healthy lives but does not appear to benefit enough the relatively deprived communities close by. There is considerable potential for

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<sup>30</sup> Source: At least five a week: Evidence on the impact of physical activity and its relationship to health (A report from the Chief Medical Officer)

<sup>31</sup> No Charge? Valuing the Natural Environment, Natural England (2009). The authors of this report are slightly concerned about some of the figures for proximity to green spaces, and remain unclear whether they simply show a correlation between affluence and good health, rather than proximity to green space and good health. Affluent communities, for a whole host of social and historic reasons are more likely to have parks and other green spaces.

new partnerships between health and environmental organisations that make the Cumbrian landscape work better for less affluent people.

## **Recreation and leisure**

Cumbria has amazing infrastructure for outdoor recreation and leisure. Cumbria is a 'County of Excellence' for provision of outdoor centres for people with disabilities. The Lake District has a major presence of education, training and development organisations including the Brathay Trust, the IMPACT Group, Outward Bound and the Field Studies Council (all of whom are significant local employers). Cumbria is also home to the Outdoor Management and Education Training Centre and National Skills Academy at the University of Cumbria. And the Lake District has the highest density of Youth Hostel Association accommodation in the UK.

The Cumbria Tourism Adventure Capital Strategy (2009-2019) identifies this as a £225 million market for Cumbria. It plays to many Cumbrian (and Bassenthwaite catchment) strengths, including the prevalence of outdoor activity providers, outdoor recreation retailers, unique landscape and the culture of outdoor excellence. Recreation activities already employ more than 1,500 people in Cumbria, and this has grown by 51% in the period 2000-2008, massively outperforming the growth rate for Accommodation Providers (8%) or a static growth rate for Food and Drink. Recreation is the single fastest growing tourism sub-sector including during the recession period when all other sub-sectors experienced decline. At least 42% of Cumbria's existing 15 million visitors engage in some form of outdoor activity – and key Cumbria Tourism market segments list these kinds of experiences as a key motivating factor in visiting Cumbria. National forecasts suggest that activity breaks are set to continue to outgrow the tourism sector overall<sup>32</sup>. The opportunity has to be to translate habitats and biodiversity into products and experiences that people can take part in and spend money on. Cumbria has a long track record and some excellent examples of this (including Grizedale and Whinlatter), but needs more. But perhaps the greatest potential for green infrastructure to change people's lives in Cumbria is through improving the immediate environments of some of the most deprived communities to encourage and support healthier lifestyles that can potentially improve health and wellbeing.

## **Quality of place**

Cumbria is widely acknowledged to have some of the highest quality landscapes in the UK. These include two national parks of which the Lake District National Park is a prospective UNESCO World Heritage Site. Sustaining that global reputation is clearly a matter of some economic and environmental importance. But there is another area of green infrastructure focus which is equally important and that is developing the quality of Cumbria's other communities, particularly those affected by multiple deprivation. Projects like the Our Green Spaces project have achieved some impressive social and community impacts at a local level, in places like Barrow, but to achieve transformational change more is needed. The Cumbrian landscape needs to evolve and change to face new challenges. But it should be noted that there are tensions about which changes are most desirable or necessary. There is insufficient evidence

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<sup>32</sup> All statistics in this paragraph from the Adventure Capital Strategy, Cumbria Tourism (2009)

of the potential impacts of different scenarios to make these judgements in an informed manner at present, and little by way of informed public debate about what communities want.

Quality of place can be a key economic driver. Research undertaken for the Welsh Development Agency (The Power of Destinations, Communications Group Plc, 2006) which included survey work of 102 members of YouGov's Think-tank panel of business leaders and 22 senior executives of companies employing over 500,000 individuals in up to 140 countries revealed that inward investment decisions are increasingly about 'softer' factors like the cultural, lifestyle, architectural and environmental profiles of locations. The survey revealed that the second most powerful determinant for decision makers was an 'agreeable climate and environment'. An example of this in practice would be California's recent TV advertising campaign which is aimed at attracting high value workers and visitors, but which actually features endless images of sandy beaches and sun swept landscapes where, we are encouraged to believe, we would play if only we depart the grey and dismal places where we live and relocate to the 'Sunshine State'. The key opportunity has to be through partnership working to develop a perception of Cumbria, and particularly rural Cumbria, as a dynamic economic destination, rather than simply a vision of arcadia.

This landscape has long sustained a cultural and creative economy that responds and relates to the quality and distinctiveness of its landscape – this is an economic opportunity of some importance. The Department of Culture, Media and Sport states that creativity will be **'the engine of economic growth for towns, cities and regions'** in the next decade. There is a real opportunity for Cumbria to develop dynamic and high value creative clusters and cultural enterprises that are built around landscape as a source of inspiration and creativity. As well as being economically important in their own right the creative and cultural industries can provide a sense of cultural buzz and inspiration that can be valuable to other sectors. Artists can work closely with environmental or land management organisations to change perceptions of places – the recent illumination and street art project delivered on Hadrian's Wall demonstrates this point.

### **Land and biodiversity**

The economic benefits directly attributable to Cumbria biodiversity are problematic. Perhaps the key issues here relate to the potential for "iconic" species to be an economic draw, but also the difficulty of less "exciting" species having the same effect. For a number of reasons lots of Cumbria's biodiversity is not profitable box office. Biodiversity conservation and enhancement is however fundamental to healthy ecosystems and landscapes and in fact all green infrastructure has at least some biodiversity value. Perhaps a key challenge might be to examine how in the future more environmentally driven projects might be able to either deliver or aid economic outputs as well. Even if there were still vendace in Bassenthwaite Lake few visitors ever saw them. On the other hand the Bassenthwaite Ospreys attract more than 100,000 people per year, generating at least £420,000 of attributable spend, and indirectly supporting 34 FTE jobs during the season, as well as employing 10 dedicated staff. This is a great example of the translation of biodiversity into economic impact, through investment in interpretation infrastructure and

visitor facilities that unlock spend. But, arguably, too few Cumbrian environmental projects have been able to make this transition. There is encouraging evidence of private sector investment in enhancing biodiversity from companies like United Utilities through their £15m SCaMP project, but also at smaller scale from farms and tourism businesses. This investment may be part commercial self-interest, but this does not matter if it funds habitat improvements as well. Where the goal is direct economic impact new approaches are needed from environmental organisations, and investment to support such measures. To date many of the best biodiversity and habitat enhancement projects, including the Bassenthwaite Restoration Programme and Bassenthwaite Reflections Project, have been about providing the underpinning ecosystems with few direct traded economic outputs<sup>33</sup>.

## **Flood alleviation and management**

This is perhaps an area where changes to environmental management could potentially have significant long term economic benefit. The November 2009 flooding in Cumbria resulted in c. £200 million of damage and flooding more than 2000 properties (450 of which commercial businesses). The flooding has a bridge and road repair bill of £50-£100 million for Cumbria County Council, with insurance claims perhaps reaching £100 million for household and business costs. Cumbria Tourism estimates that £2.5 million of bookings were lost in the aftermath of the floods. 72% of tourist businesses across Cumbria reported negative impact. 6% of tourist businesses closed down temporarily. Business Link estimated that 3,057 businesses in Allerdale were affected, and many farmers had land degraded by flood damage. At least one farmer was quoted a cost of £90,000 to clear a single field of gravel. The ongoing additional costs to businesses of increased travel time are £2m per week. The costs of flooding have stimulated a debate about whether this landscape can be managed differently to reduce the costs of flooding. No one doubts the cost of this event, or the need to do something to reduce the impact of future events. All proposed solutions, however, require further research and discussion, and rely upon landowner and community buy-in<sup>34</sup>.

Further research is required about the feasibility and cost of the structural changes that may be needed to achieve significant flood alleviation. The relative costs and benefits of different scenarios are not sufficiently evidenced to make informed decisions that may have a profound impact on the catchment's landscape. Environmental organisations may be right to believe that new landscape management is required, but the positive or negative impact of such changes on the other 10 economic benefit areas are unclear at present and require an informed debate with communities.

## **Climate change and mitigation**

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<sup>33</sup> Which is perhaps is the most sensible way to fund some of these projects which are not primarily about direct economic outputs. Funders also have an influence here and some funders like the Lottery schemes are inherently non-commercial.

<sup>34</sup> Recent research by Forest Research on Derwent and Cocker catchments has shown the potential for trees to aid flood management in future. Source Penny Oliver, Forestry Commission

Cumbria can play a role in climate change and mitigation. The Cumbrian landscape contains significant amounts of carbon, trapped in a range of environments including forestry and peat soils. The North West's woodlands are believed to have a carbon storage value of c. £600m. It has been calculated that peat soils of the Lake District National Park store 28 million tonnes of carbon. Further research is required to develop payback models that can translate the climate change mitigation role of the Cumbrian landscape into economic outcomes of significance. If this can be achieved then a range of Cumbrian sectors may benefit.

In general it is considered that the impact of green infrastructure on climate change mitigation will be quite limited but it can play a greater role in adaptation to climate change<sup>35</sup>. Building greater resilience to climate change is recognised as one of the five essential actions for North West England in a recently published green infrastructure report by Natural Economy North West.<sup>36</sup> The urban areas of Carlisle, Barrow, Whitehaven and Workington have been identified as the places in Cumbria where both existing and new green infrastructure will be most important in adapting to climate change. In Carlisle the existing green infrastructure already has the potential to manage surface water and riverine flooding and with development and additions can help with managing higher temperatures and visitor pressure. The direct economic benefits of these services are best considered in terms of the potential costs to businesses of not safeguarding and enhancing existing and developing new green infrastructure.

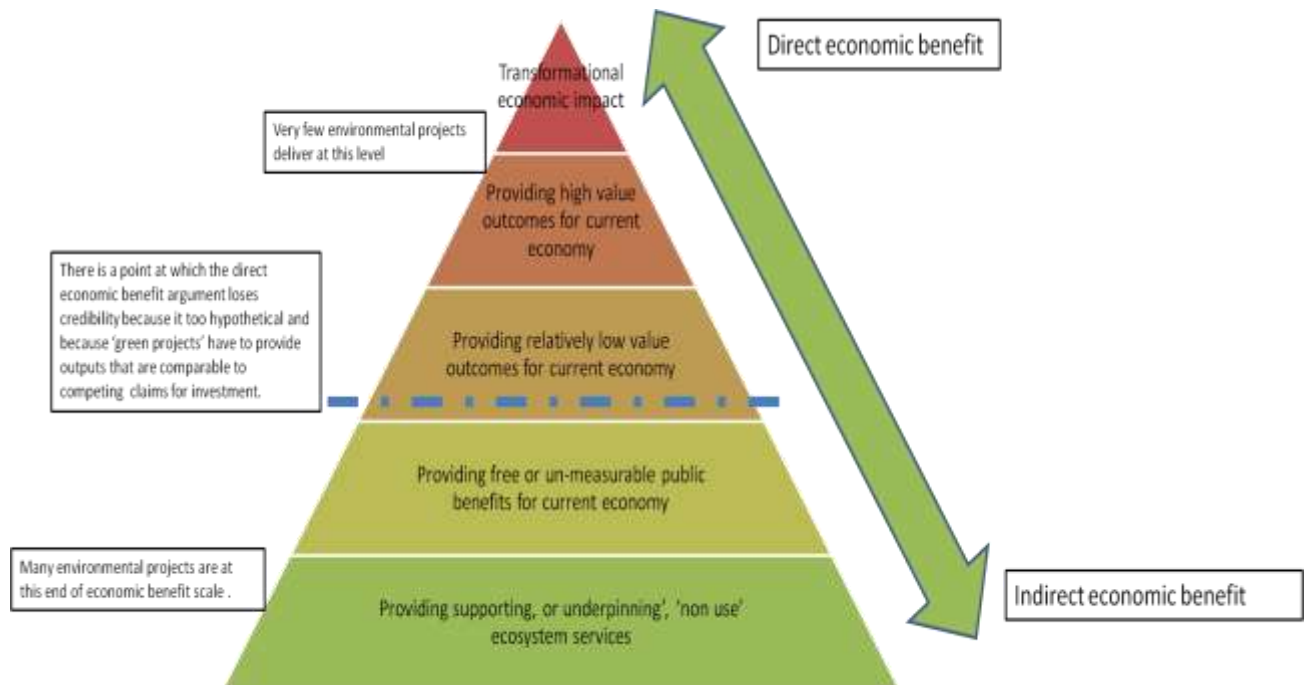
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<sup>35</sup> NWDA 2010 Green Infrastructure: How and where can it help the Northwest mitigate and adapt to climate change?

<sup>36</sup> Natural Economy North West 2010 Green Infrastructure Prospectus

# Environmental improvement and economic benefits

There is widespread agreement amongst stakeholders that a sound economy needs to be underpinned by well-functioning ecosystems. But once the discussion turns to ‘direct economic impacts’ or contribution to ‘GVA productivity’ the evidence suggests that some of the ecosystem services (particularly those described as ‘regulating services’) in the Vital Uplands report currently have a relatively low value per unit, and only amount to significant economic issues when calculated across very large landscape areas. Even those that have a higher potential value often, at present, lack an effective payback mechanism through which their production can be turned into effective incentives and economic benefit. We believe that there is effectively a hierarchy of economic value relating to environmental projects and ecosystem services:



**Figure 10.** Whilst judgements about the economic value of projects must remain relatively subjective because comparable data barely exists, it is probably fair to highlight the fact that many environmental projects in Cumbria are not considered to be economically 'transformational' in the way that the Eden Project has been for Cornwall or in the way that a non-environmental project like Carlisle Airport might be for Cumbria. The table above shows an indicative scale of economic impact value for a range of Cumbrian projects. Many of those near the bottom of the scale are not 'bad' projects; they were simply aimed towards objectives other than transformational economic impact.

There is an important distinction between providing the supporting ecosystem for an economy and contributing directly to its growth and development; but both have an economic value. Yet

it is not always clear which argument environmental champions are making. A key challenge for this research has been that very little credible economic evidence exists to enable a value to be placed on projects which underpin or sustain the economy rather than contributing directly through market transactions. This does not mean that projects are not contributing something of economic value, merely that current mechanisms for gathering evidence make it impossible to demonstrate or quantify this value.

In the Bassenthwaite catchment, for example, there have been some impressive environmental projects in recent years – including the Bassenthwaite Reflections HLF Landscape Partnership and the Fix the Fells projects and countless other projects and interventions that have enhanced habitats, improved accessibility, made the landscape more resilient to future challenges like climate change, improved biodiversity and raised the quality of life of residents and visitors alike. However this report is necessarily focused on which environmental improvements provide the greatest economic benefit in GVA, or other measurable economic, terms and this is extremely challenging because it judges those projects by standards that were perhaps not their own definition of success or in line with their stated objectives. Several of the projects listed above were effectively about softer non-economic impacts. Let us take one example:

The challenging message from our research is that it is probably unwise to separate out ecosystem services and the economic benefit they can produce from more strategic discussions about the key economic drivers in any given location. Making an ecosystem more resilient and more sustainable for the future is a powerful argument for investment if the economic activity in that location is effective, productive and profitable – but if environmental projects are simply sustaining an economy that is relatively ineffective, unproductive and unprofitable then the argument is much weaker. The Bassenthwaite Reflections project, for example, can make a strong argument for having helped to sustain the ecosystem that underpins the economy, but it would have a weaker argument in terms of direct positive economic changes. Many other environmental projects in the catchment face similar issues; they are more about the resilience of the system than economic growth or development.

Traditional economic analyses can sometimes create the impression that economic growth can take place in parallel with environmental degradation. But as everyone knows you don't escape the costs forever, and the costs can be considerable<sup>37</sup>. The authors of this research are not experts on the ecological issues facing the Lake District but we are aware that there is a risk of poor water quality in some lakes (identified by the Water Framework Directive) becoming a matter of public interest in the future in ways that it hasn't been in the past. Clearly the 'Lake District' would have a major PR disaster on its hands if the level of phosphates in the Lakes resulted in 'Danger' signs being erected to keep people away from algal blooms.

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<sup>37</sup> There is a clear lesson to be learnt from the economic development focus on short term gain, as effectively identified by the Stern Report on the economics of climate change and The Economics of Ecosystems and Biodiversity (TEEB) Project.

It is worth thinking for a moment about the potential costs of such a PR disaster; at the bleak end of the scale an 80% decline in tourism spend in the catchment would cost £208 million in tourism revenue. Perhaps more likely would be a scenario whereby spend in the catchment was affected by say 30% in July, August and September (35.4% of annual spend is in this period). This would cost £28 million in lost tourism revenue. But perhaps most likely of all would be a gradual erosion of the reputation of the Lake District with a slow but steady decline in visitors year on year. Even a 3% decline in spend in the catchment per year would cost more than £7.9 million per annum<sup>38</sup>.

The link between environmental projects and economic benefits in Cumbria is as complex as anywhere else. Many environmental projects make the places where they occur more resilient for the future, they may even make the places where they take place look better or make them more accessible, but for many of these small to medium sized projects little convincing evidence exists that they actually make the place perform better in measurable economic terms. The truth is that these projects often deliver tiny incremental changes to the overall landscape. They may have considerable time lags for impact, they may be relatively inaccessible, they may simply perpetuate in some cases low value tourism behaviour, or they may deliver biodiversity outputs that are effectively invisible to most visitors and residents. None of this is to dismiss their environmental worth (holding the place together so that it survives and can prosper in the future), merely to explain that it is too much to expect that they will have a significant economic impact on their own. Natural environments often deliver little by way of direct tangible economic benefits in the here and now (e.g. jobs created) relative to other activities. However there is also a need to look beyond economic impact and consider other economic value, such as the health benefits provided by recreation and the consequent savings to the NHS.

In the Bassenthwaite catchment nobody wants an ecosystem that cannot stand up to the strains placed upon it. But the authors of this report believe it may be a fantasy to imagine that environmental improvements in isolation can deliver the degree of economic change that may be required in the future in this landscape. Visitors flock to Whinlatter Forest Park because of the hard work and significant investment by the Forestry Commission and partners in developing the visitor facilities needed to make it an exciting and effective visitor destination, not just because of the trees. Environmental projects that exist in isolation, and which do not link effectively to other elements of the visitor infrastructure are unlikely to deliver significant economic benefit<sup>39</sup>.

If you want more money out of tourism you need to attract, through effective marketing, higher spending visitors who will leave the extra spend in hotels, shops, restaurants, bars and cafes, and on travel and leisure activities. Having the right quality of hotels, shops, restaurants, bars

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<sup>38</sup> This scenario is modest indeed, as this landscape has actually experienced the Foot and Mouth disease epidemic of 2001, which resulted in a 6.6% year-on-year decline in visitor numbers to the Lake District (which at 2008 prices would result in a cost of £44.7 million for lost tourism revenue alone). The counter-argument is that some of the lakes, like Bassenthwaite, are relatively inaccessible to visitors and that the impact may therefore be modest.

<sup>39</sup> There are several other reasons for investing in environmental works that are quite sound and justifiable; but this research was tasked with asking which kinds of projects would deliver economic benefit.

and cafes, and leisure and cultural facilities is critical as without them the landscape merely underpins a relatively unproductive sector that may lose ground relative to competitor destinations. This changes the scenario away from environmental projects existing as stand-alone elements creating their own revenue, to being partners in a wider economy which aims to achieve greater economic output, with an understanding that other mechanisms need to be found to plough some of that increased turnover back into the environment itself.

The relationship between environmental improvements and economic developments is often indirect and mediated by cultural actions. The £677 million tourism economy of the Lake District is the result of a distinctive cultural landscape shaped by the economic activity of communities for 12-13,000 years; at least 300 years of investment in building the access infrastructure (roads, bridges, railways, motorways, cycle-ways, footpaths, etc); 300 years of cultural construction by writers and artists (from Hutchinson and Gilpen, through Wordsworth to Wainwright and Bragg) to make this a place anyone would want to visit; 300 years of incremental investment in the tourism infrastructure (hotels, B&Bs, guides, promenades, viewing stations, TICs, tour businesses); significant investment in the visitor attractions and events that compliment the landscape (Whinlatter Forest Park and Mountain Bike routes, Osprey Viewing Project, or Keswick Beer Festival, etc); decades of tourism brand development and marketing, and the massive year on year investment in sustaining this human infrastructure so that it can genuinely cope with millions of visitors. It is these additions to the natural environment that actually deliver the economic activity of the catchment - without them the natural environment would deliver few economic benefits.

We can only estimate what the true asset cost of the Lake District is, and therefore whether the return is commensurate with the investment – but assumptions that tourism is generating fat surpluses that can be creamed off for environmental investment are naïve. The biggest items of expenditure for tourists are accommodation, travel, and food and drink – to gain more money from visitors requires more investment in these areas, but how you get that increased spend back to pay for the management of the landscape is another issue entirely. It is what a TV sector analyst recently described as ‘the problem of turning eyeballs into cash’.



# The visitor economy and the natural environment

## Introduction

The research brief for this programme of work asked a very clear set of questions about an issue that we have encountered throughout this report, namely the divorce between the businesses (particularly tourism businesses) of this landscape and the real costs and investment in sustaining this landscape. This chapter seeks to address this key question directly, and to suggest ways that stakeholders might collectively pursue solutions in the medium- to long-term to address this disconnect and provide lasting and meaningful solutions. The brief asked:

**Why is there a discrepancy between a private sector visitor economy that underpins much of the economic development in Cumbria and the need for investment in basic environmental stewardship and landscape management?**

And,

**How can the roles of the private, third and public sectors merge and better reflect commitment to environmental stewardship for the benefit of all?**

As we have seen, the answer to the first question is relatively simple; it is because there is a disconnection between the economic infrastructure and the management of the environment. This is a classic ‘tragedy of the commons’ economic issue, with mechanisms required to ensure that the public goods created by the system are properly resourced.

Despite the £1.17 billion tourism industry sustained by the Cumbrian landscape, much of the green infrastructure and sites producing Ecosystem services are managed and maintained by either low-income farming businesses or third sector environmental organisations which are often chronically under resourced to manage the visitor infrastructure of footpaths, environmental sites and other green areas of public value. But as we have seen throughout this report, the economic benefit created by this landscape is not realised by magic, but through the workings of a complex relationship with tourism, agriculture or other economic activities. So meaningful discussions about how environmental improvements can provide the greatest economic benefit necessarily need to address the wider socio-economic issues.

Environmental projects in areas like the Bassenthwaite catchment on their own will only ever deliver marginal economic impact. In the previous chapter we explored how environmental projects might better develop the economic outcomes from ecosystem services, but another approach, and we would suggest it is appropriate for many environmental improvements which are less directly economic in focus, is to be clear that the rationale is not to create economic value directly but to sustain the landscape that allows other economic activities to create economic value. The argument then becomes how that would be funded.

## Payment mechanisms

The most important, and by some distance the largest, economic benefit of the Bassenthwaite catchment's environment is its tourism economy. The knee-jerk solution to raising more money for environmental stewardship is to go after the £1.17 billion tourism industry and use some form of taxation to return a share of this revenue to the management of the landscape itself. But as we have seen this is problematic. Tourism is not the Golden Goose that can easily be used to pay for environmental improvements – most tourism businesses are arguably too small, too unproductive and only marginally profitable. Tourism businesses in Cumbria arguably have enough on their plate trying to remain competitive and profitable; expecting them in addition to their core purpose to also sustain the landscape is a challenging idea and fraught with difficulties (see below). And whatever one thinks about tourism as an industry, it is already generating significant amounts of UK government taxation from economic activity in Cumbria – even if only 10% of the tourism turnover in Bassenthwaite catchment is returned to the UK exchequer this would still be more than £26 million, nearly ten times the amount reinvested into the landscape through CAP or agri-environment schemes at present. It would perhaps not be entirely unreasonable for tourism businesses to point to their taxation contribution and argue that they had paid already for the public purse to pursue the public good through environmental works in the catchment.

But if we accept that additional investment is required above and beyond that available at present, or in the period of austerity to come, then it does become necessary to explore how this £1.17 billion economy (and future tourism revenue) might be better utilised to support and complement environmental improvements, and this may require some new mechanisms and systems of revenue generation:

In line with UK Government Policy the Lake District National Park Authority states very clearly that it is not a pay-to-see 'visitor attraction' on its website; but an economist faced with the issues we have encountered in this report would ask 'Why not? **Why shouldn't the visitor pay directly for the public goods the Lake District offers?**'

In the United States 146 National Parks (more than half) charge an entry fee: many like the Grand Canyon National Park charging \$25 per car, or \$12 per person for visitors who arrive on foot, bicycle or motorcycle<sup>40</sup>. The virtue of such a system being that the visitor has a very direct economic relationship with the landscape they come to see, they are asked to pay for the privilege of being in it, and to pay for the management and upkeep of what they are experiencing. Such a system could potentially generate many millions of pounds for the Lake District – with say **4 million cars entering per annum paying £15 per car this would generate c. £60 million per year**. The pros of such a system are that it is direct, of significant economic scale, and could be designed to result in a clear re-investment programme in environmental improvements, and intellectually it creates a clear understanding that this landscape costs money to maintain and isn't a freebie for tourists. It also is environmentally progressive in that it

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<sup>40</sup> Though ownership patterns are quite different for US National Parks – with a much greater degree of public ownership of the landscape.

incentivises people to stay longer in the location, as a day visitor pays the same as a staying visitor, and thus pay a greater share of their ‘trip spend’ on the entry fee. The negatives are that it makes the Lake District more expensive for visitors and potentially less competitive as a global tourism destination, and it is likely to make the Lake District less accessible/affordable for people on lower incomes<sup>41</sup>. Lastly, erecting toll gates at the entry point to the Lake District National Park may reduce some of the public benefit of the space and undermine the rationale for public subsidy for that landscape’s management in the future<sup>42</sup>.

An alternative model would involve **payment to access areas of the landscape**<sup>43</sup> – i.e. individual sites or valleys. The trouble with this, of course, is that whilst most of this landscape is free-to-access via footpaths or roads, then no individual area can charge for access without seeing its visitors haemorrhage away to the free areas<sup>44</sup>. So much of this landscape is enjoyed from roads and public rights of way that one cannot really envisage such a fragmented approach being effective. Though developing GIS technology in smart phones may change this in future, providing users of green spaces with information on the upkeep costs of the places they are visiting and engaging them in forms of sponsorship or visitor payback. It is now in the realms of the technologically possible that the Lake District could have ‘**virtual turnpikes**’ or ‘**i-tolls**’ on footpaths and other routes that asked visitors to pay a fee (These could be either compulsory with some form of monitoring or simply voluntary contributions from conscientious visitors).

Another scenario for better connecting the tourism sector with this landscape’s management would be a ‘**green bed tax**’ levied on hotels and other accommodation businesses per visitor per night. Whilst this has the potential to generate significant amounts of revenue it would be highly unpopular with the tourism industry who, as we have seen, is struggling to generate reasonable returns on investment even without the bed tax. It also targets the wrong kind of visitor, leaving the least sustainable visitors, the day visitors who travel to the region by car untouched, whilst penalising the more sustainable and higher spending staying visitors. It is in other words environmentally regressive. This would also presumably affect the competitiveness of the Lake District as a staying destination vis-à-vis other destinations in the UK and abroad. A voluntary ‘visitor payback’ system managed by Nurture Lakeland has already been discussed in the case study on Bassenthwaite catchment. This is a progressive scheme but raises modest amounts of money for landscape management at present, and is probably just a part of the solution in the future.

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<sup>41</sup> It also poses a technical economic challenge in that much of this landscape is managed by, and belongs to, other individuals or organisations than the Lake District National Park Authority – can such an organisation really charge people to enter other people’s landscape? Perhaps only if the payment goes back into managing that landscape and supporting those businesses who sustain the landscape.

<sup>42</sup> We also understand that it requires specific UK government legislation to be possible.

<sup>43</sup> A variation on this theme would be a **park-and-ride system** at key entry points to the Lake District. But the Lake District is such a dispersed area and the visitor transport needs so individualistic that this has huge practical flaws, and potentially such high costs that it may not be particularly effective at raising revenue for anything other than its own running costs.

<sup>44</sup> This also could have major nuisance value for people living and working in this landscape.

In previous sections of this report it was clear that considerable economic activity benefits from this landscape without contributing to its maintenance and upkeep<sup>45</sup>. There may well be potential to use **local taxation (council tax or business rates)** to reinvest in the landscape<sup>46</sup>. However, we have already seen how marginal many of the tourism businesses are, and therefore even if it were possible to levy a **local sales tax** within the Lake District it is hard to think how this might be anything other than damaging to local economic development if it resulted in local businesses paying an overall tax bill that was higher than in competing or neighbouring communities<sup>47</sup>.

A possible mechanism for extracting more money for environmental improvements in the Lake District would be some form of **green car park levy**<sup>48</sup>. At its simplest this would involve that revenue (thought to be c. £10 million per annum) realised from car park tickets in the Lake District being set aside for an investment fund for environmental upkeep and enhancements within the Lake District. This model has the great benefit of being environmentally progressive – penalising the least sustainable visitors and encouraging non-car transport options. The practical issue here is that car park revenue is a key part of local authority income at present, and supports core services in these areas – it is unlikely for the foreseeable future that existing revenue from car parks could be set aside in this way<sup>49</sup>. It is also difficult because car parking tickets in the Lake District are expensive already relative to other places<sup>50</sup>. Pilot projects are underway to ask visitors to pay a **green premium on top of their car parking fee** which is identified for environmental projects (explained at the point of sale so that the consumer can make a judgment about whether they wish to do this or not)<sup>51</sup>. Time will tell whether this raises significant amounts of income for landscape management and enhancement<sup>52</sup>. In the longer term car park revenue could perhaps be frozen for local authorities with the share channelled to environmental improvements increasing over time.

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<sup>45</sup> See section on ‘Tourism’ or ‘Recreation and Leisure’. This ignores, of course, the fact that these businesses pay considerable amounts of taxation which indirectly returns from the UK government or EU in a range of forms.

<sup>46</sup> There are a number of National precedents of ‘market correcting’ interventions, including the Aggregates Levy, the Landfill Tax and the Climate Change Levy, both of which would have been considered unrealistic only a few years ago.

<sup>47</sup> This might also create perverse economic incentives to relocate tourism businesses outside the National Park simply to avoid the higher taxation levied.

<sup>48</sup> Thank you to Stephen Ratcliffe, Lake District National Park Authority, for a clear summary of the issues and challenges. We understand that the pilot is taking place with a car park in Hawkshead.

<sup>49</sup> The car parks of the Lake District belong to so many different authorities that coordinated action might always be impossible. Car parks belong to the National Trust, Lake District National Park Authority, South Lakeland District Council, Allerdale Borough Council, Eden District Council, and the Forestry Commission.

<sup>50</sup> Ian Brodie, Friends of the Lake District, was particularly helpful in discussing the issues in this section. Whilst his views and the author’s are slightly different, the exchange of ideas was useful and improved this paper.

<sup>51</sup> An unintended consequence of such schemes can be that it encourages people to avoid official car parks and damage roadsides and other open spaces. This would require careful management.

<sup>52</sup> The debate surrounding this pilot is interesting, with some stakeholders seeing it as a way to invest back in the direct vicinity of the car parks in public toilets, signage, landscaping and public realm works, and others believing it should be for wider landscape access, enhancement and interpretation. Which is an interesting example of how ‘green infrastructure’ in the Lake District is both the relatively small urban green spaces, but also the vast green spaces that characterize this landscape, the fells, valleys, lakes and farmland. Sometimes these demands are competing for resources and difficult choices are required.

Another idea worth exploration would be a **road charging scheme** for the Lake District. This idea was recently developed by Cumbria Vision with an ideas paper proposing taking £1 for every visitor day; generating an income for partners in the region of £15 million per annum. It is believed that no rural destination in Europe has implemented such a scheme<sup>53</sup>, but precedents exist in urban areas. The London congestion charge implemented in 2003 raises revenue for reinvestment into public transport. The charge is £8 and is monitored with CCTV and ANPR technologies checked against DVLA records, with a system of fines imposed for non-payment. In 2006-7 the scheme raised revenue of £254 million, with £130 million running costs. Once other charges were deducted this left a net income of £89 million for re-investment. Such a scheme would be highly unpopular, controversial and expensive to set up (as would several of these revenue generating measures). Whether such a scheme could be implemented in the Lake District is debatable due to its non-municipal nature: and would require champions who could advocate its value and necessity. **Such a scheme at £2 per vehicle would generate (from 8 million vehicles per annum) approximately £10 million of net income after running costs<sup>54</sup>.**

A final mechanism for unlocking significant revenue from the Lake District's visitor economy to re-invest in environmental works would be a **'second home landscape tax'**. There are approximately 4,000 second homes in the Lake District<sup>55</sup>, and possibly as many as 1500 in the Bassenthwaite catchment alone<sup>56</sup>. Whether this is a negative issue or not is a matter of perception, but previous studies have shown that community cohesion and local services and amenities start to suffer if the proportion of second homes becomes too high. This tax would address the issue raised by our research of people owning property in the Lakes but being economically divorced from its management – if it succeeded in extracting say £500 per annum extra from second home owners this would raise an additional £2 million per annum. Whilst second homes are not strictly speaking tourism assets, they are owned by people from out with the communities who wish to benefit from the tourism landscape by owning residential property in the Lakes. The authors of this report understand that it is within the powers of local authorities to raise additional revenue from houses which are not the owner's primary residence<sup>57</sup>.

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<sup>53</sup> Thank you to Martyn Staveley, Cumbria Vision, for sharing this research ('Potential for Road Price Charging for the Lake District National Park': As Martyn wrote, "The principle of Road Charging dates back to the Smeed Report of 1964, all current work relates to charging to enter city centres or use urban road networks; there is no evidence to support any scheme being implemented in a rural setting in Europe. There was a study published in 2000, looking into the possibility of road pricing for the Yorkshire Dales National Park and more recently the Commission for Rural Communities published a report on road pricing in Rural Areas".

<sup>54</sup> Figures provided by Martyn Staveley, Cumbria Vision.

<sup>55</sup> Lake District Economic Futures Study (2004)

<sup>56</sup> This is informed speculation, as no data was available to validate this assumption – As 39% of the tourism bed spaces are in the catchment it is perhaps not unreasonable to take this as a working assumption of the proportion of second homes in the catchment.

<sup>57</sup> This section includes this analysis of the options of raising revenue for environmental improvements so that these can be weighed up in terms of their relative merits as revenue generation sources.

The options sketched out above involve a significant, and perhaps unpalatable, degree of change to both infrastructure and thinking about the Cumbrian landscape to be feasible<sup>58</sup>. At present the solutions are about adding value to the market.

## Strategic support for tourism

The Cumbria Tourism's strategic response to challenges of the tourism economy has been to focus on improving the quality of the product and experiences and focus on those tourism products and experiences that have the potential for growth (e.g. trying to make Cumbria the UK's Adventure Capital). The North West Tourism Strategy sets out the following priorities:

- Enhanced communication with visitors
- Higher levels of productivity and performance from businesses operating in the visitor economy
- Improved products and higher quality visitor experiences for all visitors to the region
- Improved levels of skills for people working in the visitor economy
- All activity in the tourism and visitor economy to be based on the principles of sustainable development

Cumbrian environmental projects need to be more strategic in future if their rationale is to unlock tourism value from the environment. It is not wrong per se for environmental projects to link to tourism, but if this is the way that green infrastructure and Ecosystem services are to raise revenue then the projects that emerge in the future need to communicate how they will a) Enable and support higher value added tourism activity, and b) Avoid simply perpetuating low value added tourism activity.

## Three ways to contribute tourism value:

Our research suggests to us that there are three powerful, pragmatic and practical ways that environmental organisations and projects can punch above their weight in direct socio-economic terms:

1. Utilizing environmental assets holistically by developing itineraries and packages of experiences that **persuade visitors to lengthen their stay** (and thus their spend on the key spend items of food and drink and accommodation). Such packages need to include those Lonely Planet key activities sleeping, eating, drinking, shopping, entertainment and sights (and transport). This may require supporting business start ups that can pull together packages and experiences<sup>59</sup>.
2. Working closely with marketing professionals to develop brands and marketing that is specifically targeted at high spending cultural visitors who might be interested in landscape, biodiversity and conservation as part of the culture product offered by the Lake District. Even relatively small incremental shifts to higher spending culturally

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<sup>58</sup> This right now seems unlikely; but as this research forms part of the Bassenthwaite Vital Uplands project which is looking in some cases several decades ahead in terms of planning we have looked ahead as well. It is quite possible that in the future some radically different approaches are taken to this landscape and how it is funded.

<sup>59</sup> Biodiversity can be commercially packaged in surprising and creative ways – see <http://www.naturetrek.co.uk/>

motivated visitors can create significantly higher tourism revenue – **changing the visitor profile**, rather than simply attracting more visitors is often the most sustainable option. Effective natural and cultural environments build relationships with consumers and it may be that environmental organisations can build these relationships to encourage visitors to stay involved in the story of this landscape and return more often as a result.

3. Perhaps the best way to contribute and punch above weight, because it can be done for relatively small amounts of money, is delivering interesting **programmes of events and activities** that can attract significant media attention. Hadrian's Wall Heritage Ltd recently achieved national PR success for their illuminating Hadrian's Wall Project with light beacons and outdoor performances along the length of the wall. Two things need to be said; firstly that event used the skills of multiple partners, including key relationships with creative and artistic partners, but such work can profoundly change the way that people view landscapes and can change the visitor profile. Such events can also result in significant footfall to dispersed landscapes, filling accommodation, and resulting in considerable visitor spend.

If environmental initiatives can demonstrate that they can deliver against these objectives then new economic relationships can be created which utilise new funding sources.

## Connecting tourism and environmental stewardship

As we have seen, the discrepancy between the scale of the tourism revenue generated and unlocked by tourism businesses and the struggle to raise even relatively modest sums of investment for environmental stewardship and investment is fairly easy to explain. The two things are largely disconnected. Historically people have confused 'big' tourism numbers with 'good' tourism numbers. There are no magic 'tourism millions' sitting about waiting to be claimed for environmental works. Tourism in Cumbria has structural issues that mean it is locked in a battle to modernize to compete in an increasingly competitive global tourism marketplace.

One key solution has to be effective partnership working between environmental and tourism partners to ensure that the visitor experience in Cumbria is of a sufficiently high quality that it can compete in the future. Previous research for the Lake District World Heritage Site Project has suggested how powerful economically even small proportional shifts to higher value visitors segments can be. Cumbria has an exceptional landscape but it will take real imagination and creativity to ensure that this will continue to capture people's imaginations in the future. The most important issue is how Cumbria can develop a future tourism industry that is capable of competing globally, whilst at the same time providing high quality jobs for people within Cumbria. Ensuring that this ambition isn't scuppered by the negative effects of a degraded ecosystem is the minimal requirement of landscape management.

But the ambition needs to be even greater; this landscape may need to be brought to life in radically new ways that improve access and offer new experiences for visitors that they cannot experience anywhere else. The lesson of the past decade has been the importance of translating landscape and environmental assets into experiences that people will pay to access. The

ambition for the next decade has to be to find new ways to enable people to access this landscape intellectually and physically in ways that have high economic value.

It is obvious to everyone concerned that new ways have to be found to sustain this landscape economically, with new mechanisms required to unlock greater value from visitors or end-users. The Nurture Lakeland partnership offers a progressive model of how the private, third and public sectors can collaborate to this end – but the next decade needs to see that model (or new and improved versions of it) scaled up to ensure that investment required for this landscape can at least be partly unlocked through partnership working.

Finally, the divorce between the economic activity resulting from, or taking place in, the Cumbrian landscape and the paucity of resources for managing it will probably require some significant strategic solutions in the next decade. The authors of this report suspect that this may take one of two forms (or both simultaneously); firstly a more powerful and effective argument to government at national and EU level of the multifunctional nature of this landscape and the high public value it creates which would result in greater investment in the management of this landscape, or, secondly, changes to the infrastructure of this landscape which would ask users to contribute directly to its management as a precondition for entry or use. One thing is for sure, this landscape and its ecosystem services are not ‘free goods’, they are the products of often long term investment usually by the landscape’s inhabitants. Their future nurturing will require substantial investment but the key question is by whom, and who really benefits?



# Conclusion

## Key issues

**Green infrastructure should be part of an overall holistic economic vision not a peripheral activity.**

**There is a real need to plan strategically at a landscape scale to maximise the outputs and outcomes of green infrastructure across Cumbria.**

**The influencing power of the public sector is likely to decline relative to that of the private sector – partnerships with the private sector are likely to be critical to delivery.**

**The benefits of Cumbria’s green infrastructure are not shared equally – huge disparities exist across Cumbrian communities that reflect differences in affluence.**

**The direct economic benefit of green infrastructure is realised by the economic infrastructure of any given locality, with the location, scale, quality and accessibility of green infrastructure being critical determinants of impact effectiveness.**

**Many of Cumbria’s green infrastructure is multi-functional – the Lake District for example, is as much a cultural landscape as a natural landscape. This is not a blank slate.**

**Green infrastructure and ecosystem services are about more than GVA productivity – they also provide a range of social outcomes that are of high value – that can compliment a productive and effective economy.**

## Lack of strategic focus?

In the course of our research and interviews with more than 100 stakeholders we have found appreciation of the economic value of ecosystem services or green infrastructure amongst economic development professionals to be either very low, or perhaps worse, to be readily agreed in rhetoric but disputed in practice when it comes to investment decisions. The problem is not, however, a lack of relevant strategic policies.

Yet these strategic good intentions are not embodied in investment decisions. The brutal reality is that economic development professionals are primarily focused on the economic infrastructure and the environment just isn’t deemed to be a priority in many cases. Looking at the evidence in terms of GVA this is an understandable position if the goal is economic growth. One stakeholder in West Cumbria summed this view up as follows, ‘A green slum is still a slum, people here need jobs as the priority’.

## Biodiversity as a negative factor in economic development

The antipathy towards investment in the environment economy is in part a reflection of frustrations developed in other areas of activity. The interviews carried out as part of this research revealed concern amongst economic development professionals in key regeneration areas in Cumbria about, what they perceive to be, a lack of proportionality in the interpretation of legislation protecting biodiversity on development sites. The development of brownfield land or former industrial sites is often slowed down and made considerably more expensive because of biodiversity legislation. There is limited appreciation that such sites, because of human neglect, have some of the greatest biodiversity interest. This issue needs addressing if economic development and environmental agendas are to work more effectively together. There is a frustration that the interpretation of this legislation makes no allowance for the economic challenges faced by some communities, and that the enforcers of this legislation could perhaps benefit from having more awareness of economic issues. Equally, there is an argument to be made that those involved in economic development should have a greater knowledge of environmental legislation and a greater understanding of the environmental duties and requirements placed on planning authorities and environmental agencies. Whatever the rights and wrongs of such a situation, such a climate of mutual distrust is not conducive to the development of green infrastructure initiatives.

## Targeting and focus

As we have seen in this report there are mechanisms which can allow environmental projects to be better targeted to secure economic, social and community benefits. We support the approach taken by the Forestry Commission in terms of applying public benefit recording analysis as to which interventions are most appropriate and which ones are likely to be most effective at achieving any given output measure.

This is important because if environmental organisations are to talk credibly about having an impact on health, civic pride, wellbeing or economic development then this should be based upon their projects being developed to target most effectively the communities where interventions are most needed. As we saw in the Bassenthwaite catchment case study, whichever one of the 11 economic benefits is the target, there is now extensive evidence available which can help to ensure that environmental projects are effectively targeted.

## A green vision for growth?

Green infrastructure risks being the low value spend items at the periphery of economic change and development, part of tactical delivery rather than at the heart of a more ambitious strategic vision – and provided with token support rather than being at the heart of economic strategy.



**Figure 11** The idea that Cumbria needs an 'Eden Project' is, of course, a regeneration cliché, the rural equivalent of the 'Bilbao effect' for cities, and it is hard to see where investment for such a project might come from – but if Cumbria wants to be a world leader in how people experience landscape and biodiversity then it will need world class facilities.

Public spending appears to be entering an 'age of austerity', with billions of pounds of public sector spending cuts. All commentators agree that the pressure on the public purse will be greater in future and value for money is likely to be an even greater issue, with environmental projects likely to have to prove more than ever that they are good value for money. Something has to change or environmental initiatives will lose out.

Much of the research to date has been aimed at showing that ecosystem services or green infrastructure has an economic value<sup>60</sup>. But perhaps the bigger challenge in Cumbria is to be able to contextualise the value offered relative to other economic choices for any given area. Our interviews in Cumbria suggest that almost everyone accepts the 'underpinning' argument, but faced with finite resources and difficult investment decisions ecosystems and green infrastructure are repeatedly perceived to be less effective at delivering the key economic outputs. The intellectual acceptance of the economic value of ecosystem services or green infrastructure does not translate particularly well into economic development investment. Because of this we think there are two paths that can be chosen:

- 1) Acceptance of a degree of separation between environmental and economic approaches, with environmental initiatives primarily about sustaining or underpinning the economy - under this approach the non-environmental bits of the economy deliver the GVA or economic growth, and the environment sustains the system.
- 2) Fundamentally reconnect the environmental initiatives and the economy – with obligations on both sides, with environmental projects tasked with a more strategic economic approach that is more than underpinning, and is also about growth.

The implications of the path chosen are quite profound, with no easy solutions. We believe the first option might be preferable, but it requires a change of mentalité from economic development organisations (and a rethink at a national and international scale about the focus

<sup>60</sup> See for example, TEEB – The Economics of Ecosystems and Biodiversity for National and International Policy Makers – Summary: Responding to the Value of Nature 2009. TEEB is hosted by the United Nations Environment Programme and supported by the European Commission, the German Federal Environment Ministry and the UK government's Department for Environment, Food and Rural Affairs, recently joined by Norway's Ministry for Foreign Affairs and The Netherlands' Ministry of Housing, Spatial Planning and the Environment.

of economics and the measurement of economic outcomes) that we think is unlikely in the current economic situation<sup>61</sup>.

The latter option also poses challenges but is, we believe, more likely to be successful in the foreseeable future in Cumbria. But it would require a radical new approach, new attitudes, courage, risk taking and innovation. It would require Cumbria to have a radical green vision for economic development that built its economic strategy around significant transformational economic objectives and projects that had a strong thematic focus on landscape and biodiversity<sup>62</sup>. In other words we are suggesting that Cumbria may also need environmental projects that are about delivering, or significantly contributing to, economic development and growth rather than simply the current approach which is more about ‘underpinning’ or ‘sustaining’ the economic status quo.



**Figure 12 Cumbria may well require inspired architecture and design that changes the relationship between people and the landscape. If the Cumbria doesn't do this other places will, for example, The Jean-Marie Tjibaou Cultural Centre, New Caledonia (above)**

This approach would be challenging, if for no other reason than it flies in the face of some entrenched intellectual positions (with many environmentalists suspicious of economic growth as an objective, and conversely many economic development professionals suspicious about the contribution of green spaces or projects, or even relatively hostile to the delays and cost incurred as a result of biodiversity meeting development at present). Such an approach also requires a reconnection of environmental and economic agendas, which is made even harder by the organisational and funding structures which often divide these functions. Many of the environmental projects discussed in this report were funded from sources that place an output emphasis on heritage, environmental or community outcomes, and in some cases actively discourage commercial focus. In other words from an economic perspective they provide ‘perverse incentives’.

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<sup>61</sup> It is fair to say that many people working on GI or ecosystem services issues are frustrated by shortcomings of the current economic methodologies and thinking, and favour radical changes to the model and methodologies. Achieving this is clearly beyond the scope or brief of this current report, so we have used primarily used the existing models. This is, we believe, essential if the goal is to have an effective dialogue with economic development professionals.

<sup>62</sup> A number of key stakeholders interviewed for this report revealed frustration that Cumbria at times in the past has appeared to have an economic development strategy aimed at making it just like everywhere else – playing catch-up rather than building on its key assets.

This new vision could happen if accommodation can be found between the requirement for economic growth and sustaining the ecosystems and green spaces that underpin it. Cumbria has an opportunity to differentiate itself from competitor regions all over the world based on its world class cultural and natural landscapes - To be a world leader in terms of how people think about and experience landscape, and a world leader in the management of, and access to, landscapes. That sounds like radical environmental propaganda except for the fact that Cumbria has a long track record at this, and has done a number of things in the past and in the present, that make this almost a logical conclusion to its historic development.



**Figure 13 Cumbria may well require innovative new approaches to urban planning to change perceptions of communities like Carlisle or Barrow. Could these places revolutionise the way they are perceived externally by embracing green design? The New York Highline provides a stunning example of such a project which has achieved international recognition, and which has been a fusion of urban planning and design, community engagement and cultural programme.**

## Cumbria's landscape USP

The Lake District's bid to UNESCO for World Heritage Site status is based on the global role this landscape played in shaping how people around the world think about landscape. The aesthetic culture and politics that this landscape inspired helped create the global conservation movement, the national park movement, and the establishment of organisations like the National Trust. The whole concept of 'human ecology' emerged out of the writings of Wordsworth and others. In short, people all around the world learned to see landscape through new eyes thanks to the effect of the Lake District (or more accurately Cumbrian) landscape. Cumbria already has world leading cultural organisations like the Wordsworth Trust, and an unparalleled cultural and creative heritage linked to landscape. It already has one UNESCO World Heritage site 'cultural landscape' in Hadrian's Wall.



**Figure 14 Cumbria may well require high quality habitat and biodiversity spaces within the heart of its urban areas to meet the demands of residents in the future. The London Wetlands Centre (above) is just one example of many of major urban centres investing in ‘placemaking’.**

West Cumbria has already seized onto another ecosystem service at the heart of its economic strategy by embracing the Energy Coast Strategy, and renewable energy industries. Cumbria Tourism’s Adventure Capital Strategy is aimed at reinventing this landscape as experiences that allow people to experience the countryside with a rush of adrenalin. The Bassenthwaite Restoration Programme has piloted new approaches to catchment scale management. Heritage Lottery Fund landscape partnerships have been, or are being, developed for the North Pennines AONB, the Arnside and Silverdale AONB, the Solway AONB, Morecambe Bay, and the Hadrian’s Wall corridor. Cumbria has long had an education infrastructure for subjects linked to landscape management and creative and cultural responses to landscape. And there have been aspirations for ‘iconic’ projects in Cumbria linked to landscape as at Lowther Castle. Many of the ingredients already exist, but an overall vision for the future is perhaps lacking.



**Figure 15 Does Cumbria have the experiential tourism product to allow visitors to understand its cultural and natural heritage? Competitor regions like Laponia are developing high value, high quality tourism experiences of this kind?**

## Developing a green strategy for growth

This report is not a green infrastructure strategy, but a scoping piece of analysis which illuminates the issues, evidence and opportunities. A progressive green infrastructure vision for Cumbria needs to capture not just the underpinning role of ecosystems and green infrastructure, it needs also to put the green back into the heart of a strategy for growth for Cumbria. It might also need to present a holistic case for the contribution of the landscape and biodiversity, and how the economic contribution of those assets can be maximised in the future for the benefit of communities.

To achieve this vision Cumbria may requires bold new infrastructure to enable people to have new ways to access and experience landscape and biodiversity – It needs world-class ‘grey infrastructure’ to compliment and unlock the value from its world-class ‘green infrastructure’.



Figure 16 Cumbria is competing with destinations all around the world which are using creative design and contemporary architecture to provide new ways of living in, and experiencing, landscape and biodiversity. These vacation home examples from Australia, Norway and Argentina (above), and Costa Rica, Sweden and Australia (below) show how innovative this approach can be. Does Cumbria have the accommodation quality to match emerging competitors like these? (Images from <http://www.trendir.com/house-design/tag/vacation-houses>)

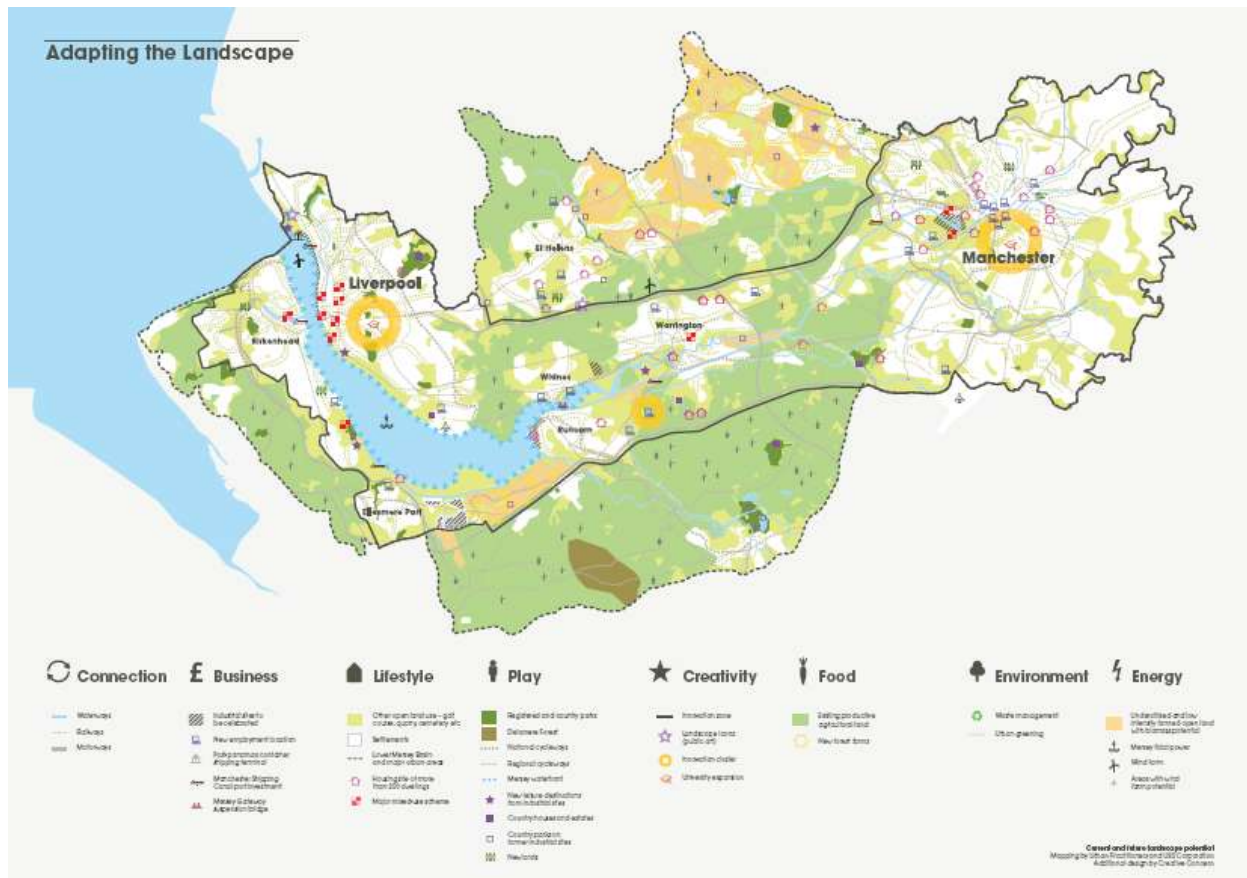


Cumbrian urban spaces are often disappointing in terms of quality of place, reflecting more their industrial past, or present, rather than the high quality landscape that is often exists in close proximity. A worthwhile green infrastructure strategy for Cumbria would include some vision for the development of communities like Carlisle and Barrow that was built around high quality green public spaces and habitats. Barrow, for example, has a number of wards that suffer from some of the worst economic and social deprivation in the UK, an effective green infrastructure strategy would utilise the high quality natural landscapes around Barrow, including Walney Island and the close proximity of the Lake District. Likewise the development of Carlisle might be built around its relationship to its river corridors and the high quality of its surrounding landscape.



Figure 17 Around the world cultural or natural tourism businesses are emerging to provide the experiences that make accessing landscape or biodiversity a valuable commodity. See, for example, <http://www.naturetrek.co.uk/>

Cumbria has long suffered from geographical fragmentation with relatively poor linkages between different Cumbrian communities. Encouraging initiatives are underway to better connect viable spatial areas like Morecambe Bay, but we would suggest this requires significant investment in masterplanning to be effective. A model for this exists with the **'Adapting the Landscape'** project for the Liverpool and Manchester area<sup>63</sup>.



**Figure 18** The 'Adapting the Landscape' project has started to look at how green infrastructure and other economic, cultural, social and natural assets can be masterplanned to ensure that the development of the £50 billion economy of the Liverpool and Manchester area is strategic and holistic. We would suggest a similar approach is required for Cumbria. The key point is that in this model green infrastructure is part of the masterplan, rather than being peripheral.

This project takes a landscape scale planning approach and explores the possibilities for the following:

- **Greening the cities.** Taking the landscape of the Mersey Basin into the heart of the cities with more street trees and enhanced green infrastructure.
- **Embracing the waterfronts.** Creating and improving green access along the river and other waterways, stretching into the heart of the city regions and where possible, new water bodies.

<sup>63</sup>See <http://www.nwda.co.uk/media-library/publications/quality-of-life/adapting-the-landscape.aspx>

- **Creating a diverse landscape.** Making the Mersey Bioregion the most dynamic, productive and biodiverse landscape through land art, farms and planting.
- **Managing a productive landscape.** Producing energy from wind, tides, biomass and the sun.
- **Facilitating an accessible landscape.** Establishing a fine grain network of paths and bridges to accompany existing strategic arteries with an emphasis on localism.
- **Creating a landscape for prosperity.** Continuing the Mersey's history of innovation. In centres like Daresbury it is environmental technologies leading our way into a low carbon future.
- **Building a resilient and playful landscape.** Utilising funding for flood defences to respond to flood risks and create iconic cultural landmarks, public space and new biodiverse habitats as part of 'Mersey Playgrounds'<sup>64</sup>.

In terms of dialogue with economic development professionals this approach has significant merit because it has put green infrastructure back into what is really a long-term spatial vision for economic development. It also unashamedly focuses on those areas that create sizeable economic outcomes and looks to compliment them with natural and cultural assets. In other words, it starts with the economy, not the environment. We would suggest that rather than the Cumbria Green Infrastructure Forum developing as a next step a 'green infrastructure strategy', it should ensure that this kind of approach is embedded into the economic vision for Cumbria, and the vision for key economic areas like Carlisle and Barrow.



**Figure 19** Cumbrian urban spaces may well benefit from valuable perception changes if they could project themselves as being 'green' spaces that compliment the natural environment of rural Cumbria. At present Cumbrian urban communities are often marked by an industrial or post-industrial aesthetic, which feels at odds with their proximity to the countryside.

## Practical recommendations for green growth

Future green infrastructure initiatives aimed at direct economic benefit should be targeted to addressing the following issues:

- **Positively changing internal and external perceptions of Cumbria, and particularly those communities which have the greatest need of investment and development**

<sup>64</sup> See <http://www.nwda.co.uk/media-library/publications/quality-of-life/adapting-the-landscape.aspx>

- **Providing high value experiences/products that can unlock economic value from landscape or biodiversity to positively affect the relatively low GVA rural economy, with wage rates 20-30% below UK averages**
- **Providing high quality employment, particularly for young people in Cumbrian communities**
- **Addressing disparities in prosperity, health and wellbeing across Cumbrian communities and particularly improving the quality of life for residents of communities suffering from multiple-deprivation**
- **Supporting the productive private-sector elements of the economy which have a landscape management role, to underpin the environment with a sound and sustainable economic infrastructure**
- **Reducing the risks and costs of negative environmental events like flooding and climate change – the November 2009 floods had a cost of £200 million**

Key to doing these things effectively will be better targeting of environmental initiatives to ensure they are of the most appropriate scale, form, and quality, and located in the optimum places to achieve these goals.