



Natural Economy Northwest

Identifying spatial relationships between natural environment quality and multiple deprivation

Executive summary

Commissioned from TEP by the Forestry Commission
for Natural Economy Northwest



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Preface

This is one in a series of reports produced between 2007 and 2009 within the Natural Economy Northwest programme. Natural Economy Northwest is a regional partnership programme led by Natural England, the Northwest Development Agency and the SITA Trust on behalf of a wide range of economic and environmental partners. The main focus is to deliver priority action 113 in the Regional Economic Strategy, for maximising the natural environment's contribution to the regional economy and quality of life. The programme also includes the Enriching Nature SITA Trust biodiversity programme and the aspirations of Natural England and other environmental and economic partners to mainstream the natural environment within sustainable economic development. Key work areas within the programme are for increasing awareness, commissioning and disseminating research, providing direction, contributing to the development and delivery of regional and sub-regional strategies, facilitating project development and delivery, promoting and facilitating Green Infrastructure and Natural Tourism, encouraging strategic investment for natural economy projects, and influencing training and skills innovation, guidance and benefits for business.

You can contact us through our website. We are interested in the ways that this report has been of use to you so that we can take into account in the further development of the programme.

This particular report was in partnership with the Forestry Commission, capitalising on the work done by them and TEP on the development of the Public Benefit Recording System methodology.

Dr Will Williams
Programme Director.
www.natureconomynorthwest.co.uk

1. Summary Report

Introduction

- 1.1 Natural Economy Northwest (NENW) is a regional partnership programme, led by Natural England, on behalf of a wide cross-sectoral partnership to deliver priority action 113 in the Regional Economic Strategy¹. At the heart of the NENW's ethos is the vision for a prosperous economic future with a thriving natural environment for the northwest. The focus of the programme is to maximise the economic benefit from existing and new investment in the natural environment.
- 1.2 The NENW programme is underpinned by its Business Plan with the strong principle of working with and through existing strategies and organisations, towards an exit strategy in December 2009. Its emphasis is on the 3Ds – Direction, Delivery and Dissemination:
 - *Direction* - to provide leadership on priorities and promotion at the Regional/sub-regional level.
 - *Delivery* to enable action on the ground through new project planning approaches, training and development and joined up funding in a strategic framework.
 - *Dissemination* – to make research on economic benefits, best practice and the value of healthy ecosystems available to practitioners in a clearly understood, easy to use way.
- 1.3 This study progressed the work of a pilot report, produced by TEP in 2005, which analysed the spatial relationship between key natural environmental assets and varying degrees of multiple deprivation in Lancashire. This study expands the pilot work to the entire Northwest region and considers a broader range of natural environmental indicators to provide a geographical representation of where socio-economic deprivation and natural environmental value exist, and any correlation between these issues.
- 1.4 Both the pilot project and this work have been led by the Forestry Commission (FC) on behalf of NENW, and overseen by a project steering group.
- 1.5 There are three main stages to this work:
 - Part 1: mapping socio-economic deprivation across the region
 - Part 2: constructing and mapping a region-wide natural environment index; and
 - Part 3: examining the spatial relations between socio-economic deprivation and the natural environment index

¹ Priority Action 113: Develop the economic benefit of the region's natural environment through better alignment of environmental activities and economic gain. Northwest Regional Economic Strategy, 2006

The PBRS Approach

- 1.6 The study will utilise the Public Benefit Recording System (PBRS): an aid to strategic planning and decision making, with an **ethos** that greatest public benefit is likely to be secured across overlapping social, economic and environmental need and opportunity.
- 1.7 There is no universal PBRS tool. Rather, it is an **approach** which builds evidence from a wide range of data sources (agreed by partners), using the spatial insights provided by GIS to anticipate and measure the potential socio-economic and environmental benefits likely to be secured through policy / funding intervention.

Part 1: Socio-Economic Deprivation

- 1.8 Socio-economic deprivation was mapped using the Index of Multiple Deprivation (IMD 2004)², a widely accepted dataset and as such the ideal choice for assessing socio-economic deprivation in this Natural Economy Northwest project.
- 1.9 IMD 2004 is constructed of seven domains of deprivation:
 - Income deprivation
 - Employment deprivation
 - Health deprivation and disability
 - Education, skills and training deprivation
 - Barriers to housing and services
 - Living environment deprivation; and
 - Crime
- 1.10 Each domain contains a number of indicators. The criteria for the inclusion of indicators within IMD were that they should be:
 - 'domain specific' and appropriate for the purpose;
 - measuring major features of that deprivation;
 - up-to-date;
 - capable of being updated on a regular basis;
 - statistically robust; and
 - available for the whole of England at a small area level in a consistent form.
- 1.11 Indicators were combined to form a 'score' of Domain-specific deprivation, and the Domains were then combined to produce a total IMD 2004 score. Lower Super Output Areas (SOAs) were used as the smallest geographical area for the calculation and expression of IMD 2004. SOAs have a minimum population size of 1,000 but typically contain 1,500 people.

² 'The English Indices of Deprivation 2004 (revised)', ODPM, 2004

Part 2: The Natural Environment Index

1.12 The Natural Environment Index (NEI) was constructed using a variety of datasets. To ensure synergy with IMD 2004, the NEI used a similar methodology, i.e. consisted of a number of Domains and indicators, and was represented geographically at SOA level. The four Domains chosen to build the NEI were:

- Resource Quality
- Habitat Quality
- Naturalness; and
- Landscape & Visual Quality

1.13 Selection of indicators used in the NEI were based on the same criteria as those used in the construction of the IMD 2004, viz. they should be domain specific, measure major features of that Domain, be up-to-date, be capable of being updated on a regular basis, statistically robust and available for the whole of the region in a consistent form. The Steering Group considered many different datasets but selection was based on these criteria.

1.14 The table below shows the indicators included within each of the NEI Domains.

Resource Quality	Habitat Quality
<ul style="list-style-type: none"> • Air Quality • Water Quality • Derelict, Underused and Neglected (DUN) Land 	<ul style="list-style-type: none"> • Sites of Special Scientific Interest (SSSIs) • Ancient Woodland • Ecological Network data
Naturalness	Landscape and Visual Quality
<ul style="list-style-type: none"> • Water • National Habitat Inventories • Local Wildlife Sites • Open Access Land 	<ul style="list-style-type: none"> • Green Flag Parks • Greenspace (urban areas only) • National Parks • Areas of Outstanding Beauty (AONBs) and Heritage Coasts • Countryside Quality Counts designations of Joint Character Areas

1.15 The NEI represents the natural environmental value of different parts of the region. However, the term ‘value’ is not intended to be pejorative. Rather, the results of the NEI provide a framework for the different types of intervention which can be considered for different areas. High environmental value suggests protection, whereas low environmental value indicates that remedial and re-creation work is required.

1.16 Figures 1.1 and 1.2 show the regional levels of socio-economic deprivation and the NEI respectively. The maps are coloured so that low socio-economic deprivation and high natural environmental value are represented as blue, running through green, yellow and orange, to red representing high socio-economic deprivation and low natural environmental value.

Figure 1.1: Multiple Deprivation within the Northwest (IMD Data Source ODPM, 2004)

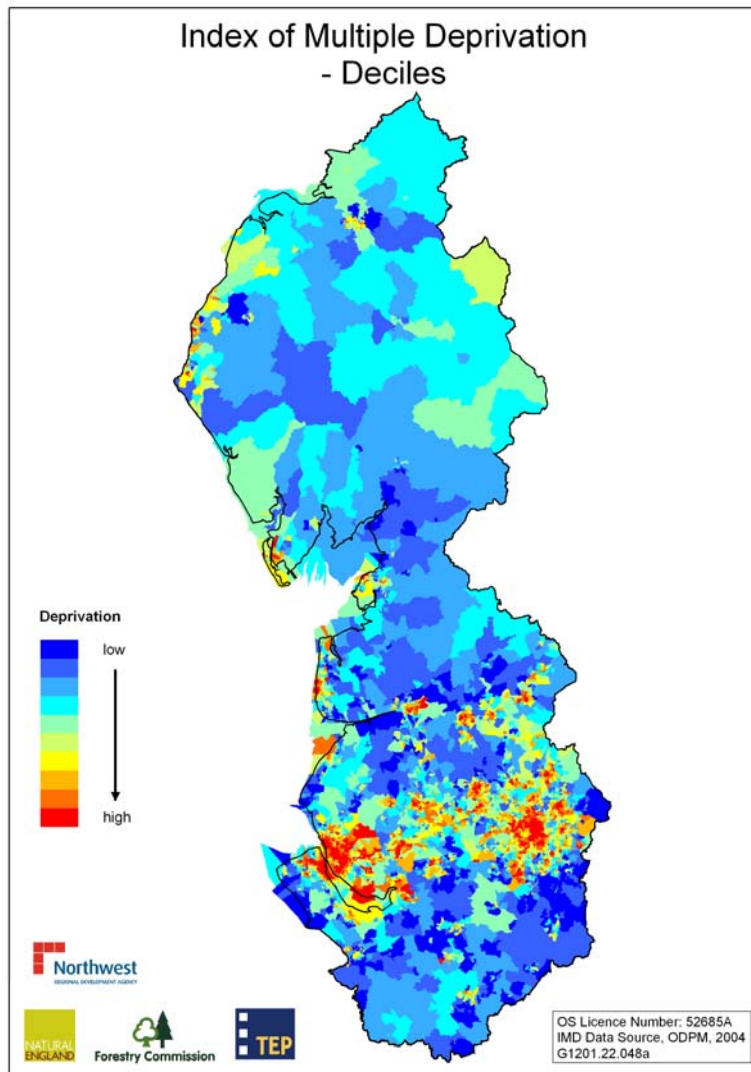
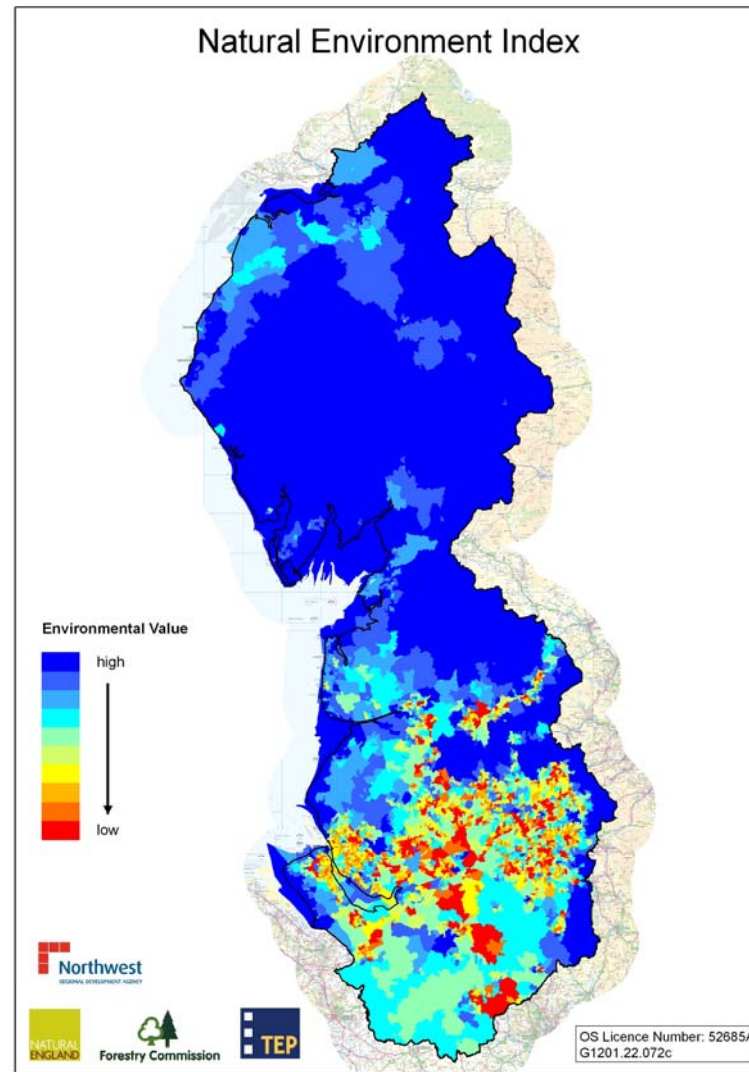


Figure 1.2: The Natural Environment Index



- 1.17 The NEI and IMD 2004 were also benchmarked in terms of their rural / urban classification. This is particularly useful for the rural areas and gives a greater degree of differentiation than otherwise seen. Similarly the use of sub-regional benchmarking produces a greater refinement of the data at a local scale, so a series of sub-regional maps were also produced.

Part 3: Spatial Relationships

- 1.18 Analysing the spatial relationships between IMD 2004 and the NEI will aid future natural environmental intervention choices in order to maximise the socio-economic return on investment, and will also guide socio-economic intervention choices to maximise benefit from and for the environment.
- 1.19 Four scenarios which may require different types of interventions were examined. These scenarios are summarised in the table below.

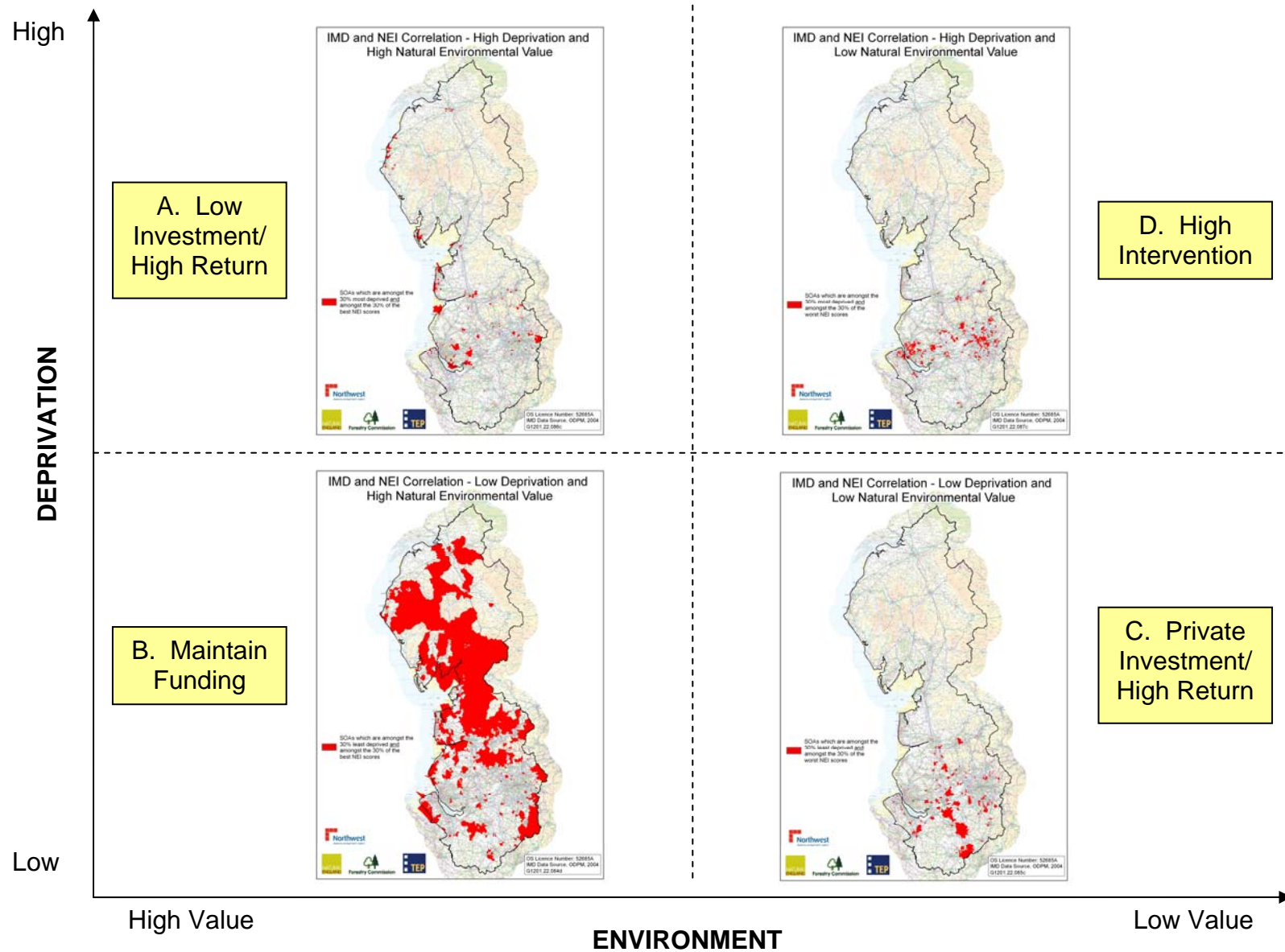
	Socio-Economic Deprivation	Natural Environmental Value
Scenario 1	low	high
Scenario 2	high	low
Scenario 3	low	low
Scenario 4	high	high

- 1.20 Areas with low levels of socio-economic deprivation were defined as those SOAs which are amongst the least deprived 30% of the region. Equally, areas with high levels of deprivation were defined as those SOAs which are amongst the most deprived 30% of the region. Similarly areas with the 30% extremes of the NEI were used to define those areas of high or low natural environmental value.
- 1.21 It was not the intention of this study to assess which types of interventions were appropriate, rather whether the work undertaken in the first two stages would allow the spatial relationships to be analysed. Figure 1.3 represents the results of the four scenarios on a regional scale and the associated interventions.

Suggested interventions are:

- A. low investment / high return: where the natural environmental value is relatively good and deprivation high, lower levels of investment are likely to produce a high socio-economic return;
- B. maintain funding: maintaining the current levels of funding are likely to maintain the existing good socio-economic and natural environmental standards;
- C. private investment / high return: where the natural environment is in poor condition but socio-economic standards are relatively high, interventions are likely to be based on private investment (e.g. from developers) with a likely high environmental return;
- D. high intervention: public sector intervention and investment should be targeted to those areas where low value natural environments coincide with high socio-economic deprivation.

Figure 1.3: Northwest Scenario Maps and Interventions



Discussion and Recommendations

- 1.22 The suite of maps produced in the study show that it is possible to assess the relationships between socio-economic deprivation and natural environmental value.
- 1.23 Issues for further development and investigation did emerge during the study:
- The concept of a NEI should be more widely discussed across the Northwest to ensure that it is accepted and understood by regional and sub-regional policy-makers and stakeholders. This could be achieved through a conference or series of workshops;
 - Consideration should be given as to how the proposed NEI could be improved through the addition of new Domains and indicators, and through the use of more complex mathematical / statistical techniques;
 - Research should be conducted in to which policies, strategies and interventions are appropriate for different spatial relationships of socio-economic deprivation and natural environmental value. Mapping of the socio-economic priorities and opportunities should be undertaken alongside that of the IMD / NEI associations to help guide any such interventions;
 - Future work should also consider and where appropriate incorporate the outputs and implications of the Environment Agency led National Environmental Quality Index and other parallel work being delivered via the Natural Economy Northwest programme.
- 1.24 Throughout, it is important to emphasise that the analysis provides a framework for direction and guidance. However, for specific intervention measures on the ground, additional socio economic and natural environment considerations will be necessary especially on current activities.