Regional and rural development by Green Infrastructure in England – the story so far

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Context
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- What green infrastructure is in England
- National Planning Policy Framework

Demonstrate through case studies
- How GI is providing ecosystems services
- Delivering for the economy
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- Illustrate tools we use
- Utilising GI and EU funding streams
UK and GB

England + Wales + Scotland = Great Britain (GB)

England population density 3x greater

Hungary: 93,000kmsq and 9.8 mill
England: 13,395kmsq and 64.0 mill
Natural England

To ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development

(Natural Environment and Rural Communities Act 2006).
What is Green Infrastructure?

Green infrastructure is a term used to refer to the living network of green spaces, water and other environmental features in both rural and urban and rural and maintains critical ecological links between them both.

National Planning Policy Framework

- **Local planning authorities** should set out a strategic approach in their Local Plans, **planning positively** for the creation, protection, enhancement and management of networks of **biodiversity and green infrastructure**;
Green Infrastructure - from idea to a reality

North West Green Infrastructure guide
Multi-functional – one place many roles

The multifunctional role of green infrastructure, an example from Shrewsbury
Photo by Nigel Jones, Natural England
Multi-functional – ecosystem services

Regulating services

Provisioning services

Cultural services

Supporting Services

Underpinning biodiversity, geodiversity and ecosystem processes
Green Infrastructure tools

GI toolbag

partnership

evidence

advice

funding

statutory role
Green Infrastructure Partnership

- Set up following a commitment in the Natural Environment White Paper, 2011
- Facilitated by Defra for 2 years
- Taken on by the Town and Country Planning Association
- Over 300 member organisations including developers, NGOs, local government, consultants
- Supporting local delivery through developing evidence, sharing good practice and providing training
“The interdependence between the natural environment and the economy is often taken for granted or not fully understood. The MEBIE 2 report sheds light on this relationship and I encourage local decision-makers to take full advantage of what this can Offer for people and wildlife alike.”

Andrew Wood, Natural England’s Director for Science and Evidence
Micro Economic Benefits of Investment in the Environment

• Air Quality
• Flood Control
• Urban run-off and pollution
• Noise pollution
• Business investment
• Wealthier places
• Mental health
• Physical activity and health
• Future proofing
• Sociability
• Tourism
Air-quality

Air pollution reduces average UK life expectancy by 7-8 months \(^{(1)}\)

- Research in Torbay showed that Torbay’s trees removed 22.88 tonnes of O\(_3\), 17.97 tonnes of PM\(_{10}\), 7.91 tonnes of NO\(_2\), and 1.3 tonnes of SO\(_2\) annually \(^{(2)}\).
- This leads to an annual health benefit of £1.33 million (central estimate), without including the SO\(_2\) \(^{(3)}\).
- But need to pick the right trees.

\(^{(2)}\) ROGERS, K, HANSFORD, D, SUNDERLAND, T & COISH, N 2011. Measuring the ecosystem services of Torbay’s trees.
Flood control

Urban flooding costs £270 million a year in England and Wales\(^1\).

- It is been predicted that this will increase to between £1 and £10 billion a year by 2080 unless preventative action is taken\(^1\).

- Sustainable Urban Drainage Systems (SUDS) are **cost-effective ways to reduce flood risk**\(^2\).

- Green roofs\(^3\) and urban trees\(^4\) retain rainwater reducing flood risk.

1) PARLIAMENTARY OFFICE OF SCIENCE AND TECHNOLOGY 2007. Urban flooding
2) DUFFY, A, JEFFERIES, C, WADDELL, G, SHANKS, G, BLACKWOOD, D & WATKINS, A 2008. A cost comparison of traditional drainage and SUDS in Scotland. *Water Science & Technology*, 57, 1451-1459. SUDS involve retaining water above ground near to where it falls. Duffy found the capital costs of SUDS to be less than half that of traditional drainage and maintenance costs to also be lower.
Health & Physical activity

Insufficient physical activity costs the UK £8.2 billion annually

- These is a relationship between quantity of accessible green space and population health – even when you control for wealth and other factors\(^{(1,2,3,4)}\)
- People use green space much more when its in short walking distance\(^{(5,6)}\).
- Local context is crucial, poor-quality green space where there are concerns for personal safety will be used less\(^{(7)}\).

GI as a catalyst for economic growth

- GI encourages inward investment to an area
- GI attracts increased visitor spending in an area
- GI saves environmental costs
- GI provides health benefits
- GI generates employment

A recorded webinar on this evidence is available - Green Infrastructure Partnership webinar - GI as a Catalyst to economic growth
Four case studies
Case study locations

1. Edenbrook Country Park, Hampshire
2. Dartmoor Mires, Devon
3. Weymouth Bay, Dorset
4. New Forest National Park
Edenbrook Country Park, Hampshire

- Protecting a Special Protection Area by giving people somewhere else recreate.
- 24ha of woodland, meadows, reedbeds, ponds and hedgerows
- Integrated into housing development via green links, green urban drainage and retained veteran trees and hedgerows
- Recreational resource for residents:
  - footpaths and boardwalks
  - pond dipping platforms
  - bird hides
  - picnic areas and amphitheatre
The Dartmoor Mires Project, Devon

- A 5-year project restore Natura 2000 sites threatened by erosion
- £1.1 million project will restore 120 hectares of high-quality blanket bog.
- Benefiting upland wildlife, improve water provision and increase carbon storage, flood risk management
- Led by Dartmoor National Park Authority and funded by South West Water, with contributions from NE and other project partners
Working with water companies

- Upland catchments suffering from deteriorating colour

- Expensive to treat - end of pipe solutions are not sustainable

- Catchment solutions provide additional benefits

- Combining public and private funds
Weymouth Bay, Dorset

- High social deprivation England
- Jurassic Coast World Heritage Site
- 60 ha Portland Quarries Nature Park in former quarries
- 194ha Lorton Valley Nature Park meadow and woodland protection mitigation
- accessible recreation networks educational opportunities
- tourism income boosted
New Forest Green Halo, Hampshire

- New Forest NP 571km$^2$ + 20km buffer
- partnership
- ecosystem service mapping
- Green infrastructure strategies
- Local projects, development, influence decision-makers
Green Infrastructure in England – the story continues

www.naturalengland.org.uk/ourwork/planningdevelopment/greeninfrastructure/default.aspx

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