

LOCAL ACTION PROJECT

Introduction

Defra's Local Action Project aims to work with local communities to enhance the value of natural capital in our towns, cities and other urban spaces to improve people's lives, the environment and economic prosperity. It is taking a partnership approach that will enable local communities and civil society groups to discover their vision for where they live and to help them to form effective stakeholder-partnerships that can realise this.

The project will assist in meeting the requirement of Defra's 25 year plan to help individuals and organisations to understand the economic, social and cultural value of nature, the impact that their actions have on it, and to use this knowledge to make better decisions and facilitate the design of sustainable financing models.

The Local Action Project is providing research and development outputs that presents robust data, evidence and information on the benefits of green infrastructure and natural capital along with a method that helps communities build consensus, facilitate local decision-making and secure funding for natural capital improvements.

The Local Action Project is being funded by Defra (project number: WT1580) and is running from March 2015 to April 2016. The project is being led by the Westcountry Rivers Trust who have extensive experience of evaluating ecosystem services and working in partnership with a variety of stakeholders. The Project Board contains members from Defra, the Environment Agency, Natural England, Natural Resources Wales and Imperial College London.

Project Outputs

The Local Action Plan Project will produce the following outputs:

- 1 A method for assessing opportunities to enhance or create new ecosystem services in urban areas
- 2 A toolbox of interventions to enhance/increase ecosystem services provision in urban areas
- 3 A cost-benefit tool to assess the benefits and impacts of those interventions
- 4 A series of case studies piloting the mapping and cost-benefit tools, plus lessons learnt report
- 5 A set of communication & visualisation tools and a database of good practice examples.

Opportunities Assessment Method

In order to develop a method that can identify the opportunities to enhance ecosystem services in urban areas a series of indicators covering the economic, social, cultural and environmental benefits provided by natural capital and green infrastructure were developed. These indicators are based on freely available data and information so that they can be generated for any location within the UK.

Economic indicators include: 1) **property values**, which have been demonstrated to correlate closely to the aesthetics and quality of an urban landscape, and 2) **flood damage costs**, which is calculated using the Environment Agency's NaFRA methodology and used as an economic metric of the costs associated with remediation and repair after a flood.

Social metrics used include: 1) **access to greenspace**, which is calculated as the proportion of people in a community within 10 mins (600m) walk of an accessible greenspace; 2) **air quality**, using modelled mean background concentration of PM10 obtained from the Defra Air Quality Information Resource;

3) **flood risk from rivers and sea**, and 4) **surface water flood risk**. Living at risk of flooding can have severe effects on the health and emotional wellbeing of people and each of these risk indicators is determined from the number of people living at risk of flooding.

Cultural indicators used include: 1) **aesthetic value**, generated using the concentration of geo-tagged photos on the social media site Flickr, and 2) the **provision of cultural services** such as clubs and societies associated with open space and natural resources.

Environmental indicators include 1) **water quality**, measured by the number of 'urban' Reason for Not Achieving Good Status under the Water Framework Directive classification; 2) **water availability**, according to the EA's Catchment Abstraction Management Strategies; 3) **wildlife habitat availability**, measured by the percentage land cover that comprises of priority habitats, and 4) **local climate regulation** (or urban heat island effect), measured using Landsat 8 thermal imaging data collected in the summer months.

It should be stressed that whilst these metrics have been developed by the Local Action Project so far, work should always be done with input from local groups so that the final metrics reflect the values of local communities.

All of the metrics are presented in a wheel enabling easy comparison between the differing metrics (fig.1) and between different areas.

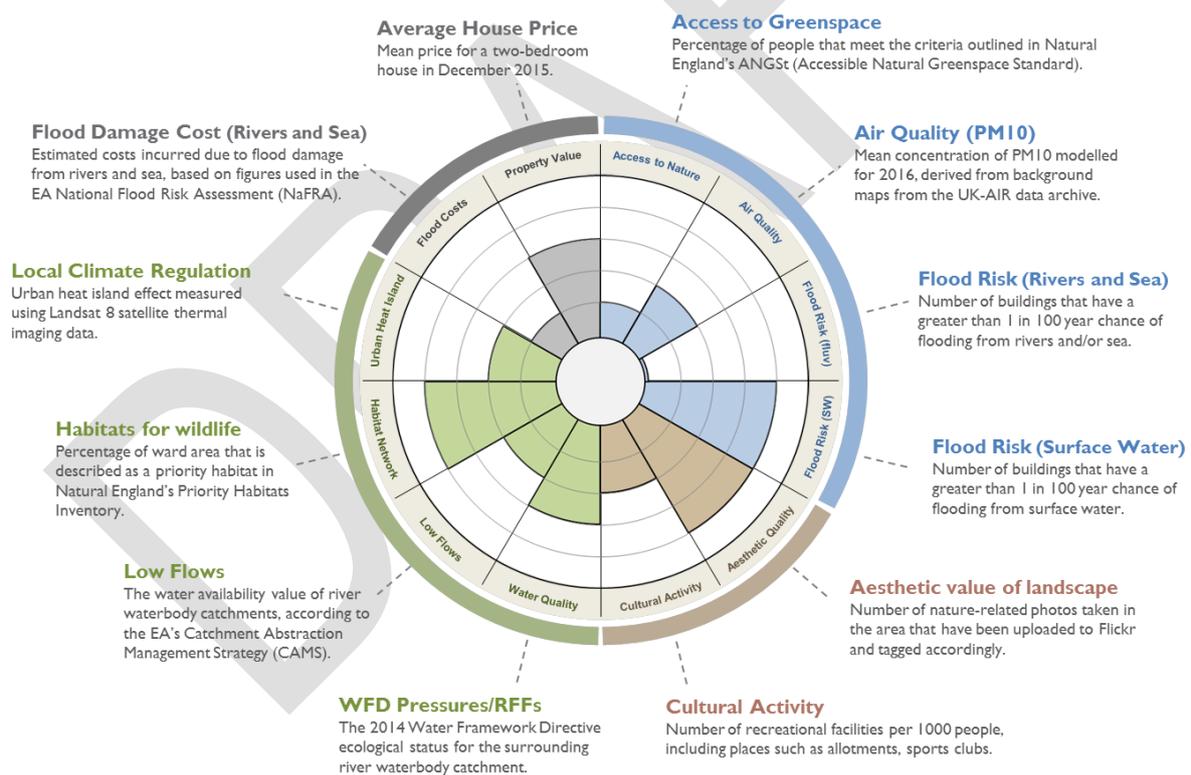


Figure 1: Presentation of the metrics used to describe the economic, social, cultural and environmental benefits provided by natural capital and green infrastructure in an urban area.

Presenting information in this way can help to identify areas that could benefit the most from increased or improved environmental infrastructure and also what types of interventions are appropriate to meet those needs. High resolution hydrological and suitability analyses, along with the identification of areas of opportunity, such as potential development sites can then be used to identify candidate sites for specific interventions.

Demonstration Areas

The approach developed under the Local Action Project is being trialled in four pilot areas: Leicester, Newton Abbot, Manchester and Thames Estuary. In each of these areas work is being done with catchment partnerships and local decision makers to provide feedback and refine the approach.

The current benefits provided by natural capital and green infrastructure have been analysed using the metrics developed for each ward level or super output areas within the pilots. These have been represented geographically so that the levels of service provision throughout the area can be compared (figure 2).

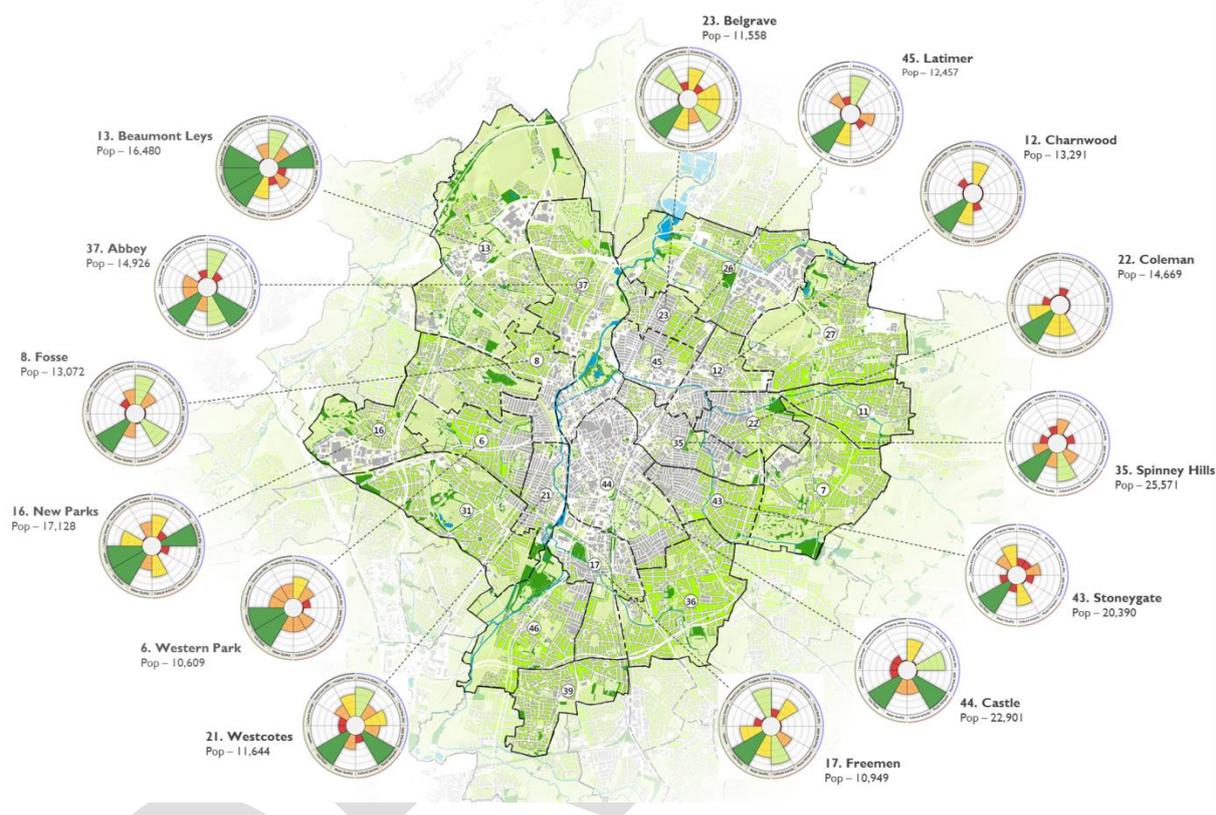


Figure 2: The levels of economic, social, cultural and environmental benefits provided by green infrastructure in each MSOA in the City of Leicester.

Work within the pilot areas has demonstrated that the approach is easily understood by non-technical audiences, engages stakeholders and facilitates conversations around levels of green infrastructure and opportunities for enhancement.

Intervention Toolbox and Cost-Benefit Assessment

A toolbox of interventions that can be used to enhance service provision in urban environments has also been compiled. These fact sheets provide information regarding restoration/regeneration methods, green infrastructure, sustainable urban drainage schemes, and retrofit and greening actions, along with aspects that increase functionality, e.g. increased amenity or access.

For each of these interventions, cost and benefits information and feasibility criteria has been provided. These are being used along with the opportunities maps to create action plans for the improvement of green infrastructure in each of the pilot areas.

Communication Outputs

Effective communication will be key to the engagement of stakeholders and so the project has also worked to develop a suite of clear, engaging and effective communication outputs carefully designed and tailored to the needs and prior knowledge of a variety of key audiences.

As an example of this, the image below has been created to give an artist's impression of what a "good" urban area incorporating green infrastructure would look like as opposed to a "bad" urban area with little green infrastructure provision. An interactive annotated version will be produced which can be used to engage partners and encourage interest in local action planning.



NERC Green Infrastructure Project

Under NERC's Green Infrastructure Programme additional work has been funded to explore how the tools developed by the Local Action Plan project could be developed to assist additional users such as local planning officers, biodiversity officers and ecologists, as well as construction companies. Work is also ongoing to see how the work of the project could help to deliver Defra's 25 year plan.

Find Out More

More information can be found at the project website <http://urbanwater-eco.services/>

Or please contact Alex Collins (Alexandra.Collins@Imperial.ac.uk), Nick Paling (nick@wrt.org.uk) or Ashely Holt (Ashley.Holt@Defra.gsi.gov.uk) to find out more.