Presentation

Implementing the value of ecosystem services in decision-making and planning:

Experiences from Birmingham and The Black Country

by

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Consultancy for Environmental Economics & Policy/
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NIA Best Practice Event: People, Places and Economy

Northampton, 26th February 2014

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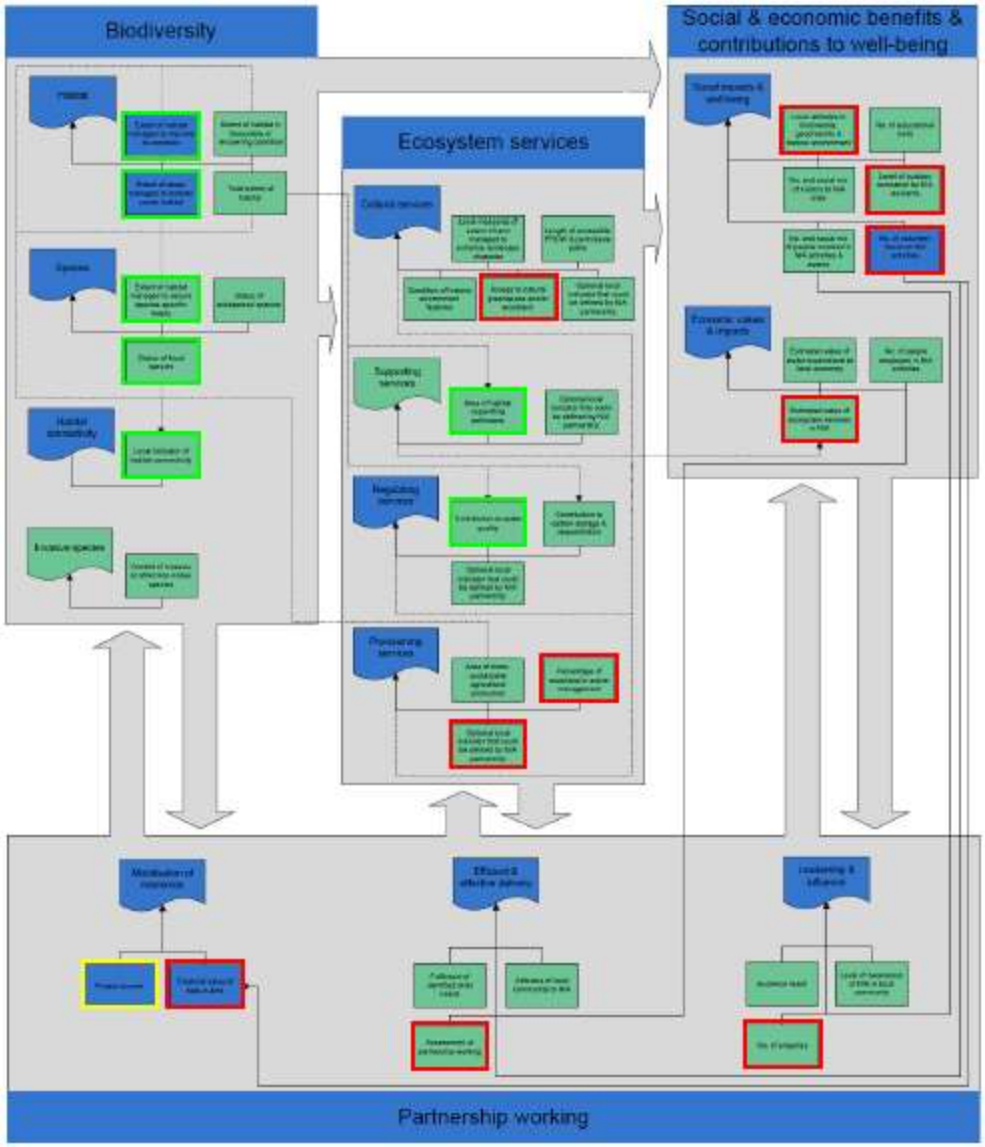
B&BC NIA Monitoring & Evaluation



M&E Framework and selected indicators

- The B&BC NIA has chosen 18 indicators (5 more than requested by Defra), including:
  - Estimated value of ecosystem services in NIA
  - Access to natural greenspace (ANGSt)
- The B&BC NIA has published its own M&E report for year 1
  http://ceep-online.co.uk/index.php/projects-a-publications/82-birmingham-a-black-country-nia-monitoring-a-evaluation

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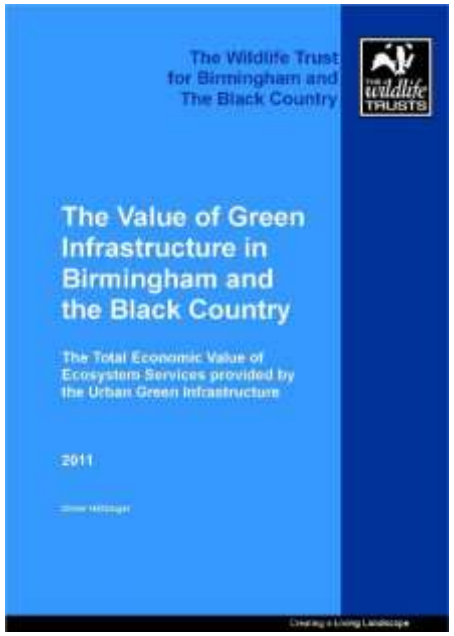
B&BC Ecosystem Assessment

The Value of the Green Infrastructure in Birmingham and The Black Country 2011

http://www.bbcwildlife.org.uk/valuing-green-infrastructure



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Background

What is the value of ecosystems and ecosystem services?

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- Even we as specialists will have problems to express a value (qualitative or quantitative) and compare this value with other goods and services!

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- Even we as specialists will have problems to express a value (qualitative or quantitative) and compare this value with other goods and services!

→ ***Economic valuation translates the various services provided by ecosystems into monetary terms. This makes their value visible and tangible!***

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B&BC Ecosystem Assessment

Aims:

- Create a basic understanding of economic valuation and its importance.
- Provide an evidence base of valued ecosystem services as decision aid and as ‘weapon’ for lobbying.
- Compiling a best practice example for ecosystem valuation in the UK.

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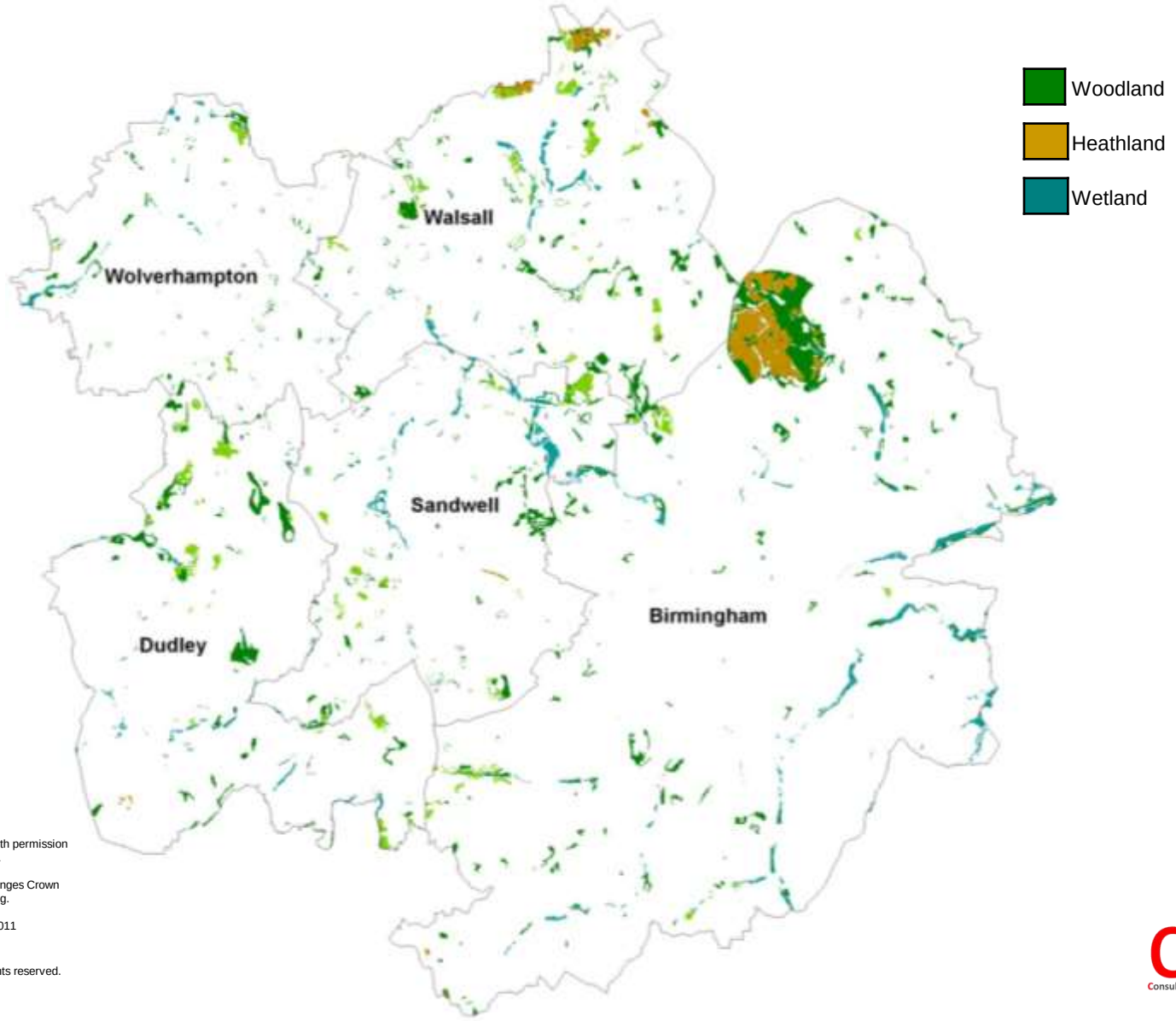
B&BC Ecosystem Assessment



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B&BC Ecosystem Assessment

Main findings:

- The evaluated 2,422 ha of Green Infrastructure provide ecosystem services valued at **£20.8 million** p.a.

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- Capitalised over 100 years this results in **£1.1 billion**.

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B&BC Ecosystem Assessment

Main findings:

- The evaluated 2,422 ha of Green Infrastructure provide ecosystem services valued at **£20.8 million** p.a.
- Capitalised over 100 years this results in **£1.1 billion**.
- Because not all services could have been valued these values can be interpreted as **baseline** of the real value.

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B&BC Ecosystem Assessment

Ecosystem Service **Best guess for annual values** *(2010 Prices)*		Woodland	Heathland	Wetland
Provision	Fresh Water Supply	Unvalued	Unvalued	£0.01m
Regulation	Climate Change Mitigation	£0.16m	Unvalued	Unvalued
	Moderation of Extreme Weather Events	Unvalued	Unvalued	£0.37m
	Water Quality Improvement	Unvalued	Unvalued	£0.33m
Habitat	Habitat for Species (Biodiversity)	£2.71m	£0.93m	£0.19m
Culture	Recreation	£7.36m		£0.17m
	Aesthetic Appreciation	£8.55m	Unvalued	
Total		**£18.79m**	**£0.93m**	**£1.16m**

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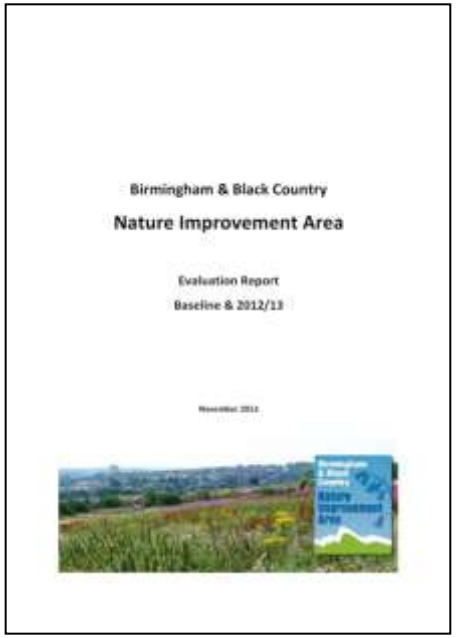
ANGSt

Accessible Natural Greenspace Standard 2013

http://ceep-online.co.uk/index.php/projects-a-publications/82-birmingham-a-black-country-nia-monitoring-a-evaluation



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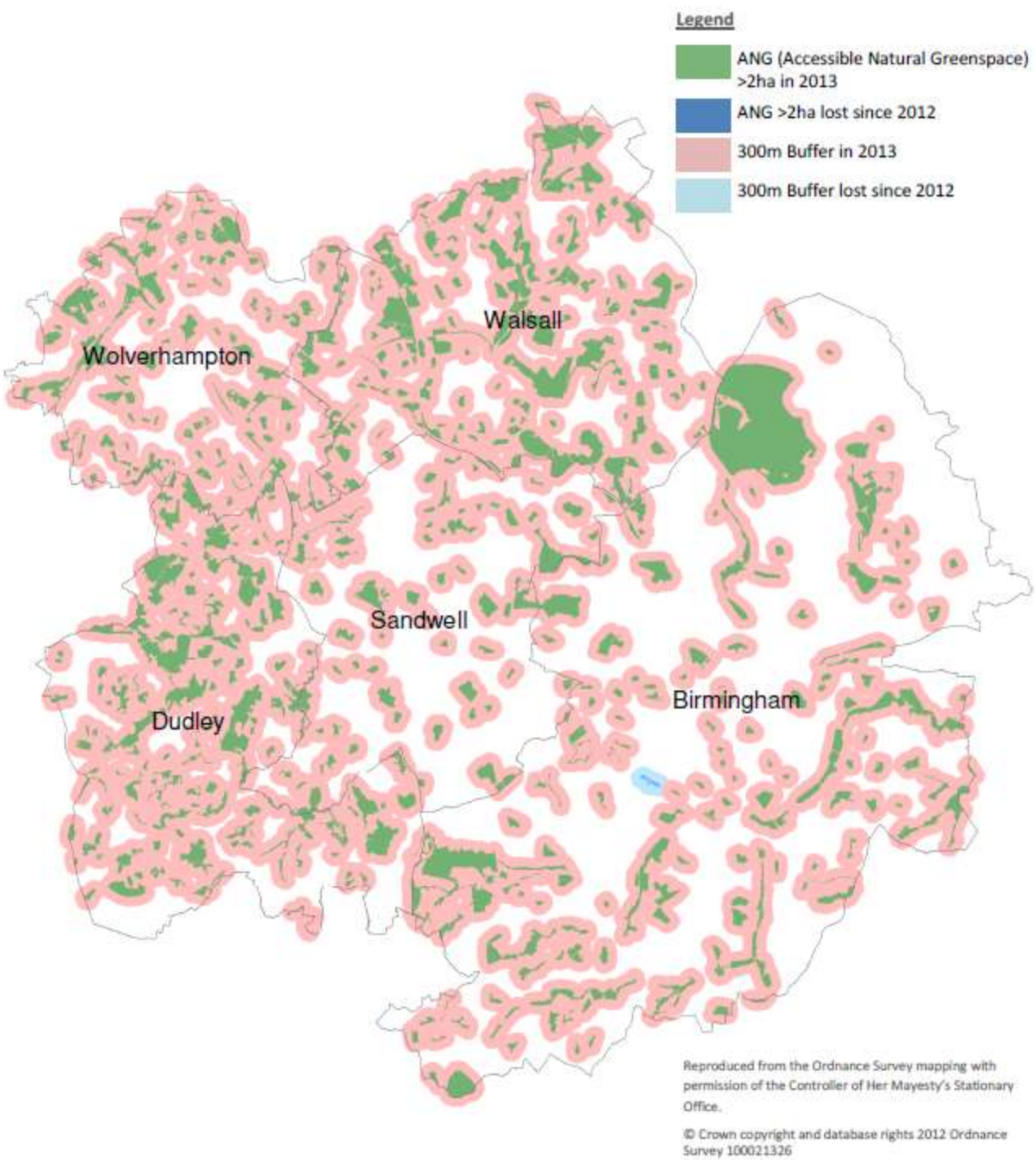

Accessible Natural Greenspace Sites >2 ha:

Actual & Losses

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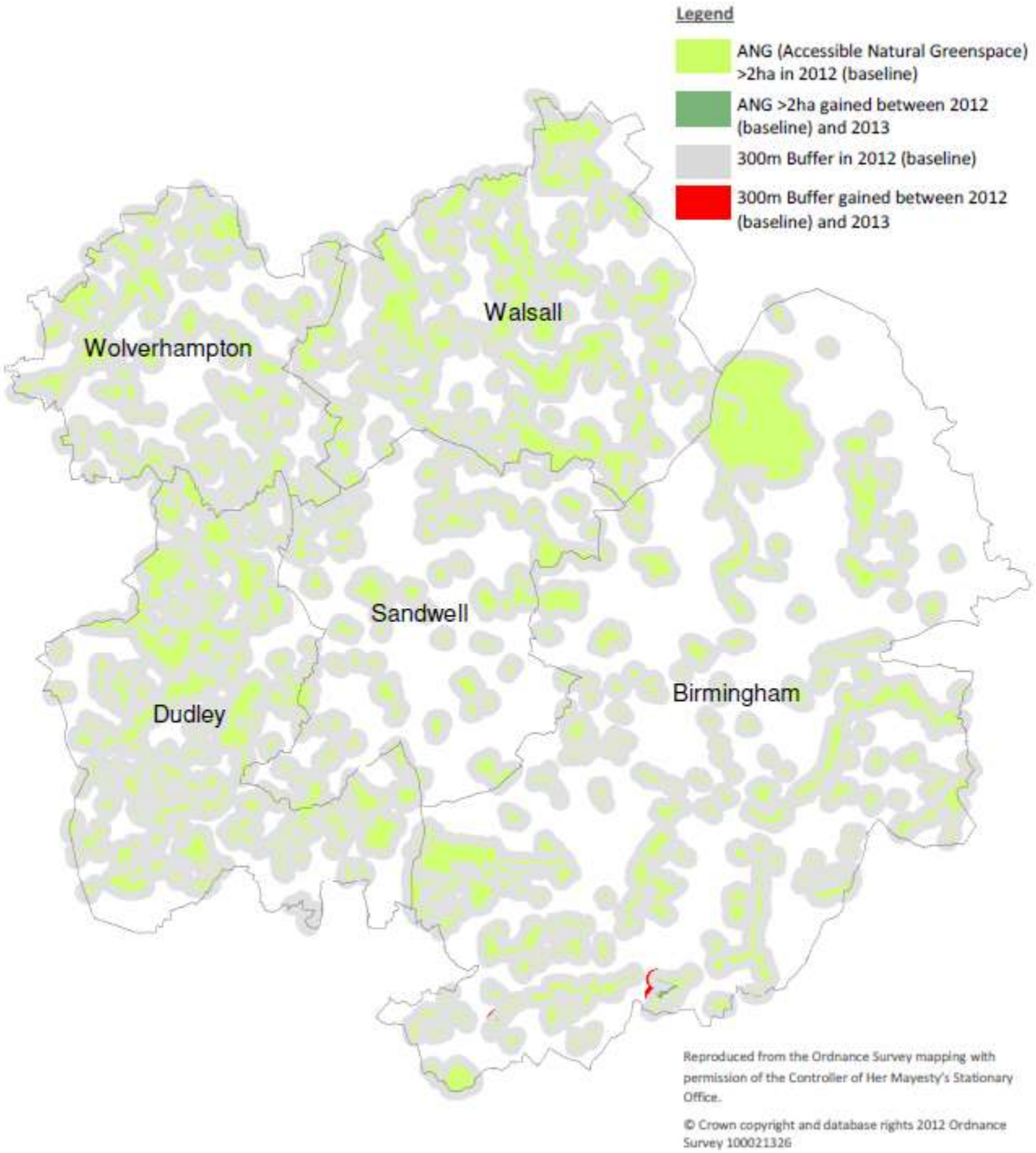

New Accessible Natural Greenspace Sites >2 ha

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ANGSt

Findings:

	April 2012 (Baseline)	April 2013	*Change 2012-2013*
Area of accessible natural greenspace >2ha	7,976.5 ha	7,977.1 ha	*+0.56 ha*
Number of Households in the NIA within 300m to accessible natural greenspace >2ha	562,188	562,372	*+184*
Population in the NIA within 300m to accessible natural greenspace >2ha (%)	60.88 %	60.90 %	*+0.02 %*

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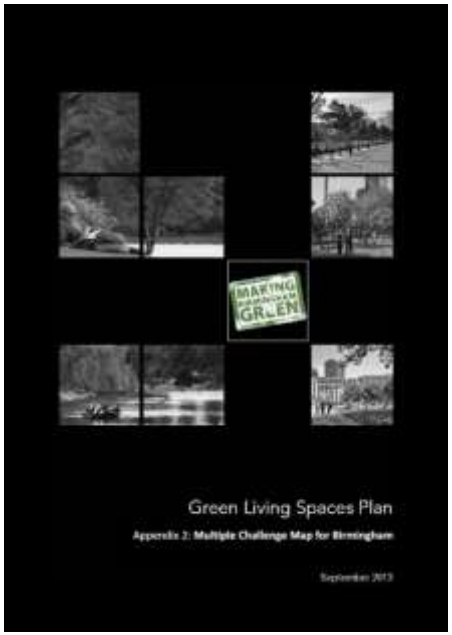
Ecosystem Services Mapping

Constituency Concept Plans for Birmingham: Mapping Supply & Demand for Ecosystem Services

http://ceep-online.co.uk/index.php/projects-a-publications/81-mapping-supply-and-demand-of-multifunctional-green-infrastructure-and-ecosystem-services-in-birmingham



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Ecosystem Services Mapping

Mapping ecosystem services can help to:

- Identify where ecosystem services are produced and how these services are distributed
- Reveal the spatial demand for specific ecosystem services

→ **Identify areas where the demand for ecosystem services can't be sufficiently satisfied which helps to target and prioritise action on the ground!**

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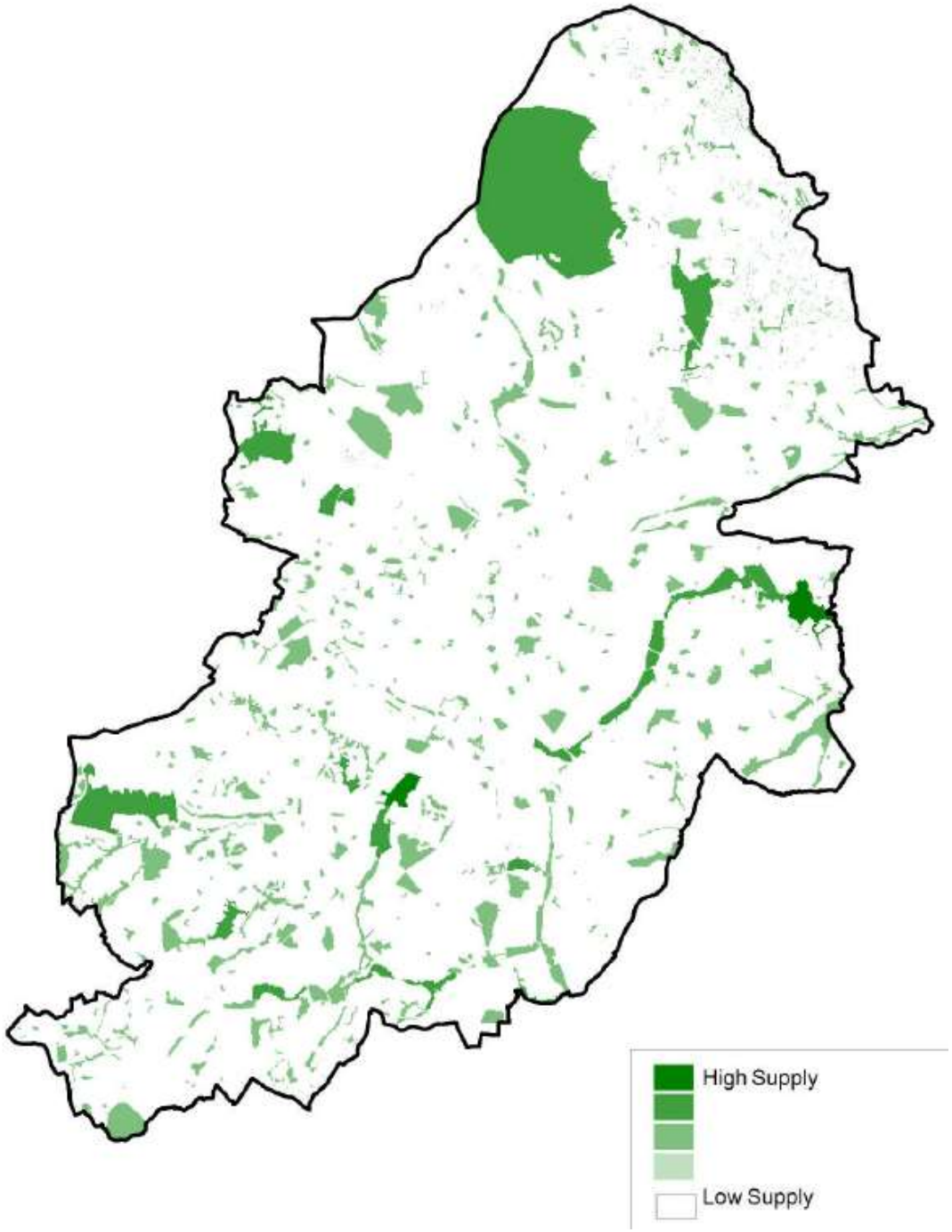
Example: Recreation

Ecosystem Services Supply Layer:

- Accessibility: Only public accessible green infrastructure that can be used on a day-by-day basis has been included (parks, public open space etc.)
- Diversity of habitats per site as quality indicator



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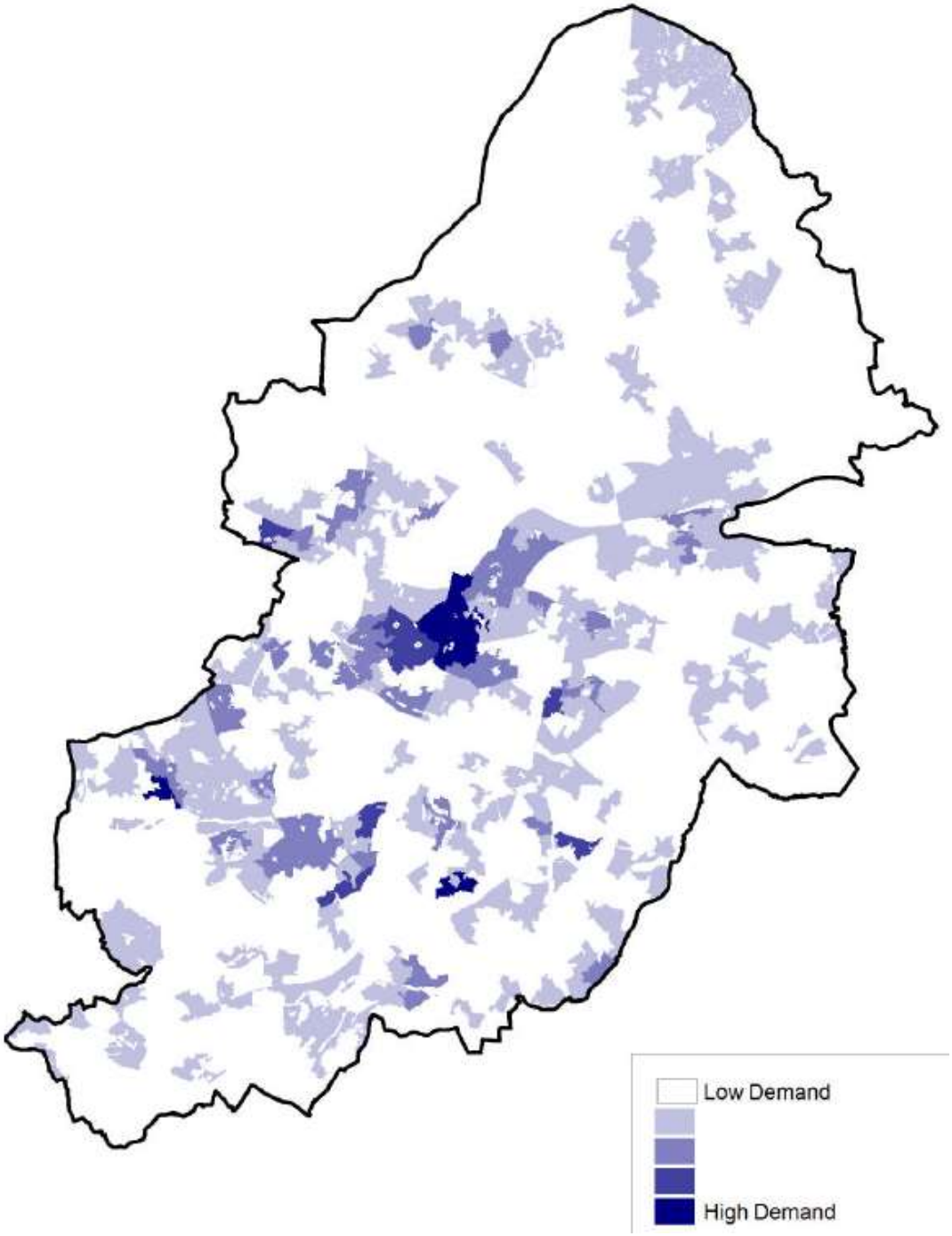
Example: Recreation

Ecosystem Services Demand Layer:

- Population density: The more people live in an area the higher is the demand in that area for recreational greenspace

Spatial Demand Distribution Layer:

- Distance: The distance has been used as proxy for the travel time to access the next available accessible greenspace. It's been assumed that the demand for greenspace recreation can be satisfied within 300m around accessible greenspaces.
- This is based on the ANGSt and a proxy for 5 minutes' walk.



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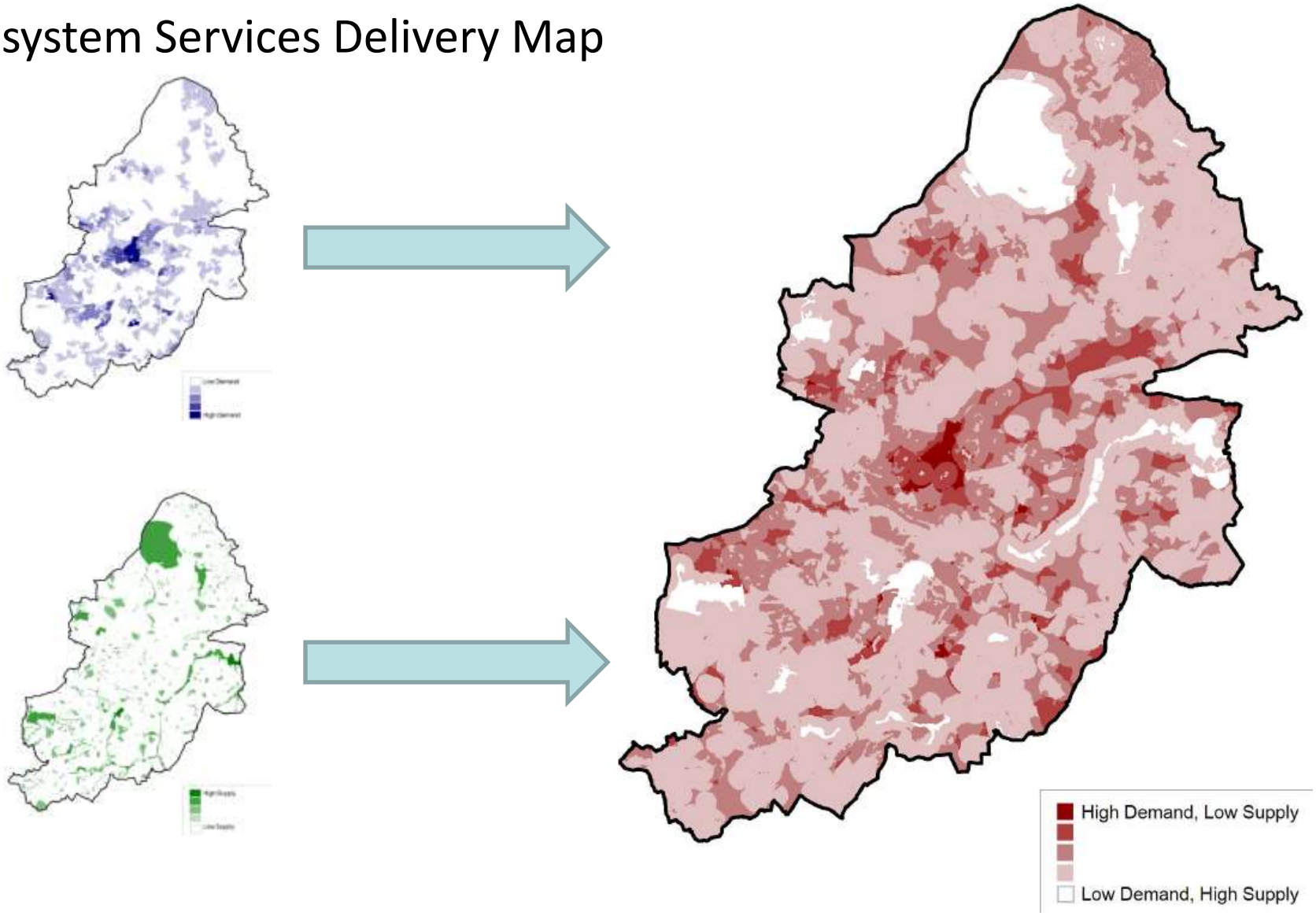
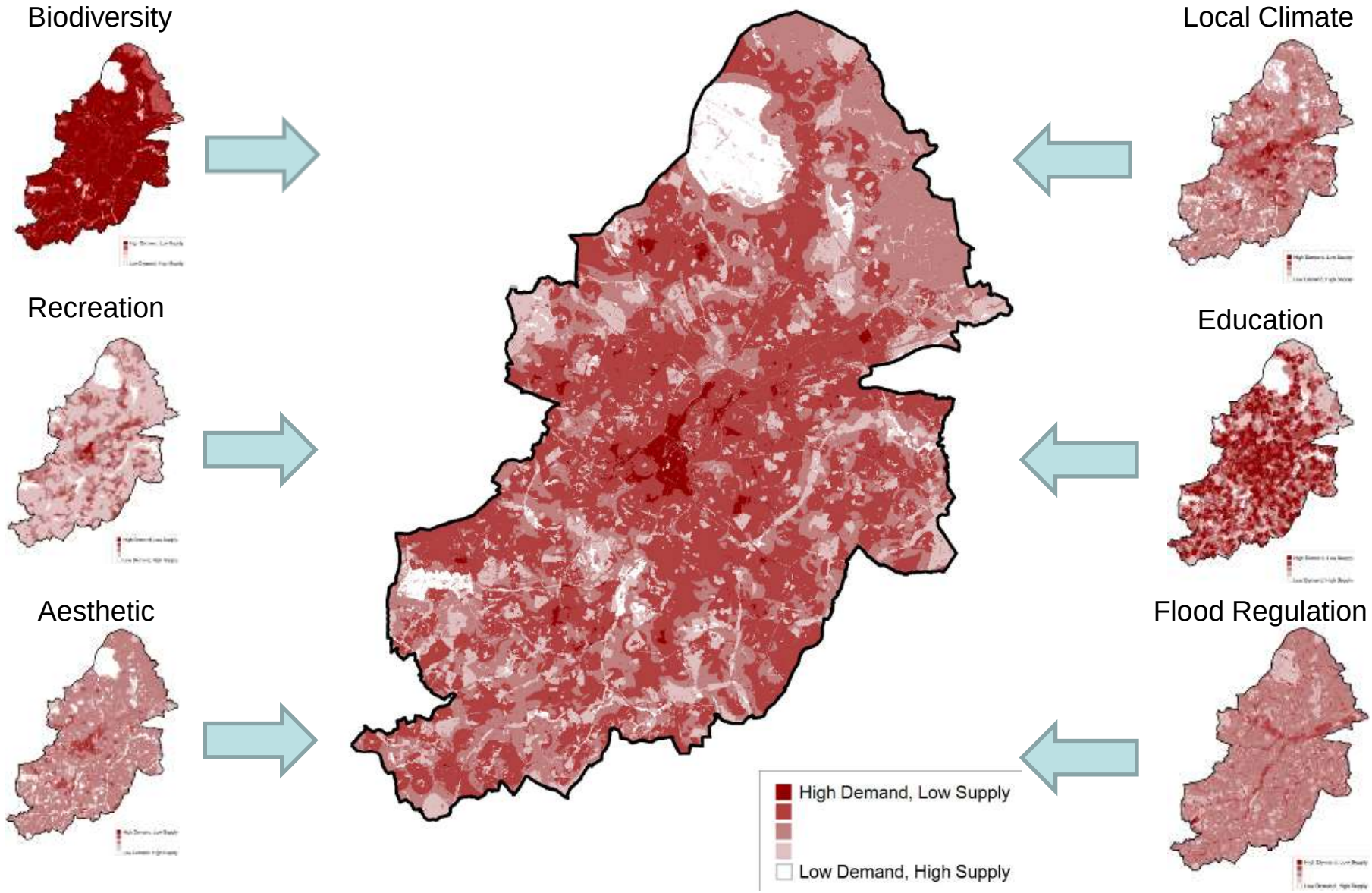
Example: Recreation

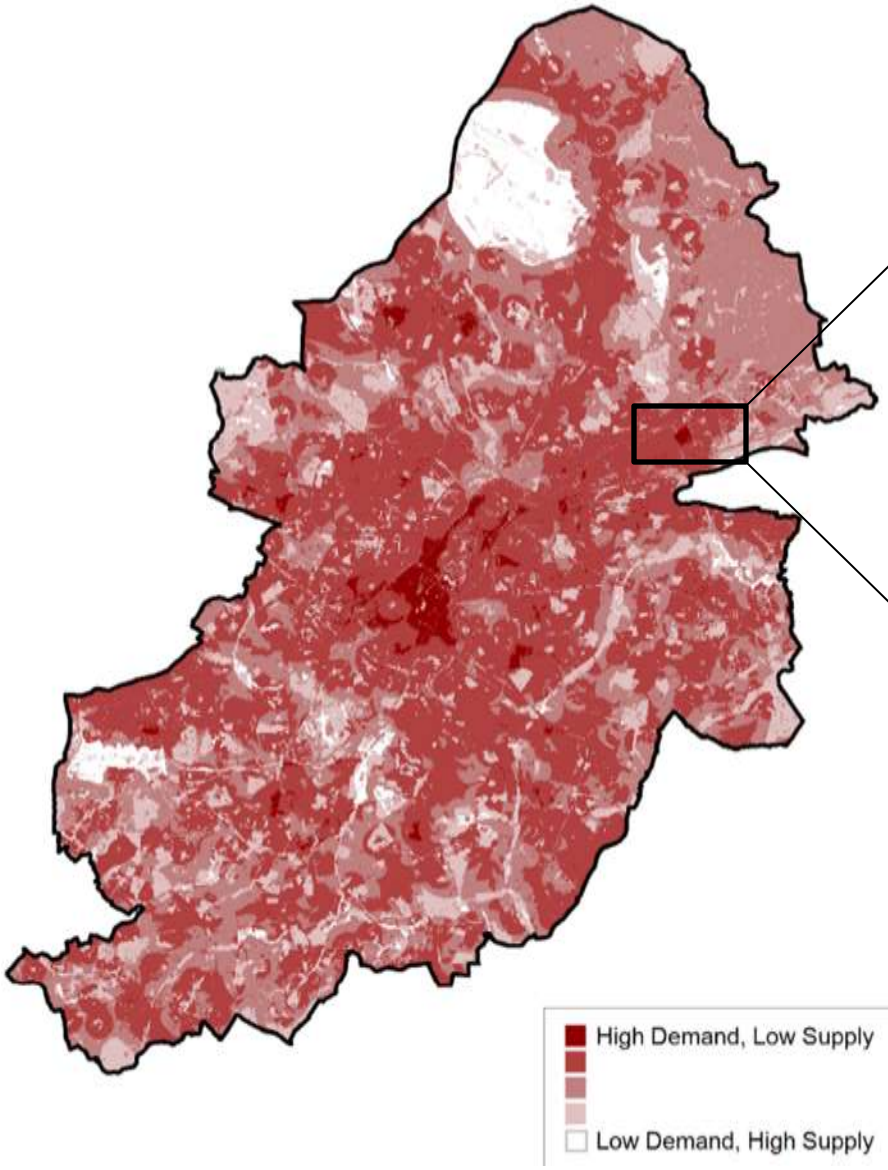
Ecosystem Services Delivery Map



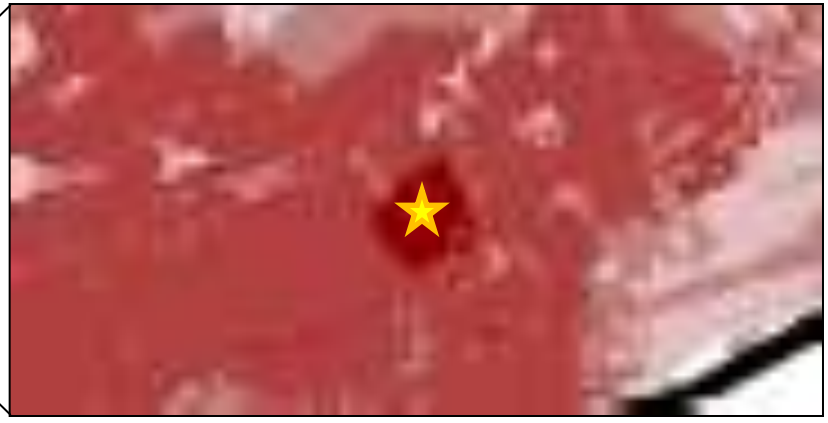
Combined Map for Birmingham



Example: Recreation



- The map can be used to identify areas to prioritise action (greenspace creation/improvement)



- It doesn't show if the actual demand is satisfied (only relative but no absolute assessment).
- It doesn't show opportunities for greenspace creation.

→ **Starting point for further investigation.**

Natural Capital City Tool (NCCT)

The Natural Capital City Tool

(NCCT)

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NCCT Background

"The Government expects the planning system to deliver the homes, business, infrastructure and thriving local places that the country needs, while protecting and enhancing the natural and historic environment. Planning has a key role in securing a sustainable future. ***However, the current system […] is failing to achieve the kind of integrated and informed decision-making that is needed to support sustainable land use."***

Natural Environment White Paper, 2011

Main Aims of the NCCT

- To assess the long-term impacts of new/proposed developments and plans on ecosystem services and human wellbeing,
- To identify negative impacts on ecosystem services and options (design-strategies) that can mitigate/compensate for such undesired impacts, and

→ **To move away from a tick-box exercise to integrated and informed decision-making with the main aim to ensure that new developments have a net positive impact on the provision of ecosystem services.**

→ **The NCCT has officially been endorsed by the B&BC Local Nature Partnership!**

Assessed ecosystem services

The tool assesses the impact of new developments on 10 ecosystem services:

- Food, timber and other harvested products
- Biodiversity
- Aesthetic values & sense of place
- Recreation
- Water
- Flood risk
- Air quality
- Local climate (climate change adaptation)
- Global climate (climate change mitigation)
- Soil quality

How the NCCT works

Identification and assessment of feasible indicators for each ecosystem service

Recreation *e.g. impact on extent & quality of public assessable greenspace*	Area of public greenspace	-4 ha (-100%)
Water *e.g. impact on water quality improving vegetation*	Area of green vegetation	-2.5 ha (-63%)
Flood risk *e.g. impact on water storage capacities and water run-off of the site*	Area of green vegetation	-2.5 ha (-63%)
	Area of SUDS	+0 ha

How the NCCT works

Identification and assessment of feasible indicators for each ecosystem service

Defining an 'impact magnitude score' for each ecosystem service

Recreation *e.g. impact on extent & quality of public assessable greenspace*	-3 Medium negative impact
Water *e.g. impact on water quality improving vegetation*	-2 Minor negative impact
Flood risk *e.g. impact on water storage capacities and water run-off of the site*	+2 Minor positive impact

How the NCCT works

Identification and assessment of feasible indicators for each ecosystem service

Defining an 'impact magnitude score' for each ecosystem service

Defining a 'relative weighting score' to compare the impact across ecosystem services

Food, timber and other harvested products	**8**
Biodiversity	**6**
Aesthetic values & sense of place	**10**
Recreation	**10**
Water	**5**
Flood risk	**8**
Air quality	**4**
Local climate (climate change adaptation)	**3**
Global climate (climate change mitigation)	**2**
Soil quality	**5**

How the NCCT works

Identification and assessment of feasible indicators for each ecosystem service

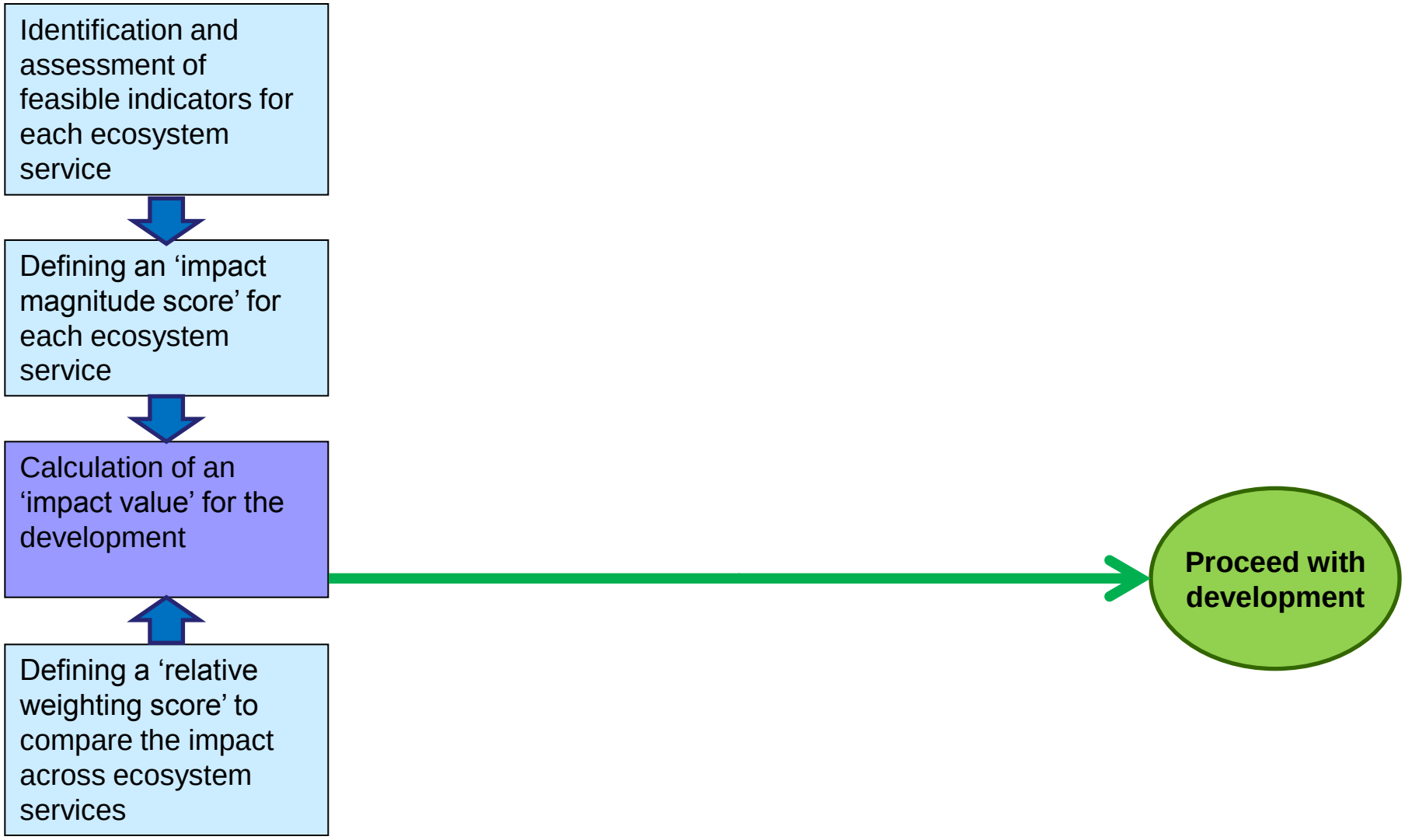
Defining an 'impact magnitude score' for each ecosystem service

Calculation of an 'impact value' for the development

Defining a 'relative weighting score' to compare the impact across ecosystem services

Ecosystem Service	Impact value
Food, timber and other harvested products	0
Biodiversity	-3
Aesthetic values & sense of place	5
Recreation	-7
Water	-3
Flood risk	3
Air quality	2
Local climate (climate change adaptation)	-4
Global climate (climate change mitigation)	-2
Soil quality	5
Total impact value:	**-4**

How the NCCT works



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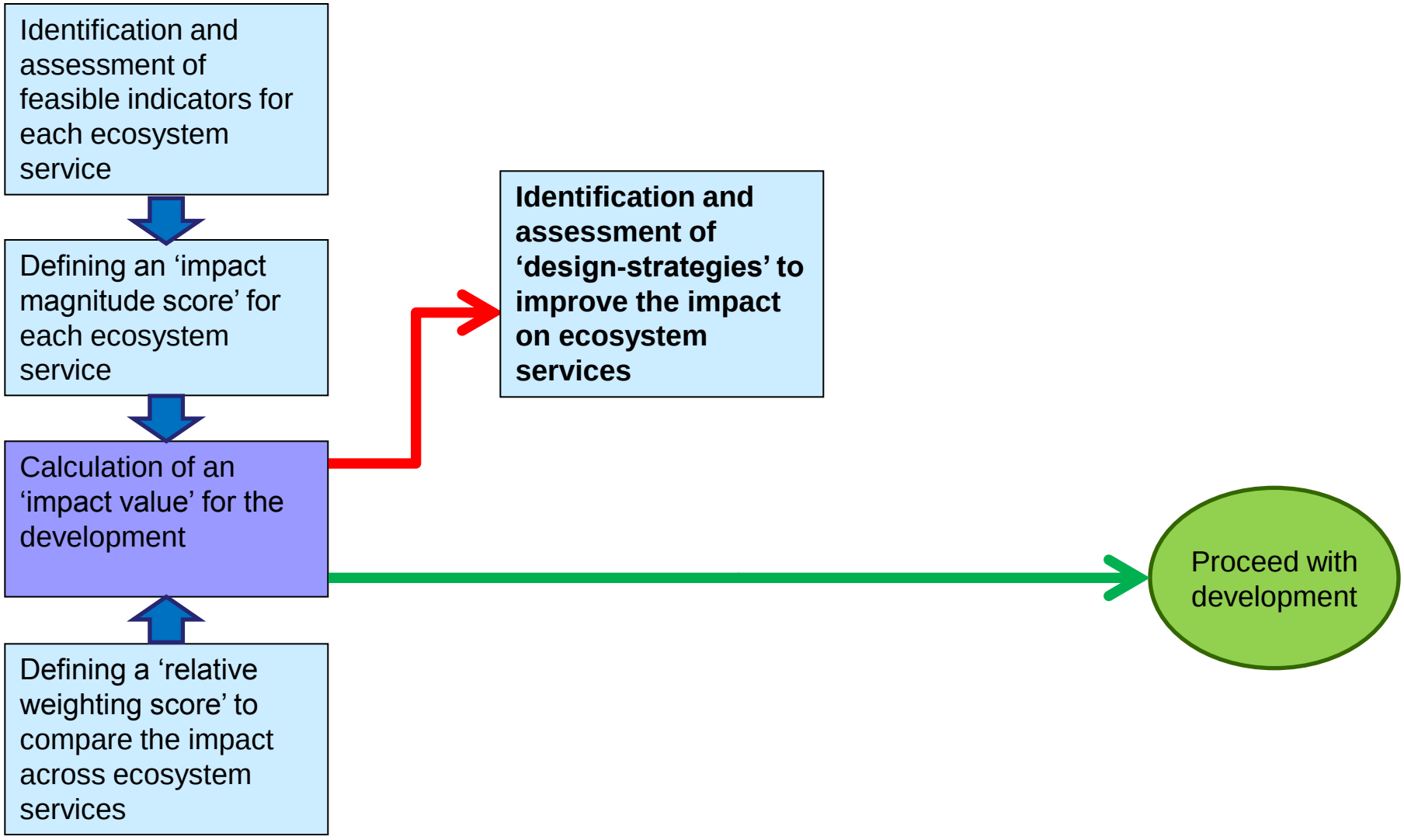

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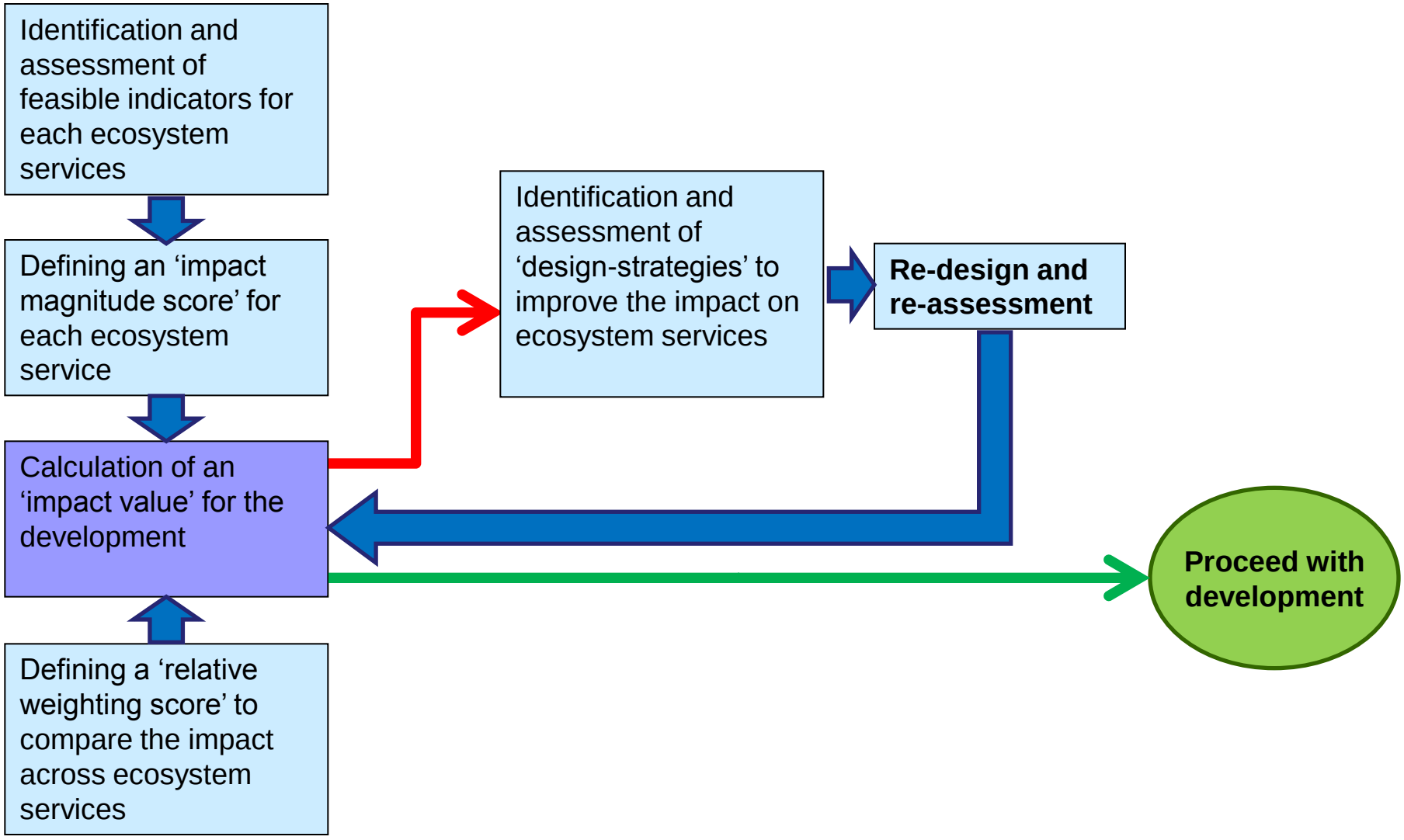

Many thanks for your attention!

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Birmingham & Black Country Nature Improvement Area

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