

Liveable Cities

Ecology and Ecosystem
Services and the Liveable City

7 December 2012

Royal Society

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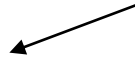
UNIVERSITY OF
Southampton

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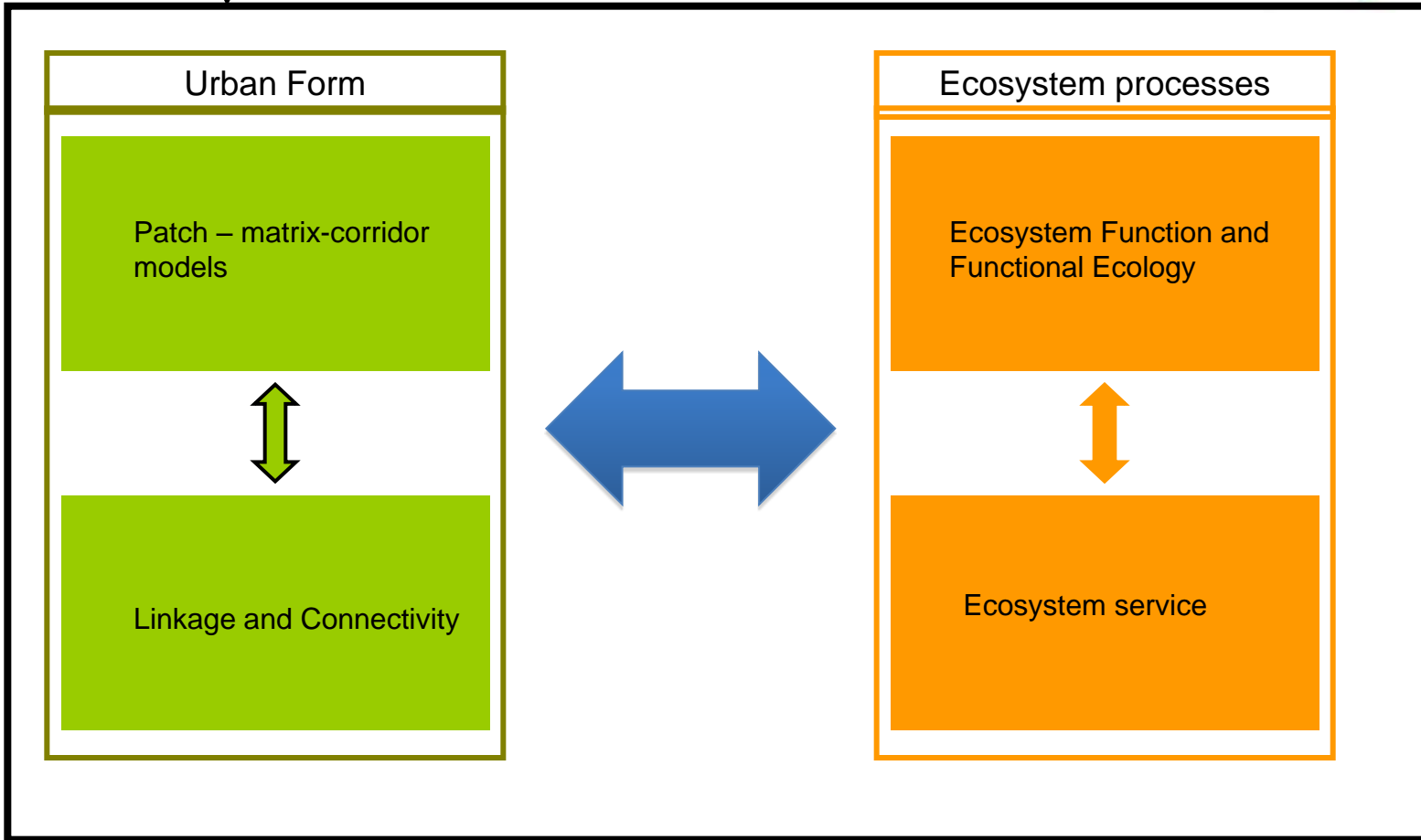
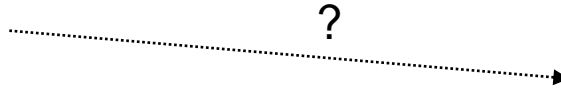
Economy

Society

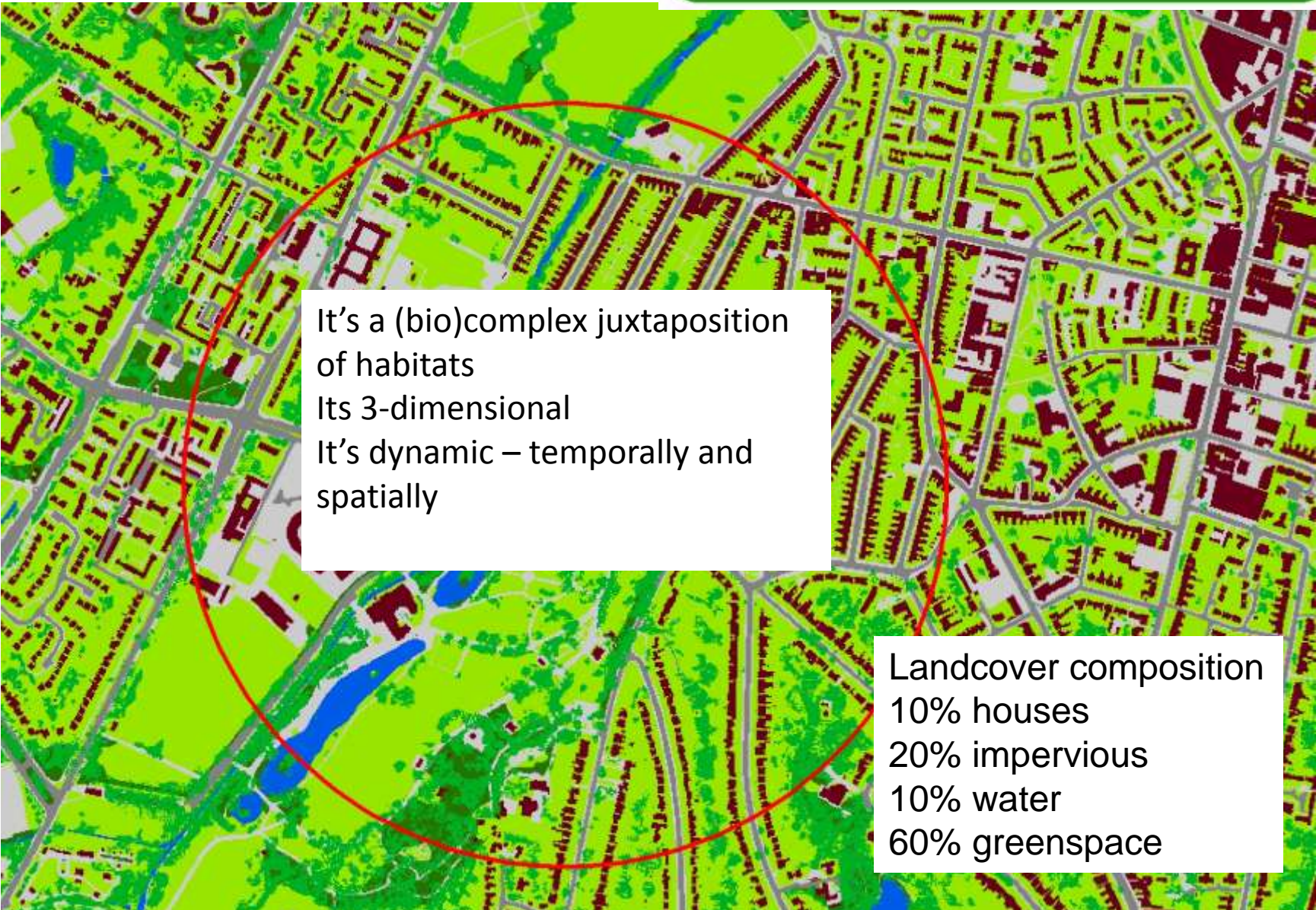


People and Policy

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Green assets



It's a (bio)complex juxtaposition
of habitats
Its 3-dimensional
It's dynamic – temporally and
spatially

Landcover composition
10% houses
20% impervious
10% water
60% greenspace

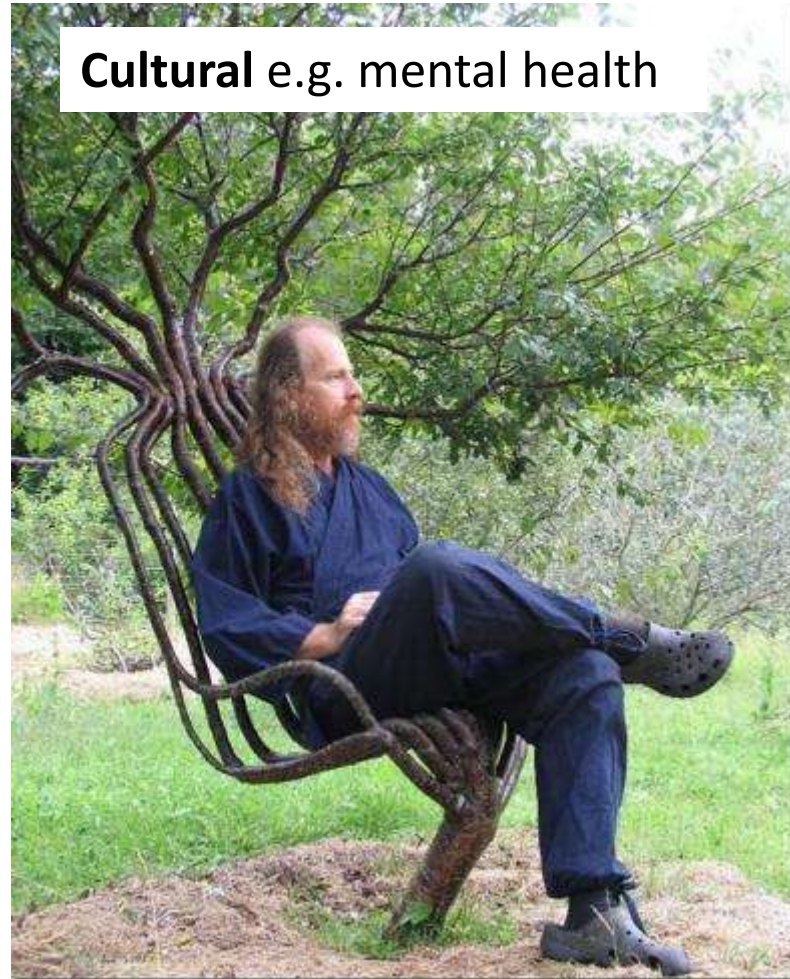
Ecosystem Services

Societal benefits derived from the “natural” environment

Regulating e.g flood storage



Cultural e.g. mental health



Provisioning e.g. food



Research gaps



- How does it scale to produce service provision?
- How can we use these eco-service assets to maximise city livability and well being?

Key ecological questions



What might be the ecological impacts of a low carbon city?

How might we quantify these impacts?

How might these impacts be avoided or mitigated utilizing the green assets at our disposal?

Compact development

What might be the ecological impacts of a low carbon city?

More compact development is one strategy for reducing carbon emissions

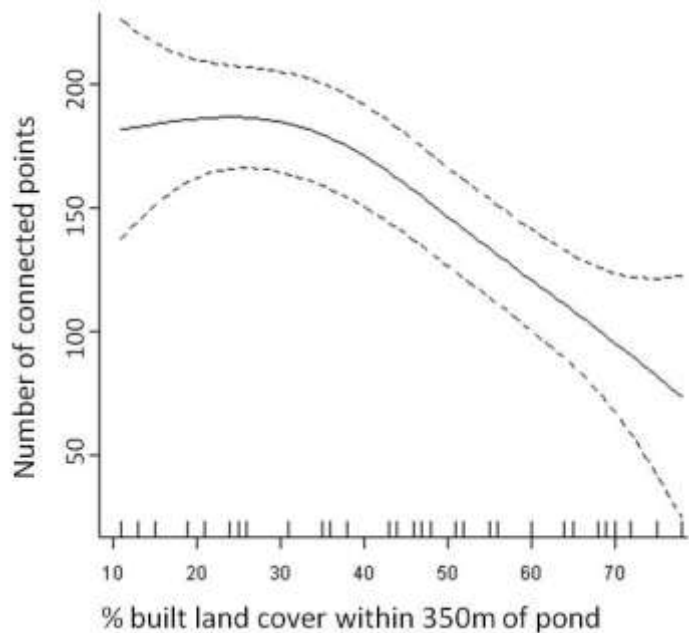
A higher density of people and infrastructure results in

- More efficient delivery of services

- Less need for private car use

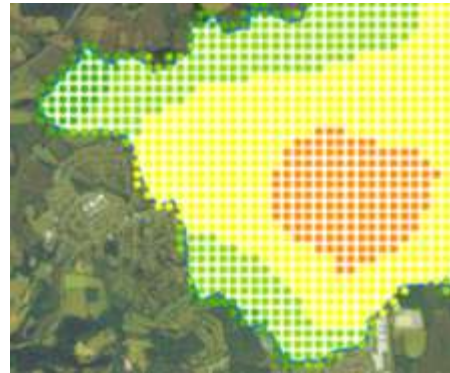
- Resulting in carbon savings

Compact development

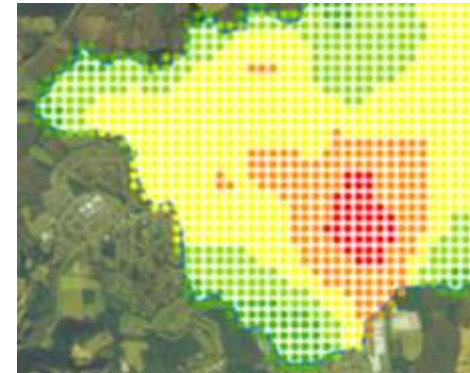


Ecological performance of

Current city



A future compact city



Expected ecological impacts

A reduction in ground level habitats

- Less shade and cooling

- Less recreational space

- Less visual access to nature

Disruption of ecological processes

A reduction in pollination for urban gardens and farms

Compact development

How might these impacts be avoided or mitigated?

Decouple ecological performance from built density

Possible mechanisms

- Incorporate habitats into vertical surfaces and roofs
- Increase built density by developing underground, leaving surface habitats
- Develop multi functional green infrastructure (e.g green transport routes)
- Reduce ecological disruptors traditionally associated with high density
 - Light pollution
 - Noise pollution
 - Air pollution
 - Compacted soils