

Urban Ecosystem Accounts

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What is our aim and why are we interested?

- **What are we trying to achieve?**

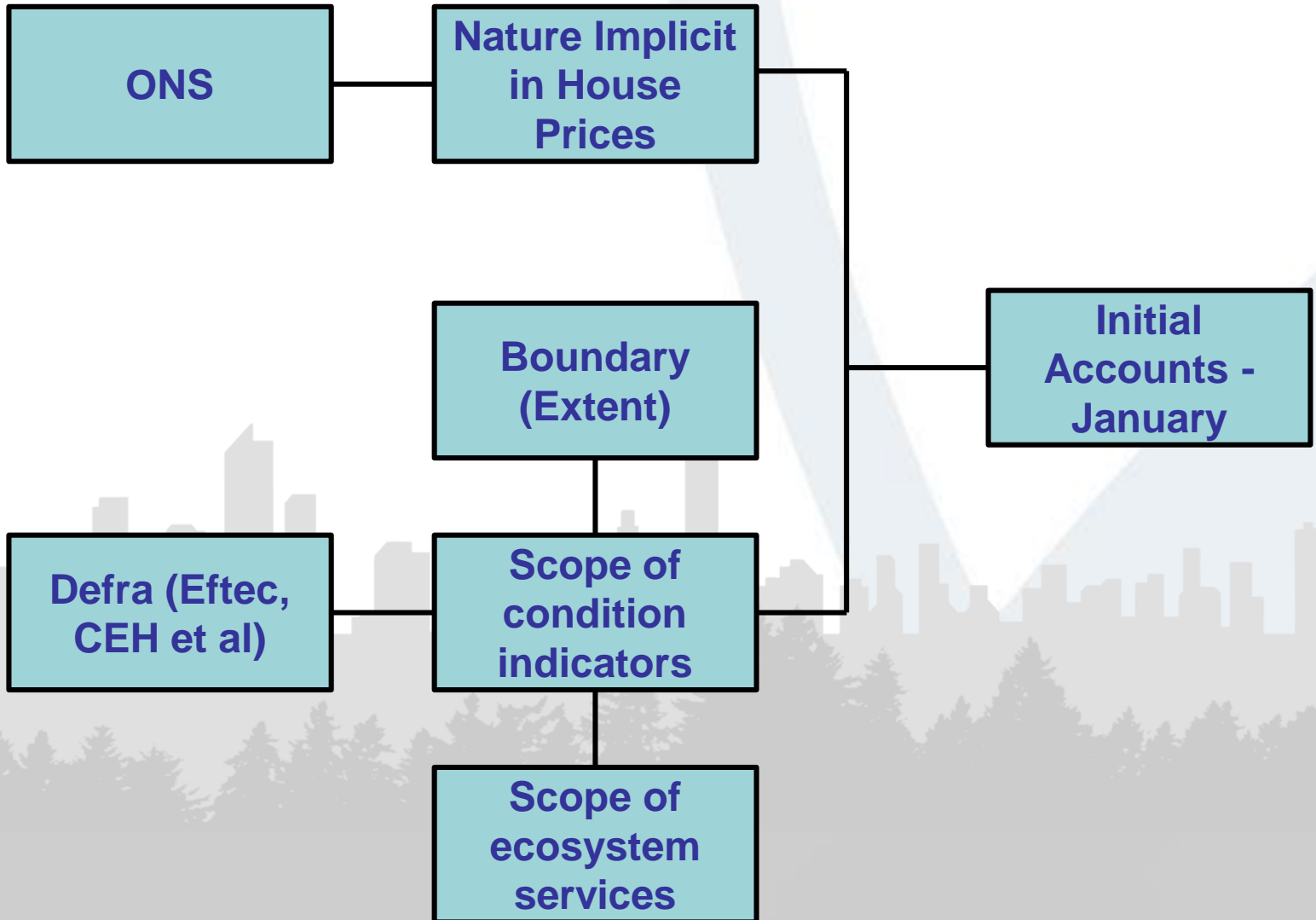
Produce an urban ecosystem account which aims to help both private and public sectors to value and monitor the extent and condition of nature in the urban environment, in addition to helping policy makers prioritise investment and make informed decisions.

- **Why are Urban accounts specifically significant?**

The world is becoming increasingly more urbanised. The UN (2014) states around 54% of the world's population now lives in either a town or city. While around 82.3% of the UK population reside in urban areas.

Impact of greenspace on public health and the growing government interest in the role of urban parks.

ONS & Defra working together to develop UK urban accounts



Defining urban

- **What is “Urban”?**

- Most sources define urban either based on population or on land cover. For example, the ONS (2011) Rural-Urban Classification defines output areas as urban if they have a population over 10,000. The land cover map however, as the name suggests, defines what’s urban on land cover.

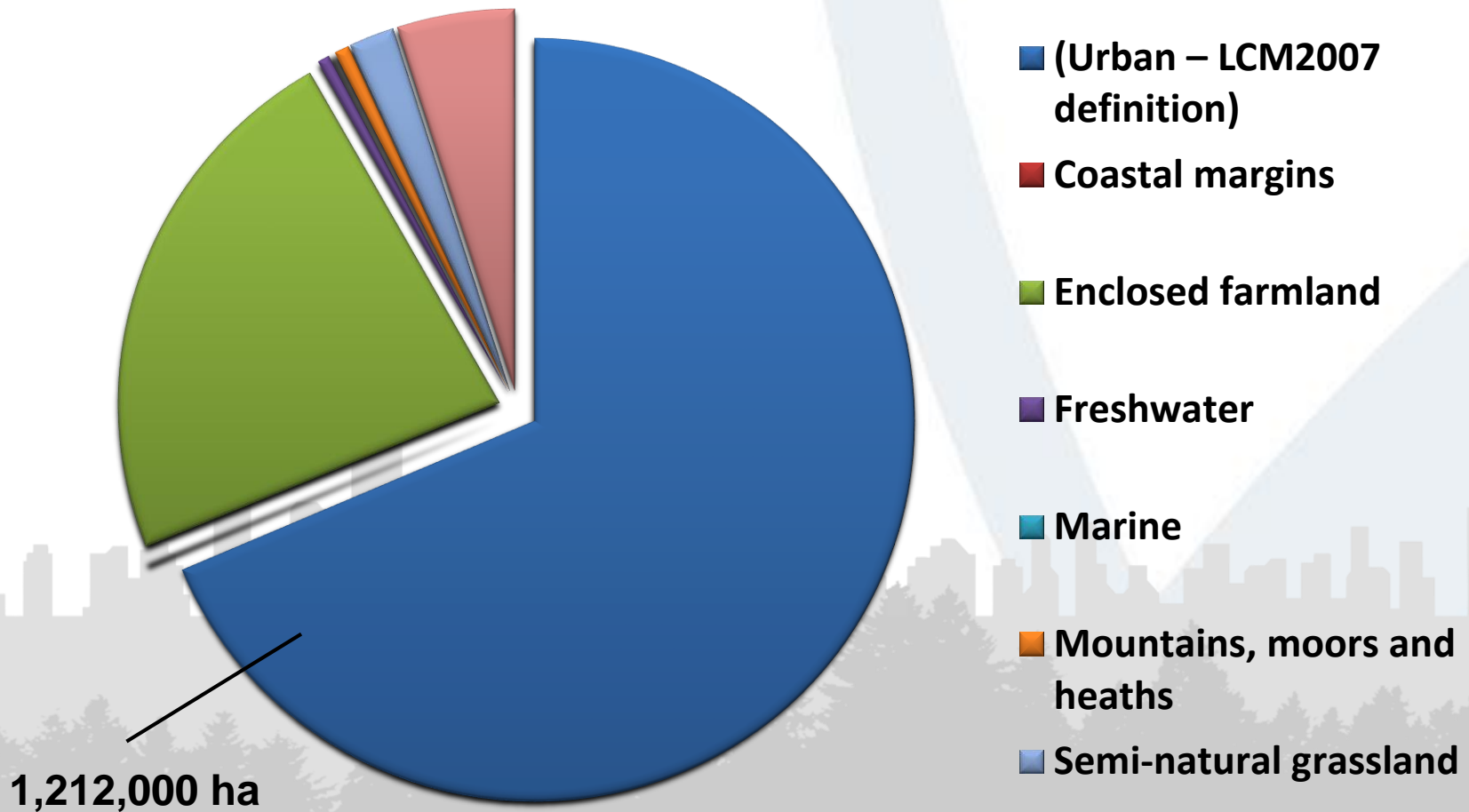
- **How we define urban in our accounts**

- We follow Eftec (2017) in their selection of the ONS (2011) Built-up-Areas dataset. The dataset has been modified so it also includes areas of land such as large parks that are mostly surrounded by urban built-up-areas.

Extent account (enhanced BUA (2011))

| Indicator | | Scale | Amount | Unit | Source |
|-------------------------------|---------------------------------|-------|-----------|--------|---|
| Total urban area | | UK | 1,765,700 | Ha | Enhanced ONS BUA (2011) |
| Green infrastructure features | Mountains, moors and heaths | UK | 11,200 | Ha | LCM2007; |
| | Park area | GB | 420,400 | Ha | OS Mastermap |
| | Trees | | 99,400 | Number | |
| | Allotments | UK | 163,000 | Number | National Society of Allotment and Leisure Gardeners |
| Blue infrastructure features | Lakes/Ponds/Rivers ^b | GB | 22,700 | Ha | OS Mastermap |

Extent account (enhanced BUA (2011))



Condition Account

- **Examples of indicators we intend to use:**
 - **SSSI's condition** (Sites of Special Scientific Interest)
Supplied info on their condition by Natural England and Scottish Natural Heritage. Normally in the form of favourable/unfavourable.
 - **Green Flag Award Status** Recognises and rewards well managed parks and greenspaces across the UK.
 - **OS Open Greenspace** Used as an indicator of open access. The layer pin points accessible points to green space and also clarifies what type of access this may be
 - **Accessible Natural Greenspace Standard** Natural England produced a criteria to assess current levels of accessible greenspace
 - Other

Ecosystem services

Provisioning

- Providing food
- Providing raw materials
- Providing freshwater
- Providing medicinal resources

Regulatory

- Regulating local climate and air quality
- Capturing and storing carbon
- Protecting against weather
- Preventing soil erosion
- Treating waste water
- Pollinating

Cultural

- Recreation
- Tourism
- Spiritual
- Experience
- Aesthetic value
- Wellbeing

Heritage

- Providing species with a habitat
- Protecting genetic biodiversity

Ecosystem services

- **Services that Eftec have developed in their scoping study:**
 - Food
 - Climate Regulation (Global)
 - Noise Regulation
 - Climate Regulation (Local)
 - Physical Health

Hedonic Pricing Method

- **What is it?**

- Based on the premise that a class of differentiated products can be broken down into a number of characteristics. A combination of these characteristics and the external factors that affect the product is what is deemed to then determine the price.
- Can be used to estimate the extent to which the characteristics/factors affect the price through running a regression of house prices on explanatory variables

- **What are we trying to value?**

- Cultural services: defined by the NEA (2011) as “the environmental settings that give rise to the cultural goods and benefits that people obtain from ecosystems.”
- Includes: spiritual and religious benefits, heritage, recreation, tourism, aesthetic views, along with educational benefits and supporting physical and mental health.

Hedonic Pricing Method

| Characteristic Vector | Component Variables | Source |
|--------------------------------|--|---|
| Structural Characteristics | No. of bedrooms No. of bathrooms No. of reception rooms Type of property New build dummy variable | Zoopla Land Registry for England Wales Registers of Scotland House Price Data |
| Neighbourhood Characteristics | Distance to transport infrastructure Distance to local labour market Distance to school | OS MasterMap |
| Socio-economic characteristics | | ACORN |
| Environmental Amenities | Distance to Greenspace Distance to Bluespace Proportion of green/bluespace in certain radius of property | |

Advantages/ Disadvantages

- **Advantages:**

- Returns market-based marginal prices of environmental goods and services comparable to those used for standard market goods
- Estimates value based on real life choices rather than hypothetical ones (desirable from a policy perspective).
- Data on property transactions and characteristics are readily available.

- **Disadvantages:**

- For accurate and robust estimates to be obtained from the method, large datasets are required
- Results depend heavily on the model specification that's used
- Effectively it represents a bundle of services e.g. amenity, health, views and therefore there's an obvious risk of double counting.

In January we will publish....

- Extent account
- Condition Accounts
- Service accounts - Eftec Work
 - Hedonic regression analysis
- Urban will then be added to the habitat account publication