



Department  
for Environment  
Food & Rural Affairs

# Ecosystem accounts for UK urban areas

For UN SEEA EEA Virtual Expert Forum

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Agency

# Policy context - UK Government's 25 Year Environment Plan (2018)

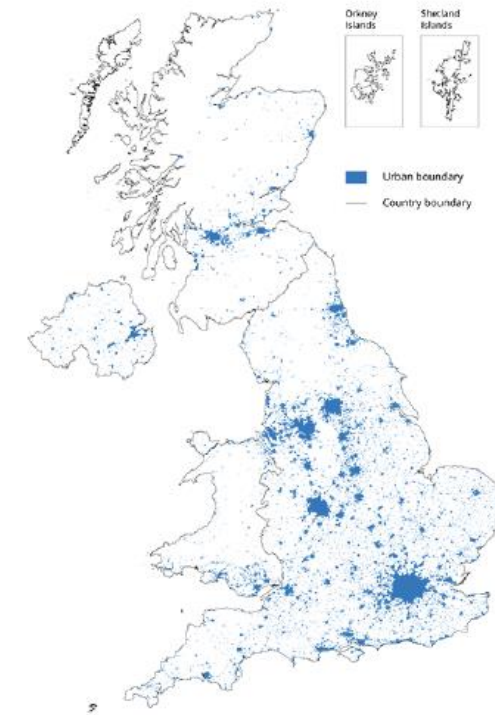
## Aims include:

- To improve health and wellbeing by using green spaces
- Develop national framework of green infrastructure standards
- Encourage children to be close to nature, in and out of school
- Biodiversity and environmental net gain from urban development
- UK urban accounts actually developed prior to this as part of UK Natural Capital accounting 2020 Roadmap

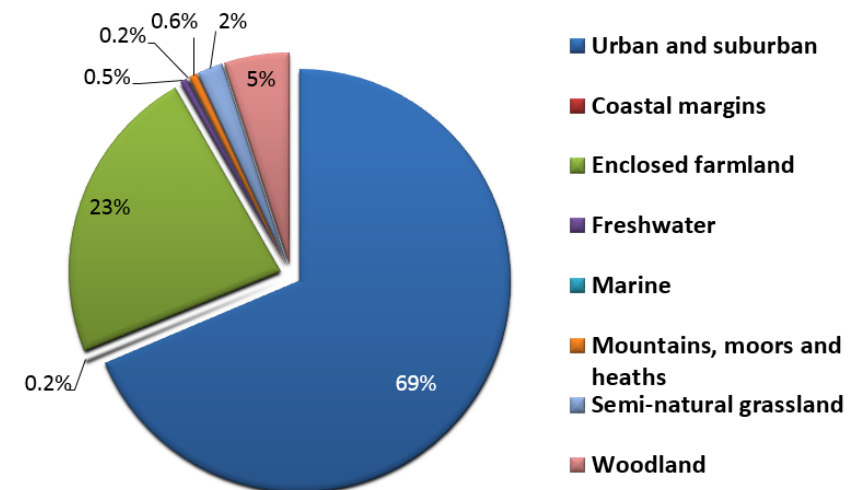
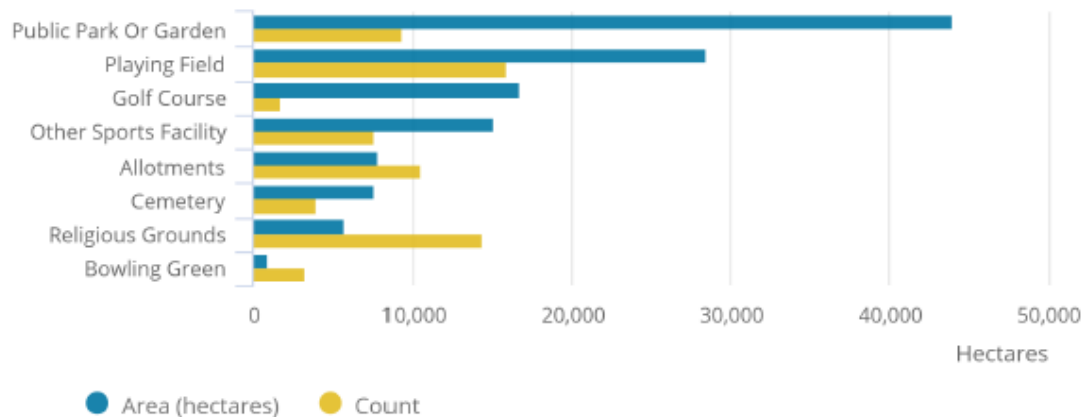


# Extent - Defining urban is not straightforward

- UK account uses adjusted Built-Up areas spatial data layer complemented by OS layers for greenspace detail
- Preferred to rural-urban classification and land cover map
- Covers a range of land cover types
- Introduce buffer around built up area to capture significant blue and green spaces which are viewed as part of that urban area's natural capital – methodology under review
- 8% of UK land; of which:
  - 30% is natural / green space; 7% is “functional” green space



Extent of functional green space (hectares) by type of function and number of sites, Great Britain, 2019



# Accounting for ecosystem condition in UK urban areas

Challenging to identify relevant data and indicators.

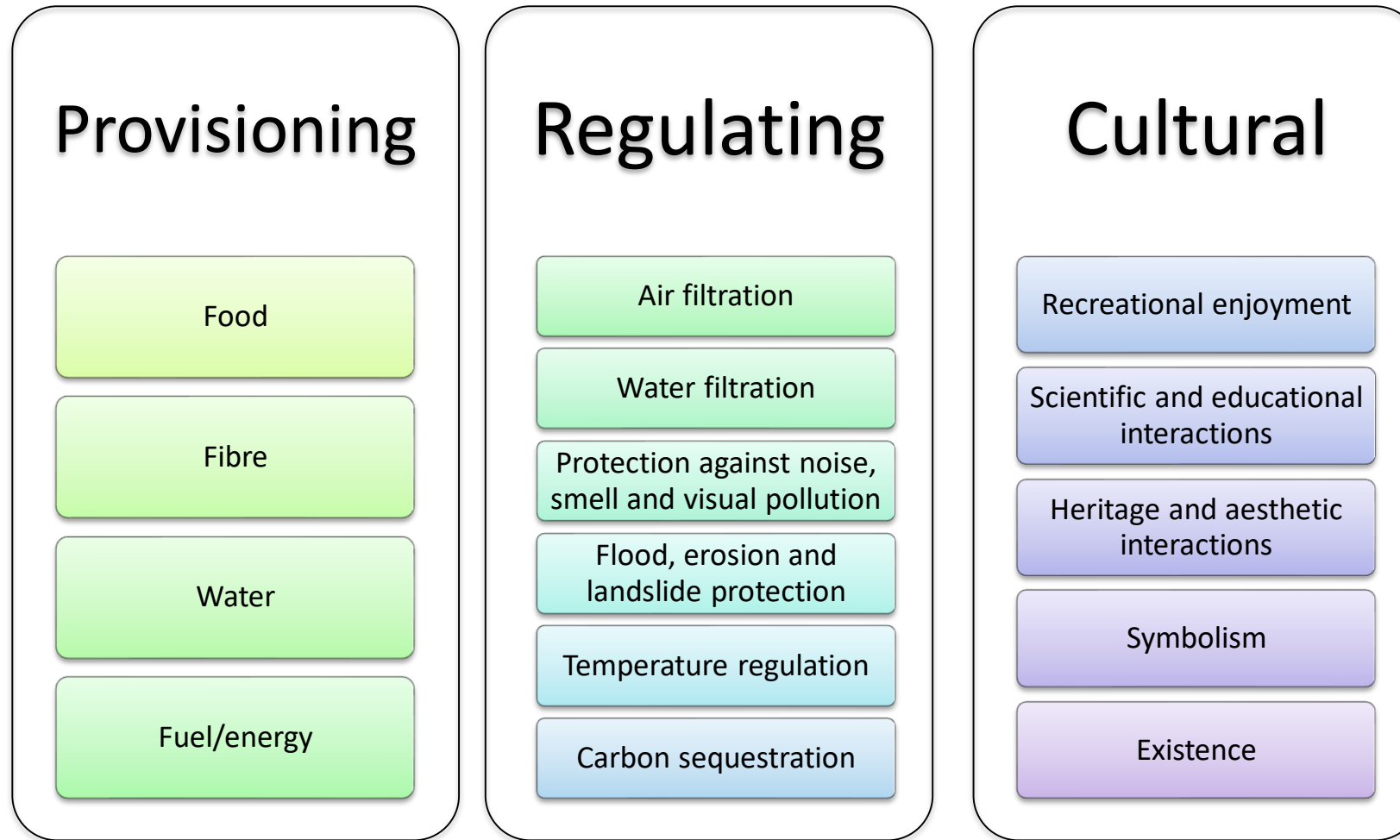
## **Currently**

- % of urban area under natural land cover (extent)
- Sites of Special Scientific Interest in urban areas (around half in unfavourable condition)
- Green Flag Awards (13% of urban parks)
- Access points to green space
- Indices of urban birds and mammals

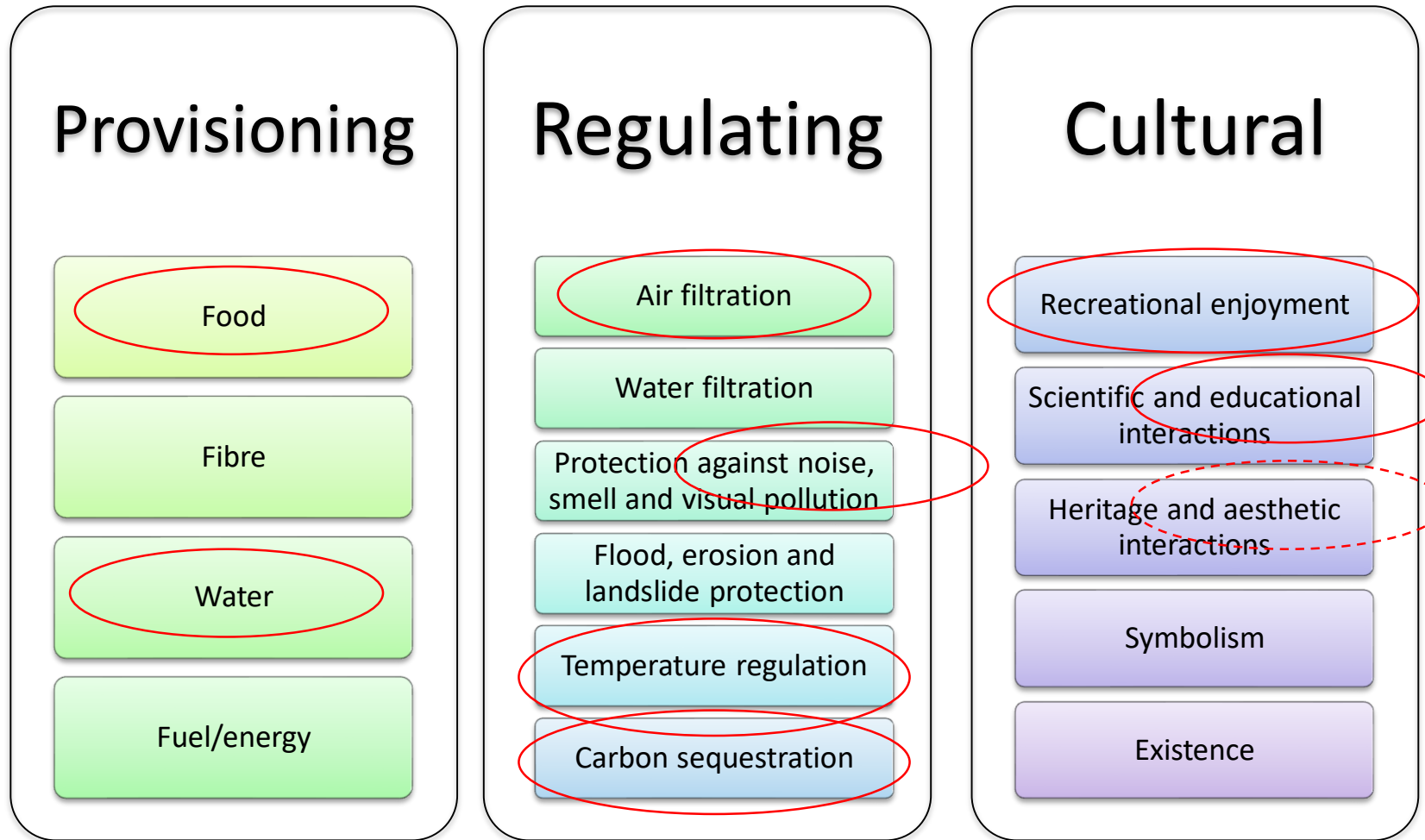
## **Under consideration**

- Condition of vegetation e.g. canopy, permeability
- Location and spatial configuration e.g. vegetation near roads, connectivity
- % population within x metres of accessible green spaces
- Pressure indicators

# Ecosystem services



# Ecosystem services



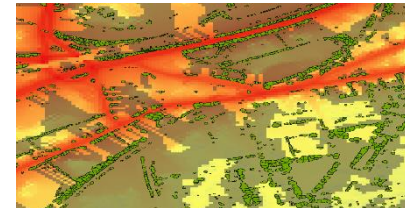
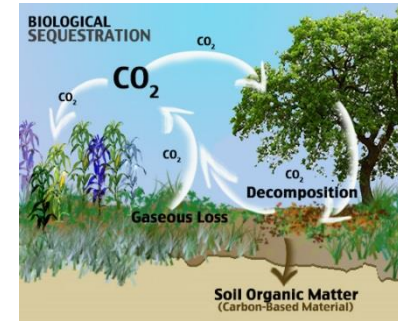
# Provisioning services

- Enabling food production - allotments and community gardens
- 317,000 plots in UK urban areas
- Currently output-based valuation – rentals may be better, though likely to be low
- Farmland within urban areas should be included – help identify land-use trade-offs



# Regulating services

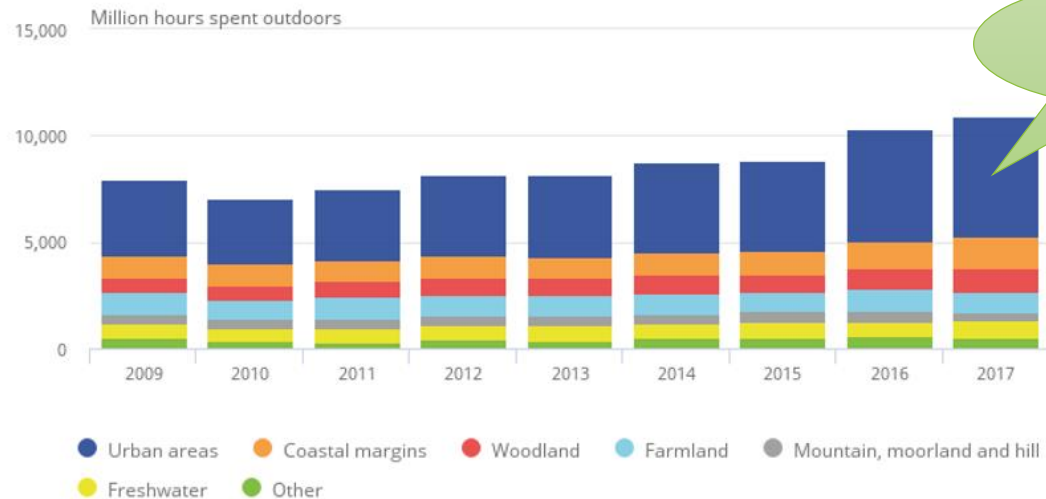
- **Carbon sequestration** of urban woodland (based on non-market target-consistent abatement cost)
- **Air pollution removal** – particularly valuable in urban areas in terms of pressures and beneficiaries (valuation based on damage costs)
- **Traffic noise regulation** – by roadside vegetation. Needs modelling.
- **Temperature regulation** – average temperature reduction on hot days attributable to green and blue urban space, leading to reductions in heat-related economic losses. Currently crude.
- **Natural drainage** – very spatially specific and depends on existing drainage. Area for further research. Possibly based on replacement costs.





# Urban ecosystems are the leading supplier of cultural services – and a key source of health benefit

Flow of outdoor recreation, million hours spent outdoors, UK, 2009 to 2017



Valued at £2.5 bn  
in 2017



## Physical health values

- UK academics have quantified relationship between physical activity in natural environments and “quality adjusted life years”
- In 2015, 362 million visits to green space provide a measurable health benefit
- Equivalent to 74,000 QALYs, replacement cost of £1.1. billion
- Health and local authorities interested in these!



## Local amenity value

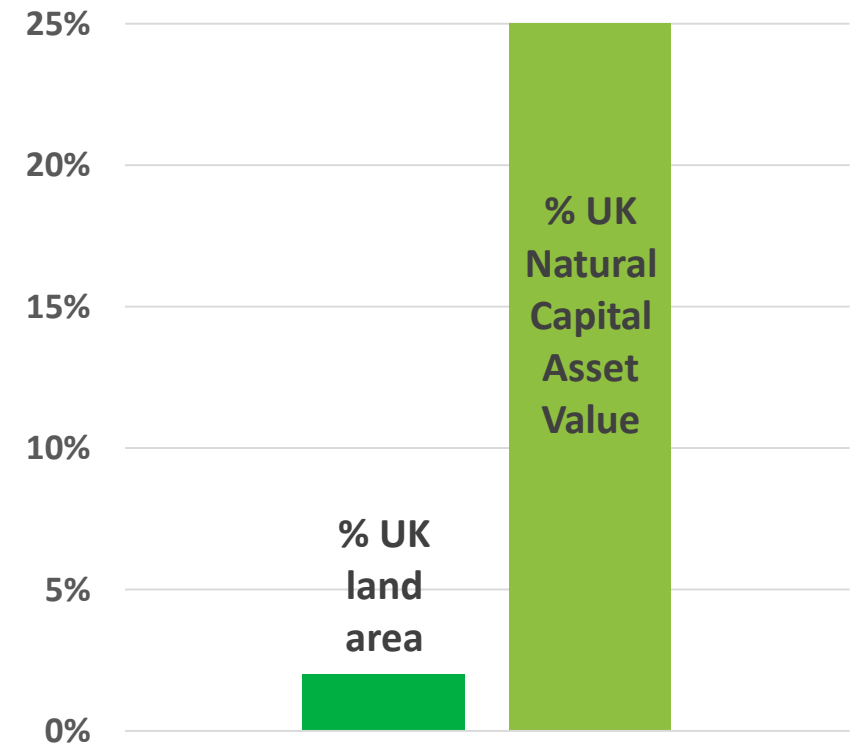
- Value of local green space captured within house prices.
- Captures option for accessing “free” local recreation as well as visual amenity
- 1.2% price premium in 2016 for houses within 500 m of publically accessible green and blue spaces
- Further 2% premium for houses overlooking green or blue space

# Key insights from UK Urban Accounts

- Urban ecosystems are disproportionately valuable
- Urban ecosystems provide a range of measurable services that benefit local populations
- Residents are a key beneficiary
- Future trends will affect asset values
- Some methods and estimates can be scaled down to sub-national areas
- Cuts across policy and delivery boundaries – challenge and opportunity

## Challenges

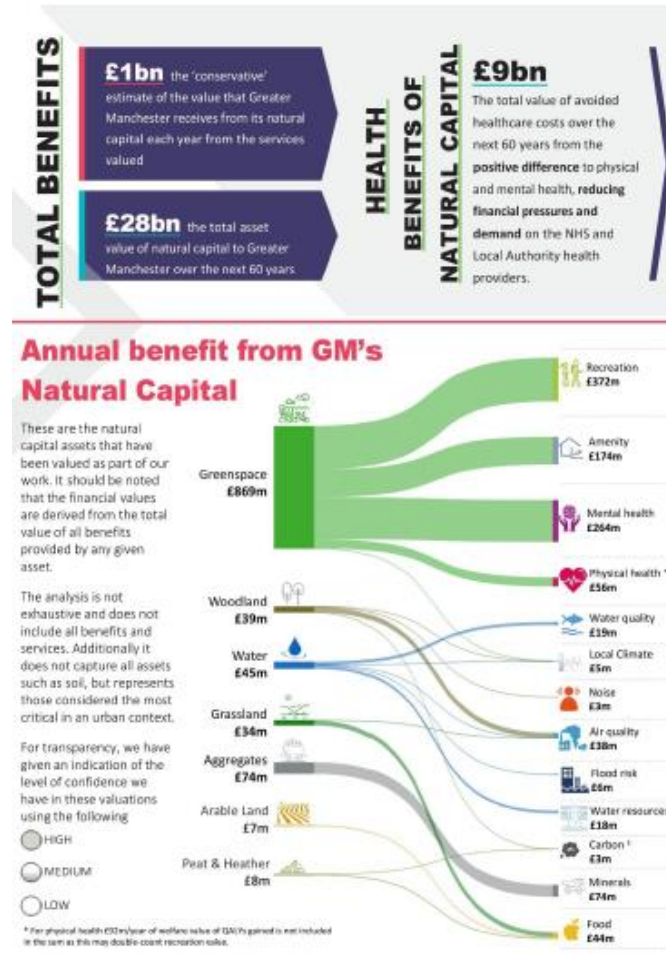
- Only as good as underlying spatial data
- Need for spatial modelling of regulating services
- Identifying relevant condition indicators



# Interest in ecosystem (natural capital) accounting by UK municipal authorities



For every £ spent on public green space in London - £27 of benefits



- Establishing an evidence base
- Informing Green Infrastructure strategies
- Draw on national methods
- But also some local additions / variations e.g. welfare and health values, maintenance costs

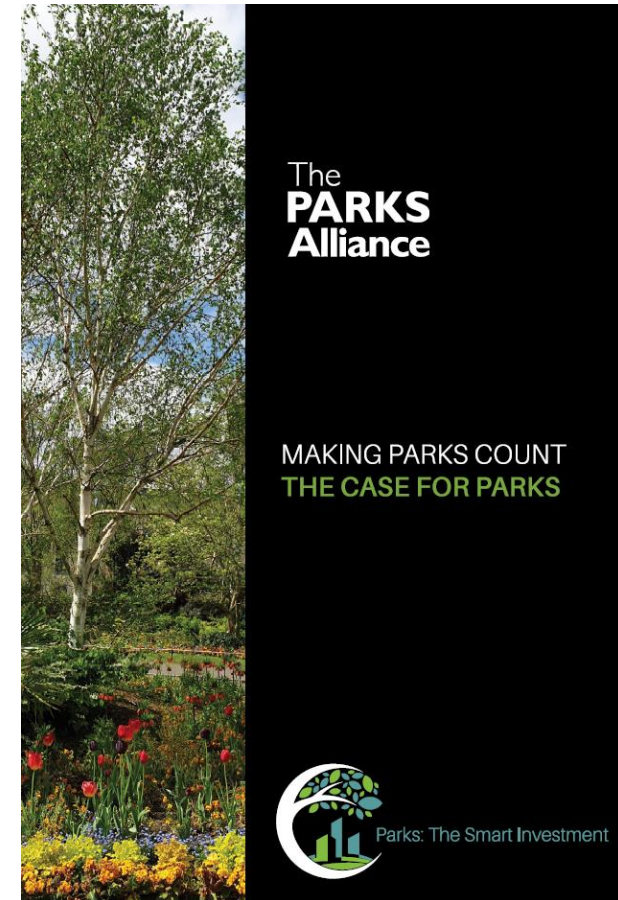


# Urban ecosystem accounting is helping strengthen the case for investing in urban green infrastructure, but challenges remain

- Re-frames nature in urban areas as an asset, not a liability
- Powerful when values are compared with maintenance costs
- Exchange values based on replacement costs can indicate potential savings e.g. health prevention
- Ecosystem accounts can inform and support funding bids
- National-level accounts enhance legitimacy for local strategies
- Potential for linking to policies around environmental net gain

But:

- Accounts only give a baseline – not same as Cost-Benefit Analysis
- Local accounts need repeating to have more impact
- Difficult to prove link between investment in ecosystems and e.g. financial savings
- Variations in local methodologies and between local and national approaches e.g. welfare values





## Concluding thoughts – early days but direction of travel promising

- Urban accounts bring together a range of disparate information into a coherent whole, and identify gaps for investing in data and methods
- But extent, condition and services all evolving
- Monetary valuation can be very powerful
- Potential longer term to support, inform and monitor national policies on green infrastructure and land-use planning
- UK municipal authorities increasingly taking a strategic “natural capital approach” to place-making, health and social cohesion - accounting adds rigour and evidence base.
- Accounting not the only form of evidence – need to integrate with and build on other sources and studies

