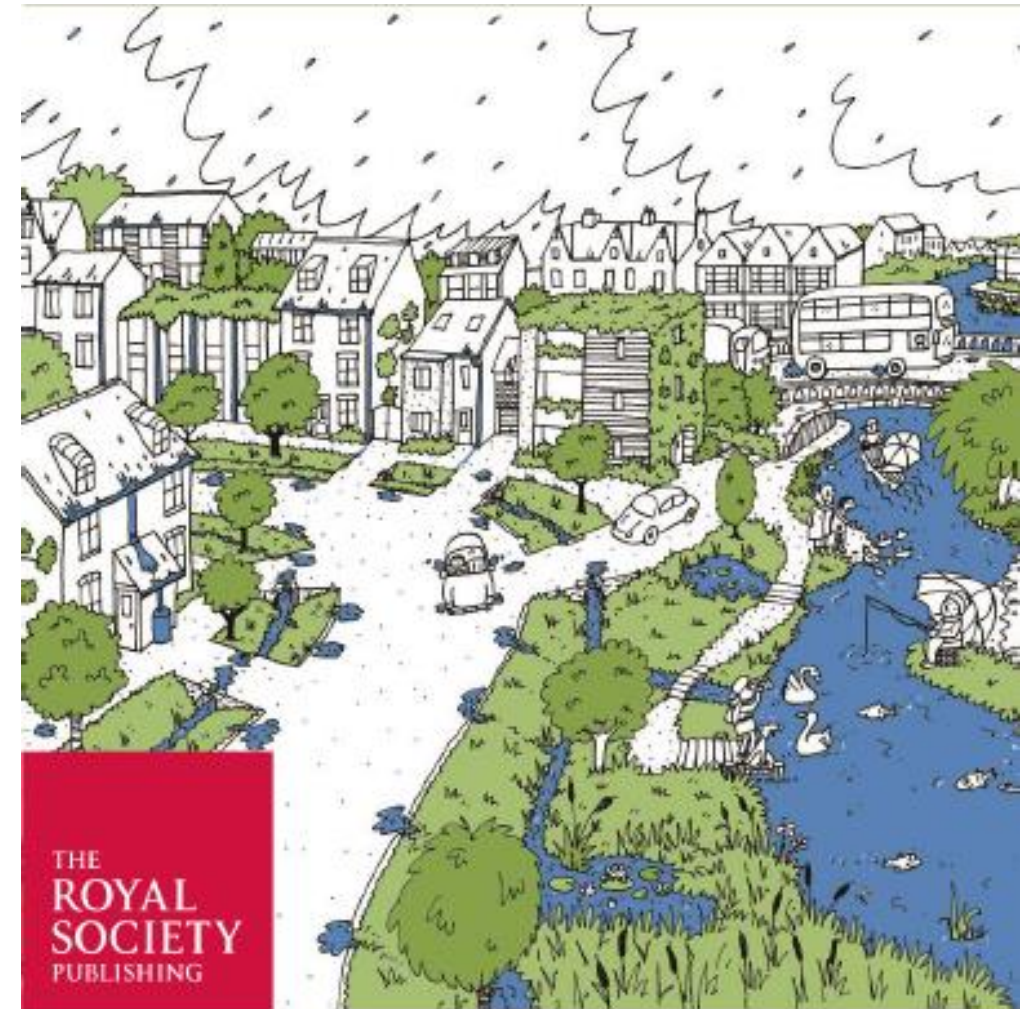


Key questions

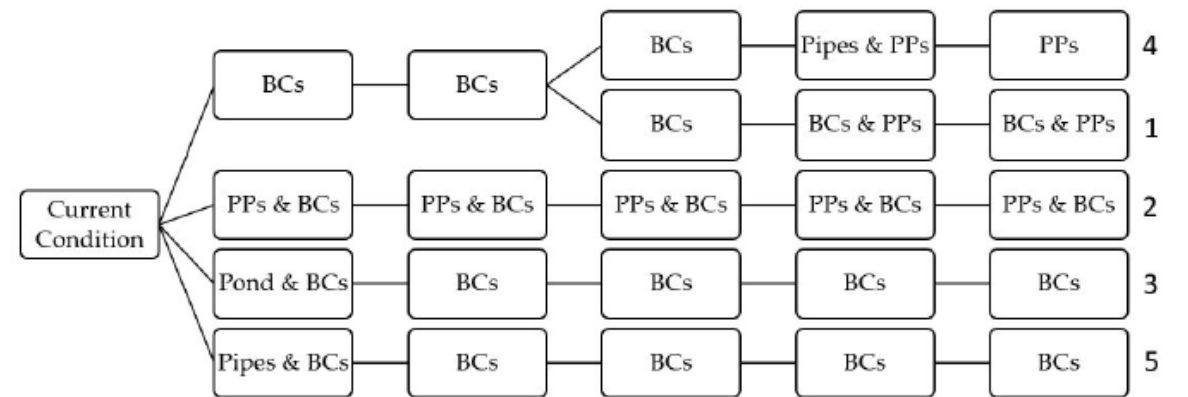
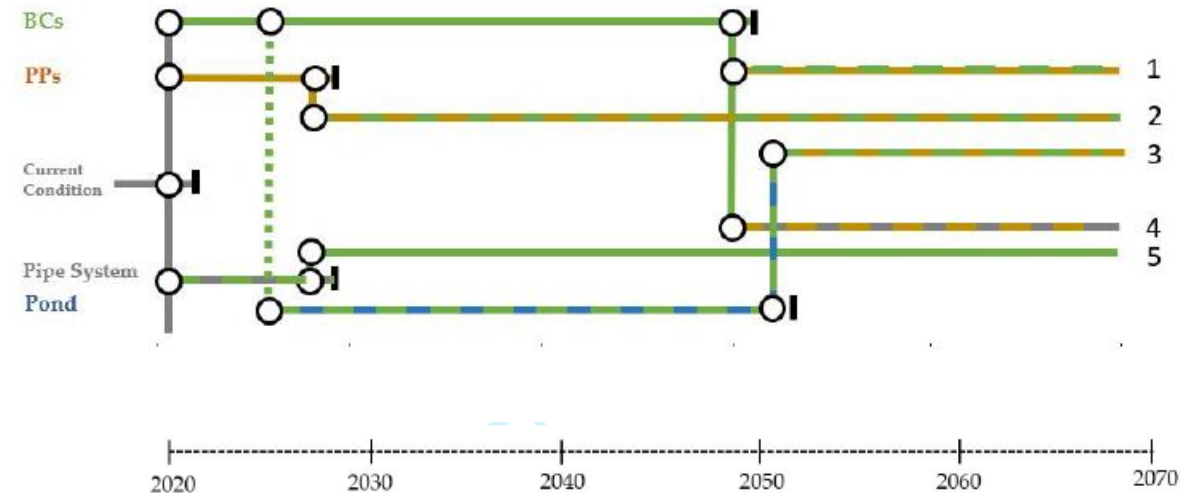
1. What is the right mix of grey and blue-green infrastructure in a given location and specific local context?
2. How do the multiple benefits associated with SuDS and GI propagate over an urban landscape?
3. Can the use of SuDs for flood management improve habitat connectivity in an urban environment?



Question 1

Establishing the mix - use of adaptation pathways

- Identify alternative options for stormwater protection
- Establish performance thresholds and triggers of when they will be exceeded
- Jump to another pathway to provide additional capacity
- Evaluate all possible pathways through a multiple benefit analysis



Examples here show this procedure for part of the London Borough of Sutton

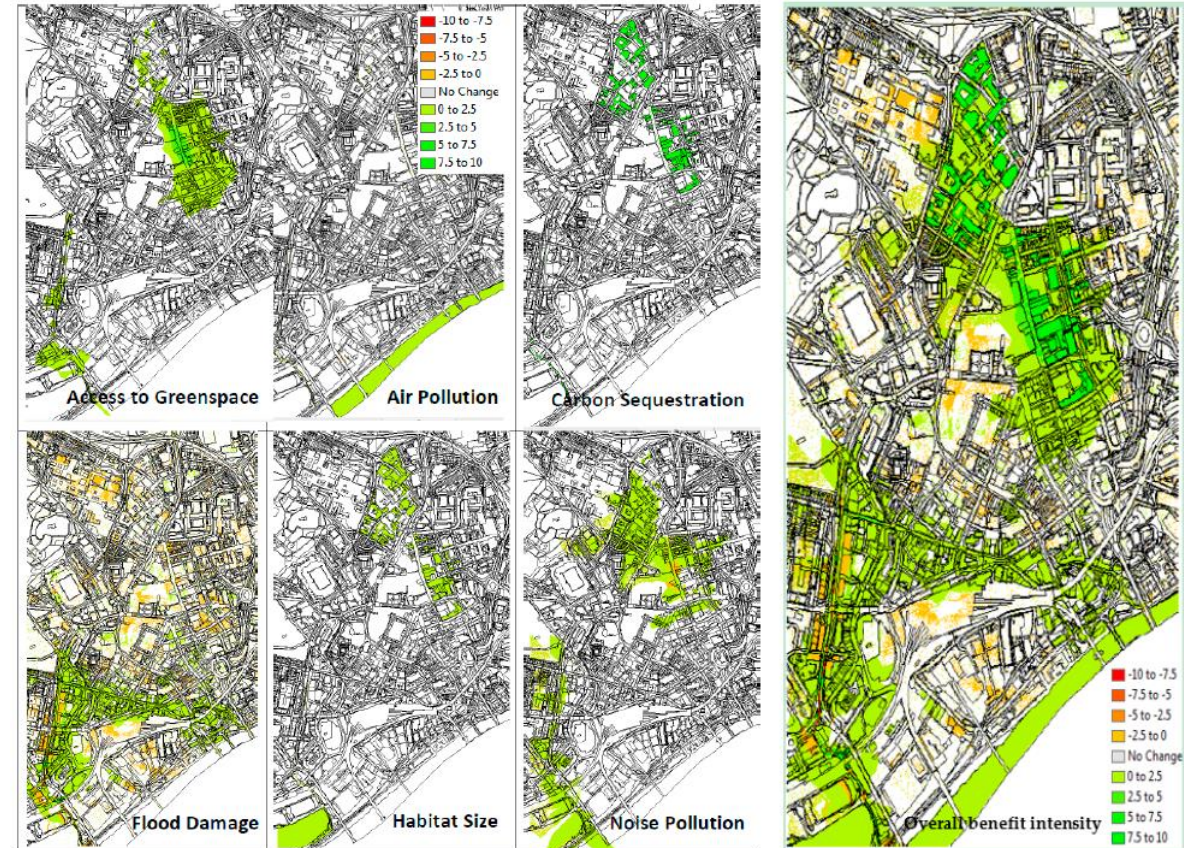
Question 2

Evaluating multiple benefits

Developed a spatial approach using a GIS platform

- Calculate a score for each benefit category, in every 30m x 30 m grid square covering an area
- Normalise these scores against some reference initial condition state
- Add these scores, (each from 0-1), to generate a total *benefit intensity* in each grid square
- Show results as spatial distribution

The example here is for the urban core of Newcastle city centre and covers 6 benefit categories including flood damage avoided



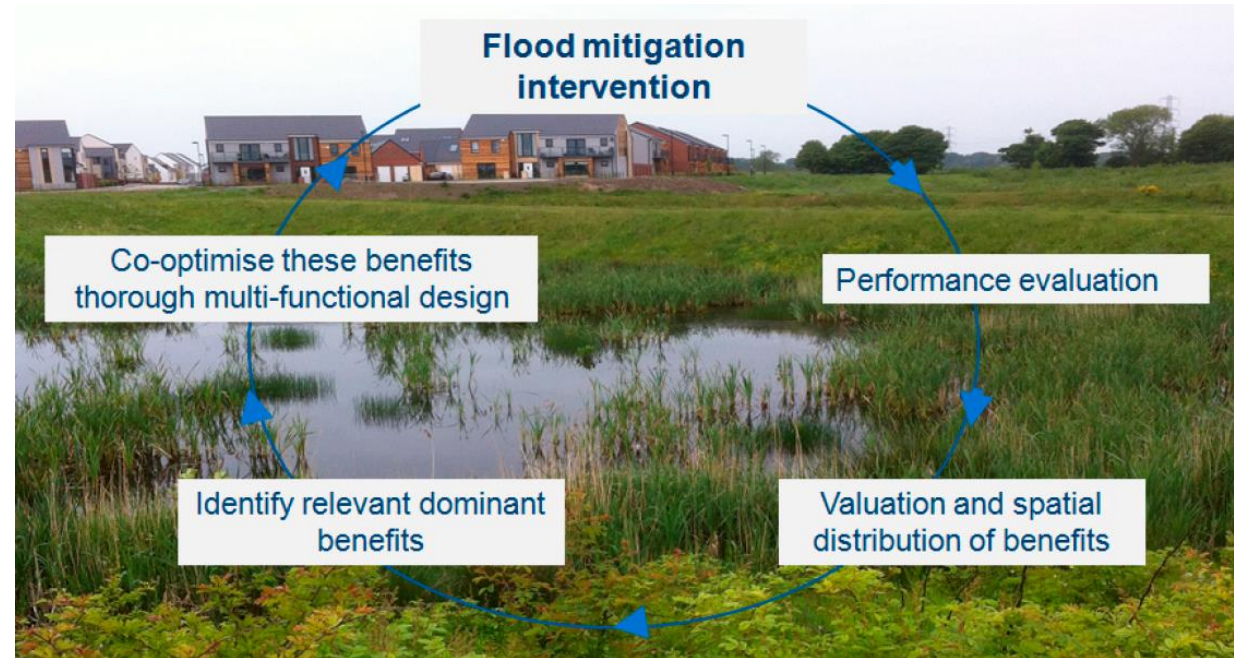
Question 2

Evaluating multiple benefits

Co-optimize relevant dominant benefits through an iterative multi-functional design process

For example,

- (i) By careful consideration of tree and vegetation planting to trap air pollution;
- (ii) Managing green roofs for the effective attenuation of noise or carbon sequestration
- (iii) Extending linear SuDS systems such as swales to enhance urban connectivity of green space;



Question 3

Enhancing Habitat Connectivity

SuDS can act as stepping stones or corridors for species dispersal across urban areas

GIS based analysis based on Graph Theory and the calculation of an Integrated Index of Connectivity (IIC)

Two areas considered:

London Borough of Sutton
Ebbfleet

Conclusion:

- Green roofs have the greatest potential to increase connectivity
- In areas of pre-existing natural space SuDS ponds play a valuable role

For more information see the [Urban Flood website](#)

