




A focus for biodiversity information for Sussex

We are the centre of reference for authoritative information relating to biodiversity in Sussex, working in partnership with both data users and data providers for public benefit.



Biodiversity Information?

Raw data

- Species data
- Habitat data
- Survey information

Derived data

- Geological
- Hydrological
- Geomorphological
- Recreational
- Social



Biodiversity Information gives us:

- A County-scale evidence base for landscape scale conservation
- A tool for planning decisions
- A tool for land-use decisions



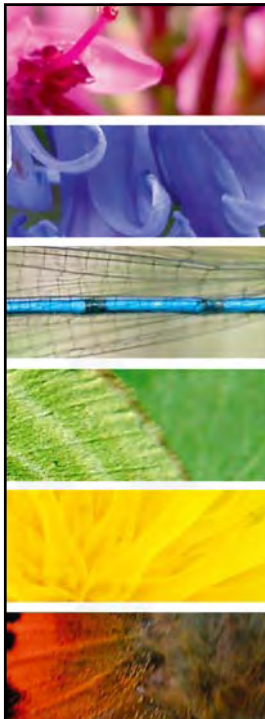
The origins of the conservation evidence base

2 ingredients:



Sussex Biodiversity Record Centre

1: 50,000 OS Maps



But things have come a long way...



**LIVING
LANDSCAPES**
NORTH EAST WILDLIFE TRUSTS



EcoServ-GIS

Ecosystem Services Mapping:
A Wildlife Trust GIS Toolkit to map ecosystem services
at a county scale

Developed by Dr Jonathan Winn
Living Landscape Coordinator
Durham Wildlife Trust



Why EcoServ-GIS ?

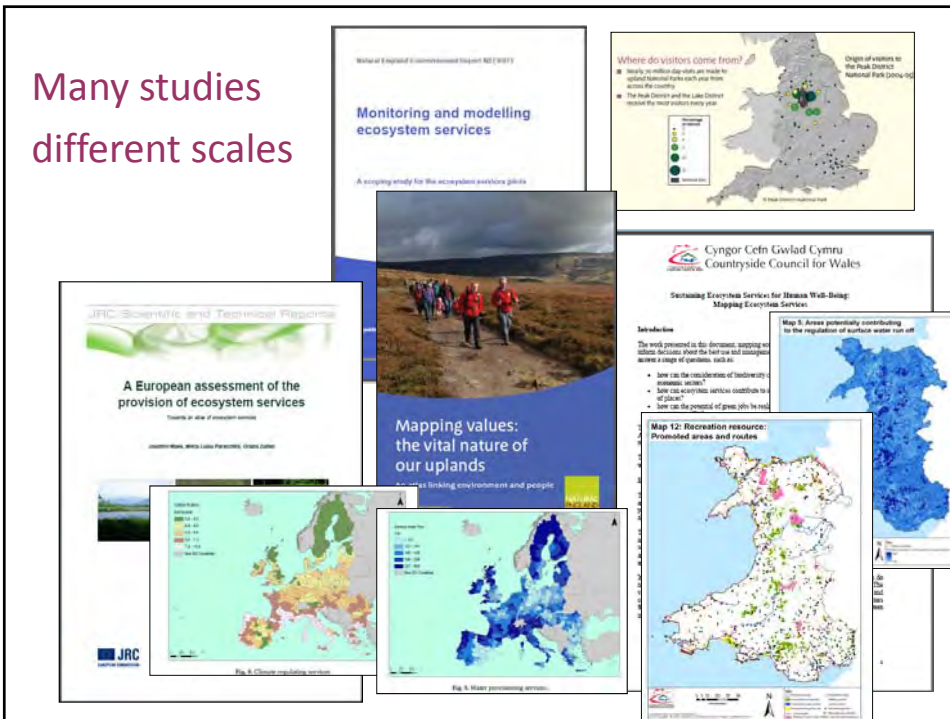
- EcoServ-GIS has been funded by RSWT Strategic Development Fund / Dame Mary Smieton Fund
- It is the Wildlife Trust's contribution to the Ecosystem Approach



Why EcoServ–GIS?

- To develop a tool kit that can be picked up and used in any part of England
- Cost efficient
- Include non-designated sites / general countryside

Many studies different scales



Monitoring and modelling ecosystem services
Natural England
A scoping study for the ecosystem services pilots

Where do visitors come from?
Origins of visitors to Peak District National Park (2009-10)
• How many visitors do you see make the annual Autumnal walk each year from across the country?
• The Peak District and the Lake District receive the most visitors every year

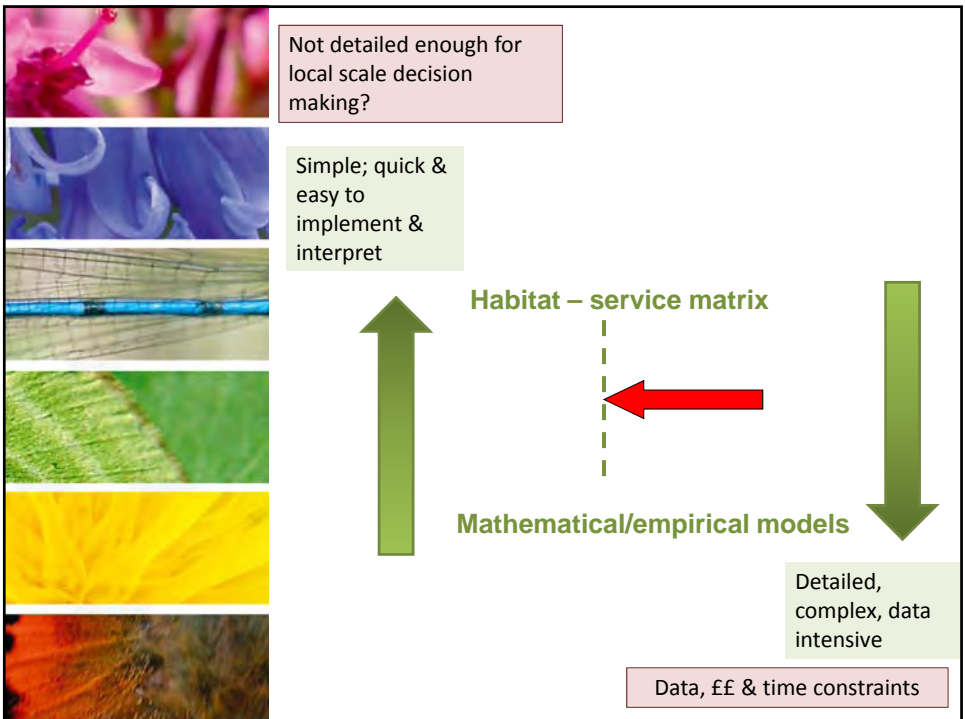
Cyngor Cefn Gwlad Cymru Countryside Council for Wales
Sustaining Ecosystem Services for Mountain Wild-Bees: Mapping Ecosystem Services

JRC - Scientific and Technical Reports
A European assessment of the provision of ecosystem services
Towards a state of ecosystem services

Mapping values: the vital nature of our uplands
Countryside Council for Wales
Linking environment and people

Map 12: Recreation resources: Provisioned areas and routes

Much existing research, literature, reports and methodsbut



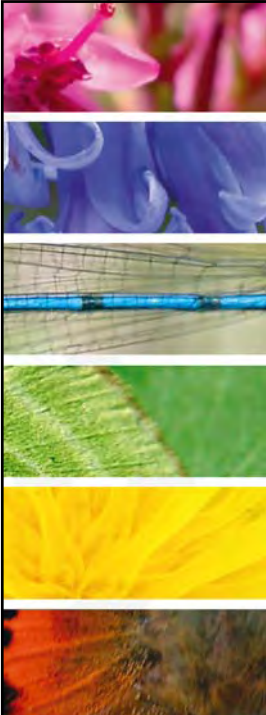
Which services does it cover?

Categories	Ecosystem service	Sub-category
Provisioning	Nutrition	Food provision
	Materials	Timber
Regulating	Climate (biophysical) regulation	Carbon storage Local climate regulation
	Flows / hazard regulation	Noise regulation
	Purification/waste regulation	Water purification
	Biotic environment regulation	Pollination
Cultural	Wild species diversity	Wildlife watching
	Environmental settings and local places	Accessible nature experience
	Information, knowledge, employment	Education / knowledge opportunities




Automating ecosystem service mapping

- ArcGIS Modelbuilder
- Widely accessible data
- User and technical guide produced
 - Transparent
 - Transferable
 - Standardised
 - Repeatable
 - Accessible
 - Easily updated & applied to further analysis



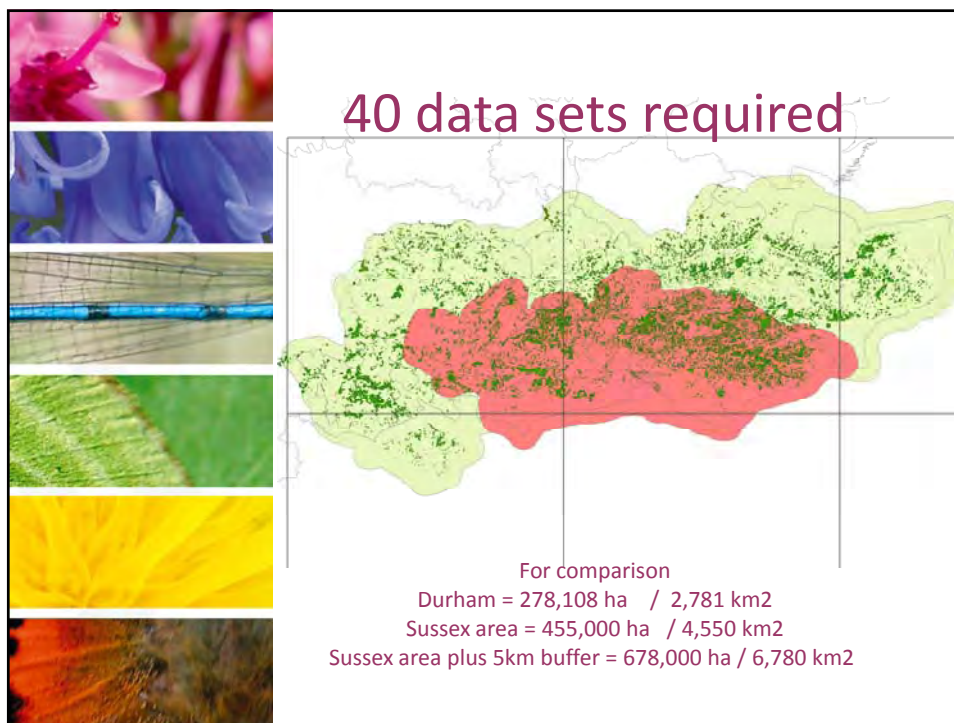
Phase 1
Pilot region

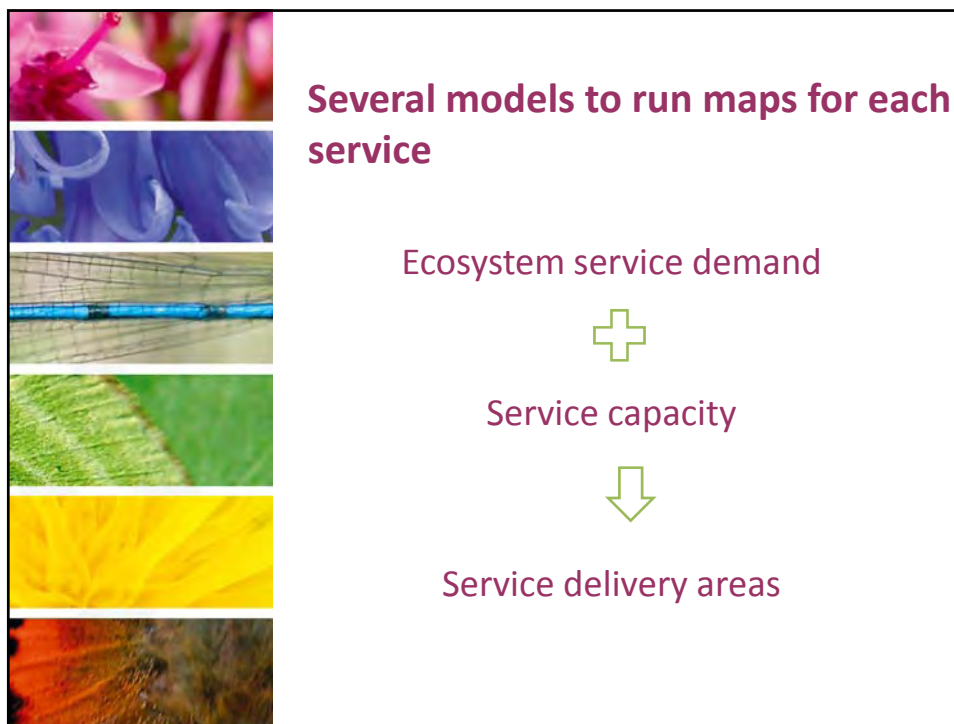
County Durham



Phase 2
Pilot regions

Sussex/South Downs, Somerset
and Northamptonshire





Presentation health warning

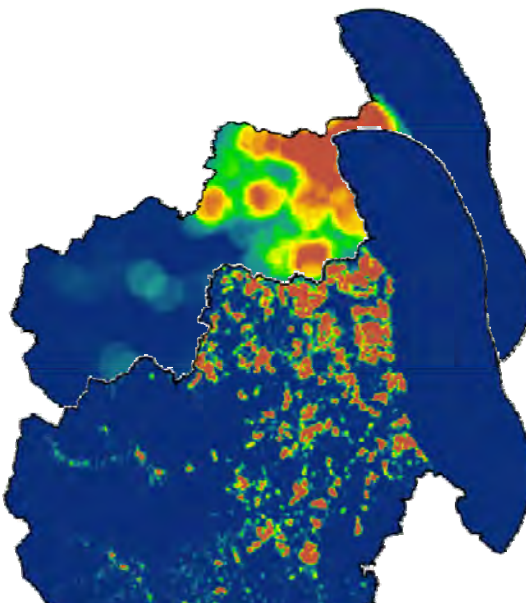
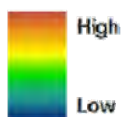


The final toolkit has only just been released, so please don't ask anything too complicated!

Example: Accessible nature experience

DEMAND INDICES

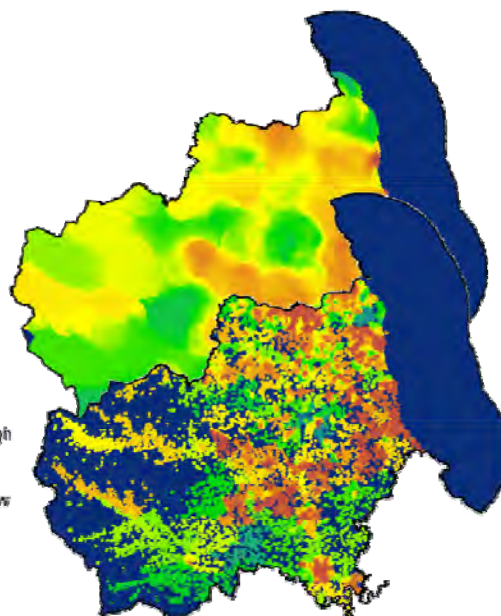
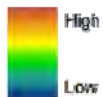
1) Population density measured at 300 m and 3.2 km

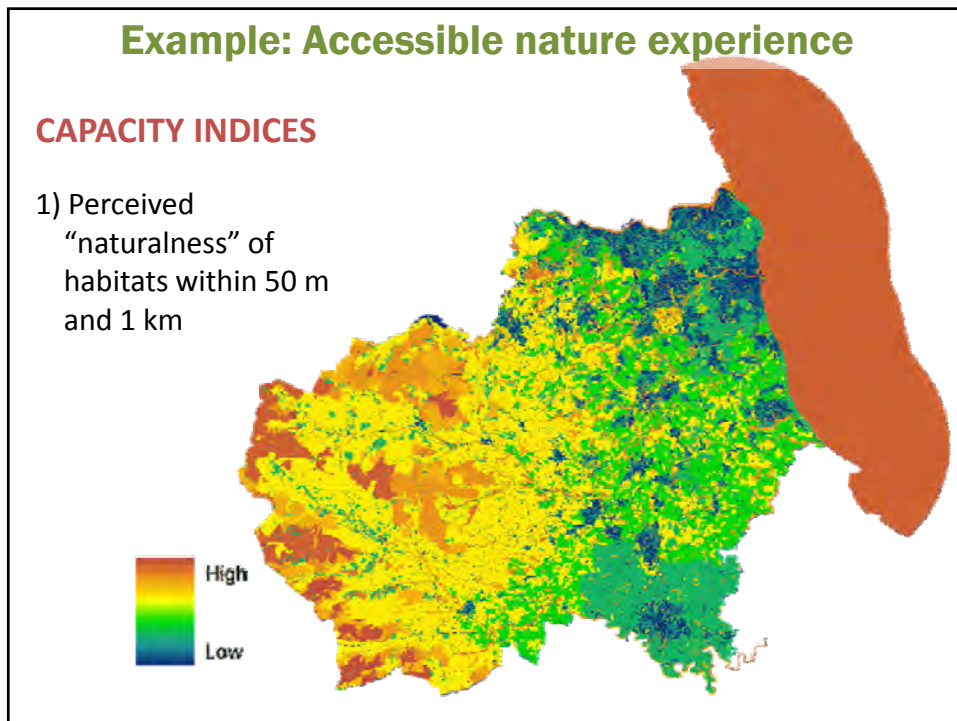
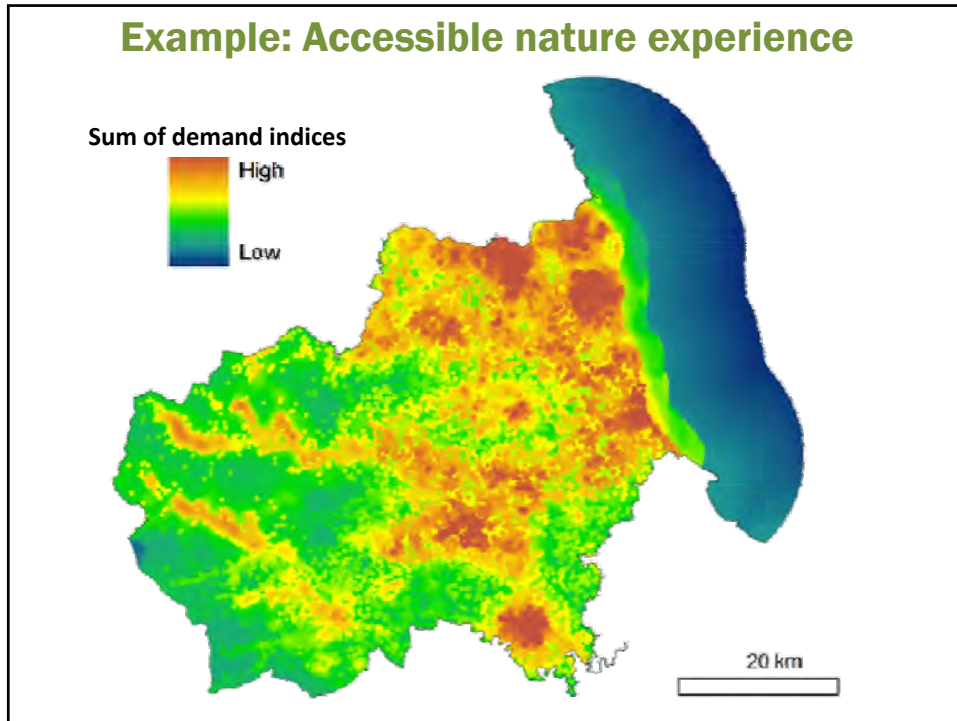


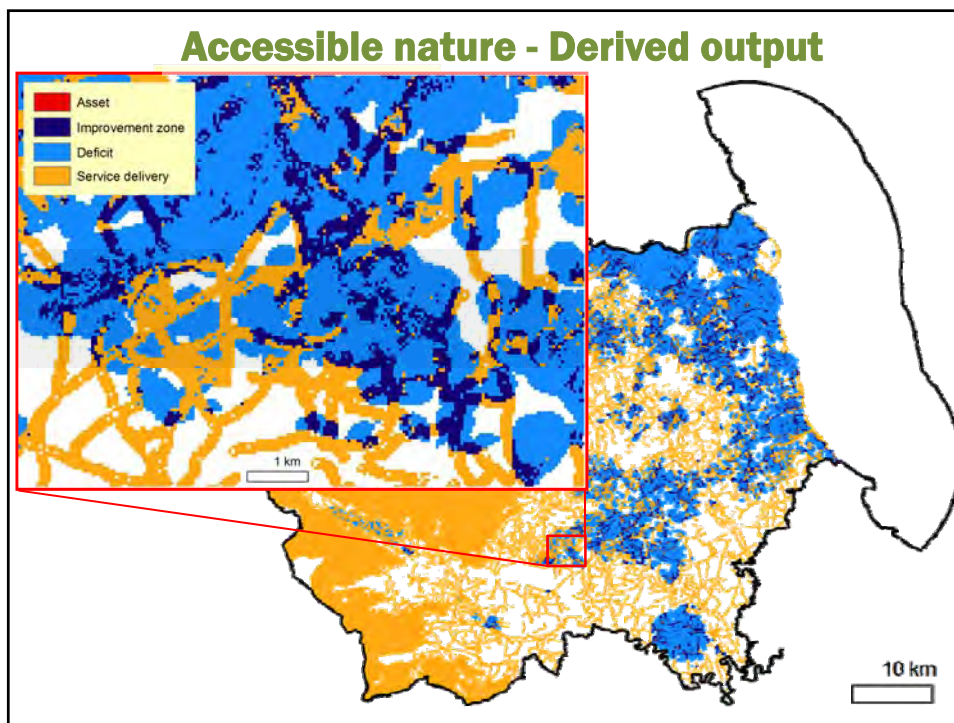
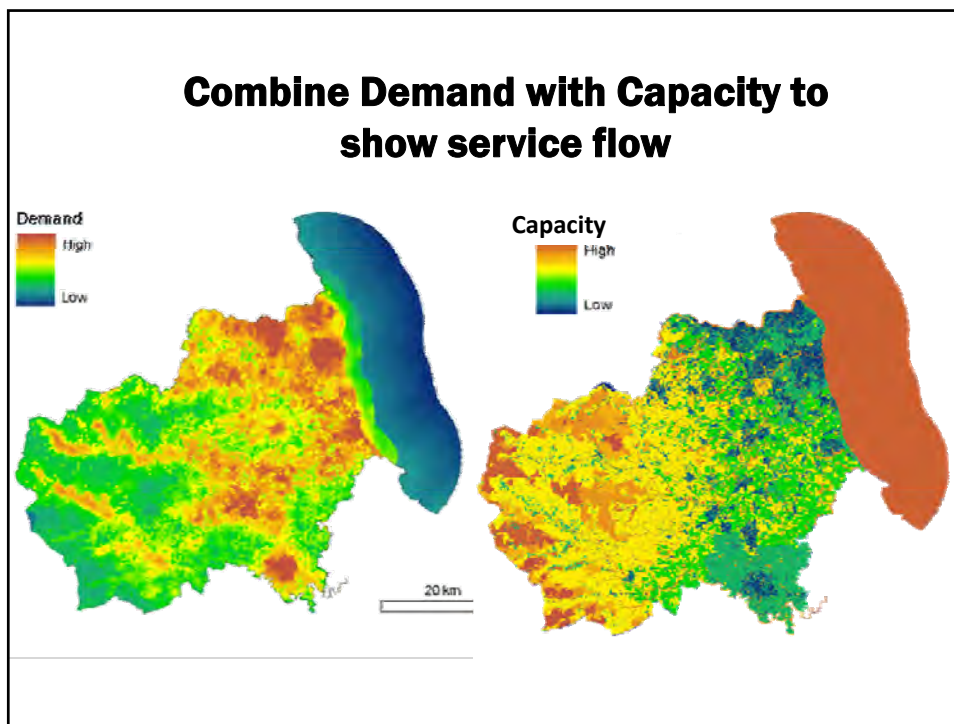
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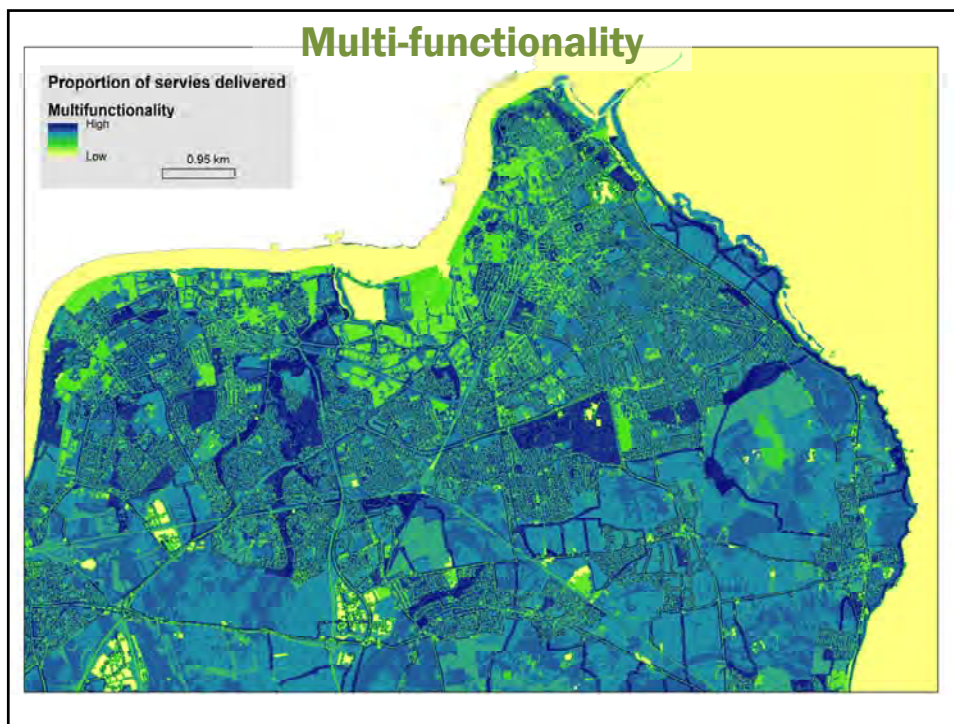
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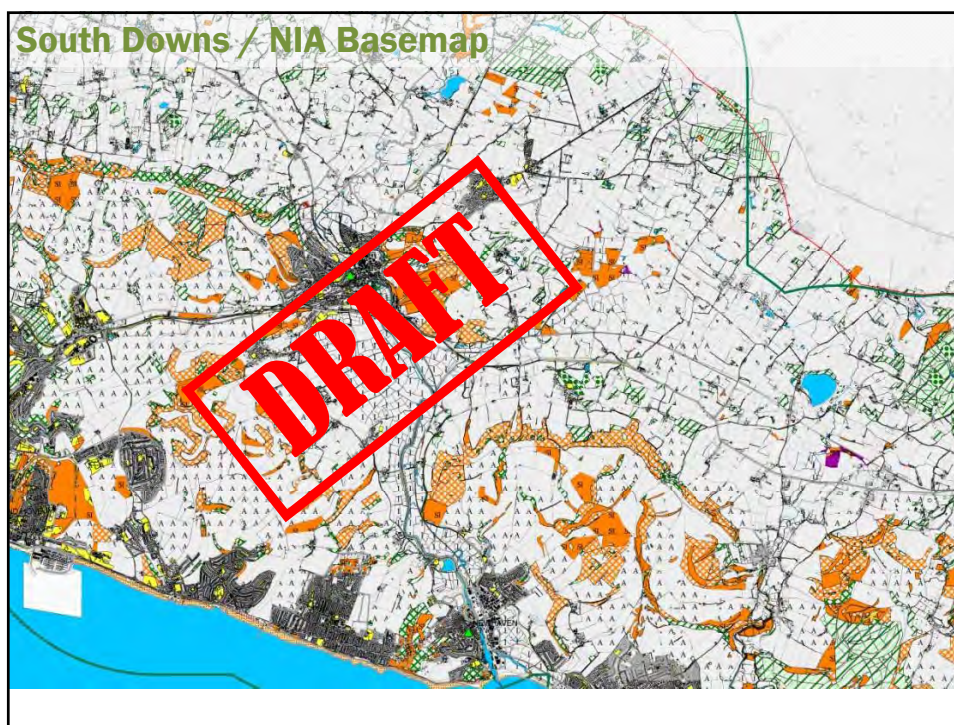
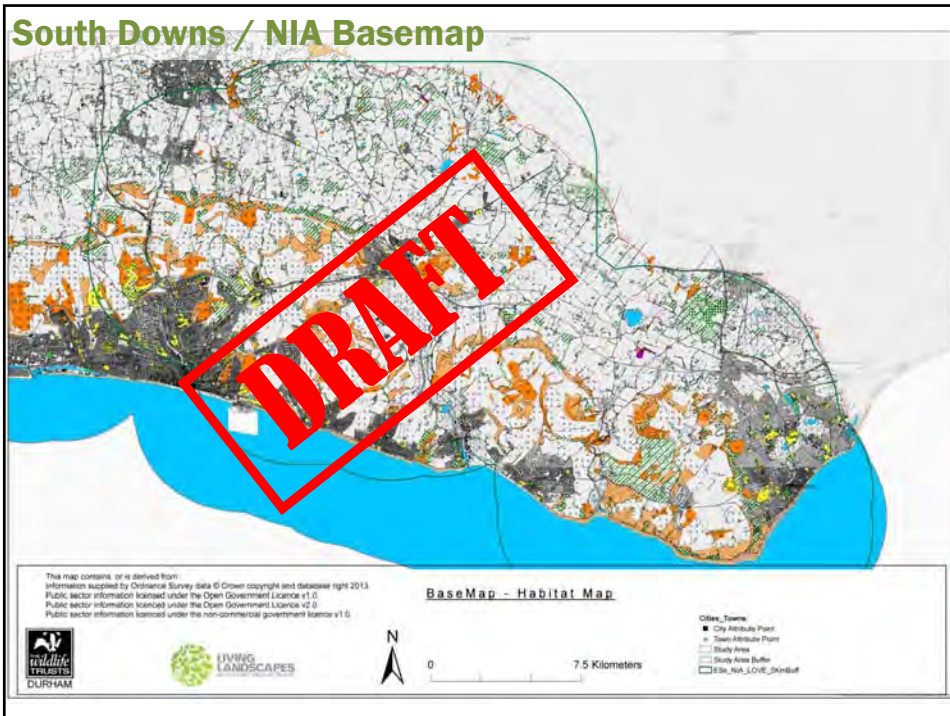
2) Index of Multiple Deprivation health scores measured at 300 m and 3.2 km



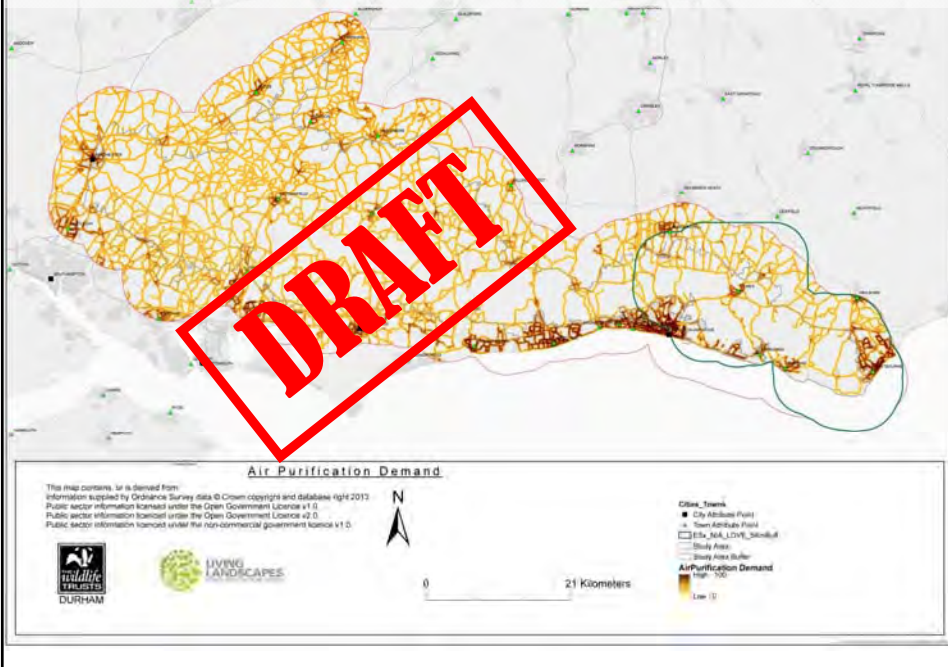




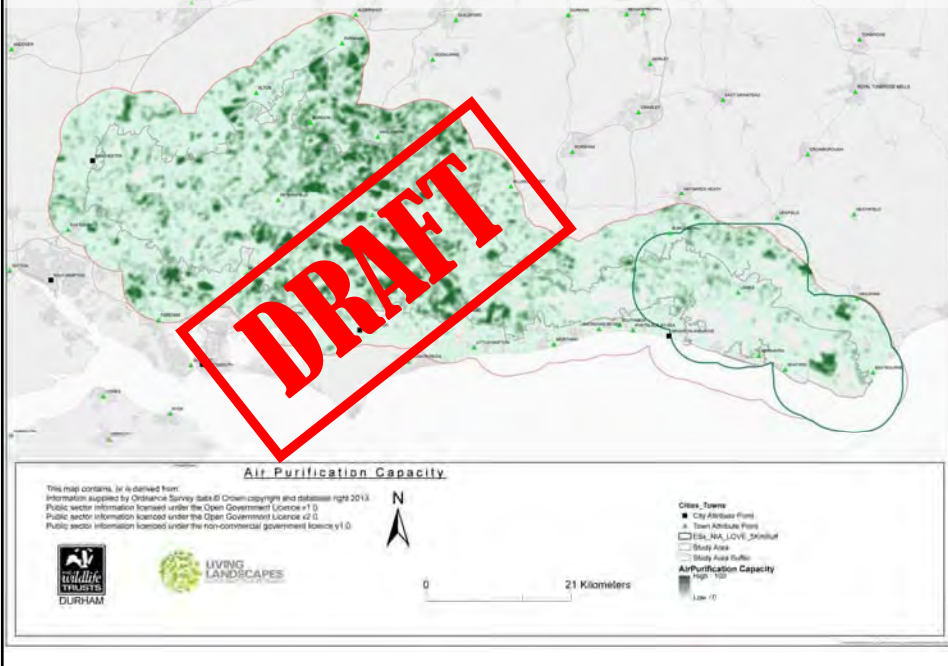




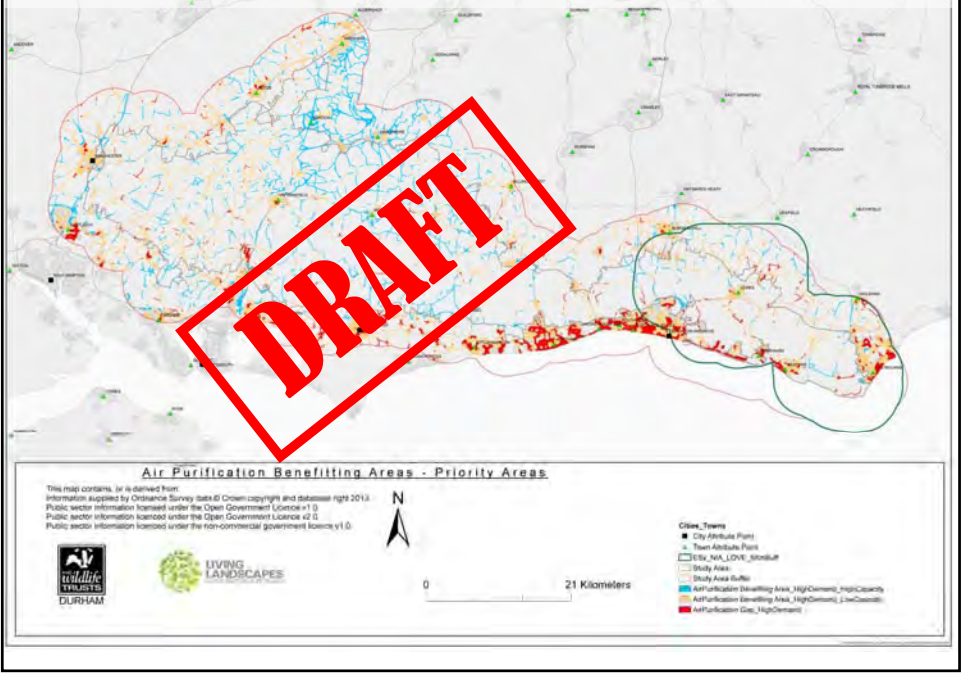
South Downs / NIA – Air Purification Service (Demand)



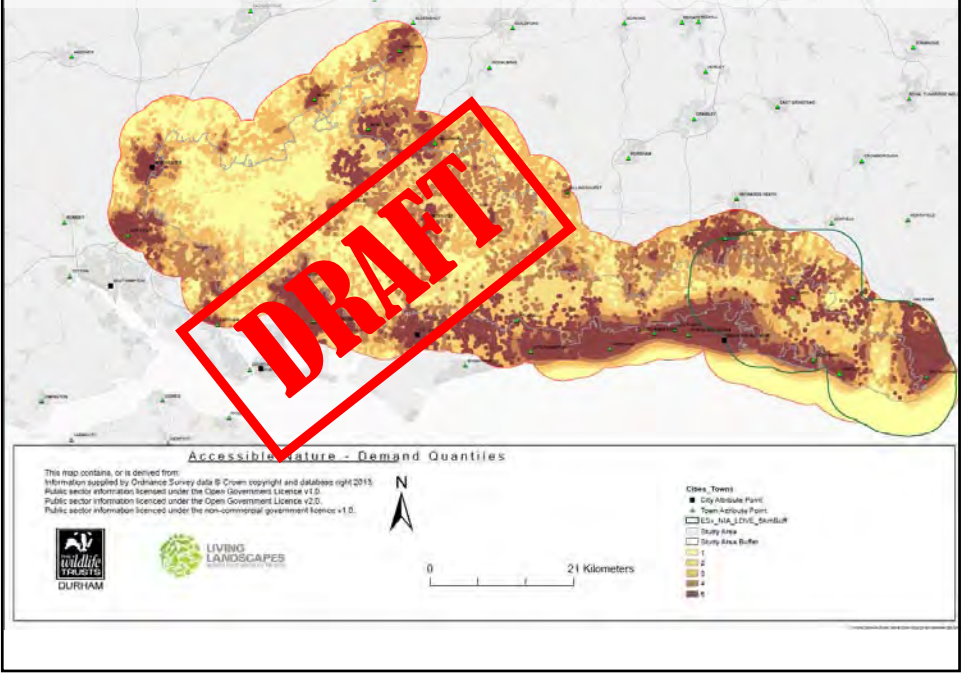
South Downs / NIA – Air Purification Service (Capacity)

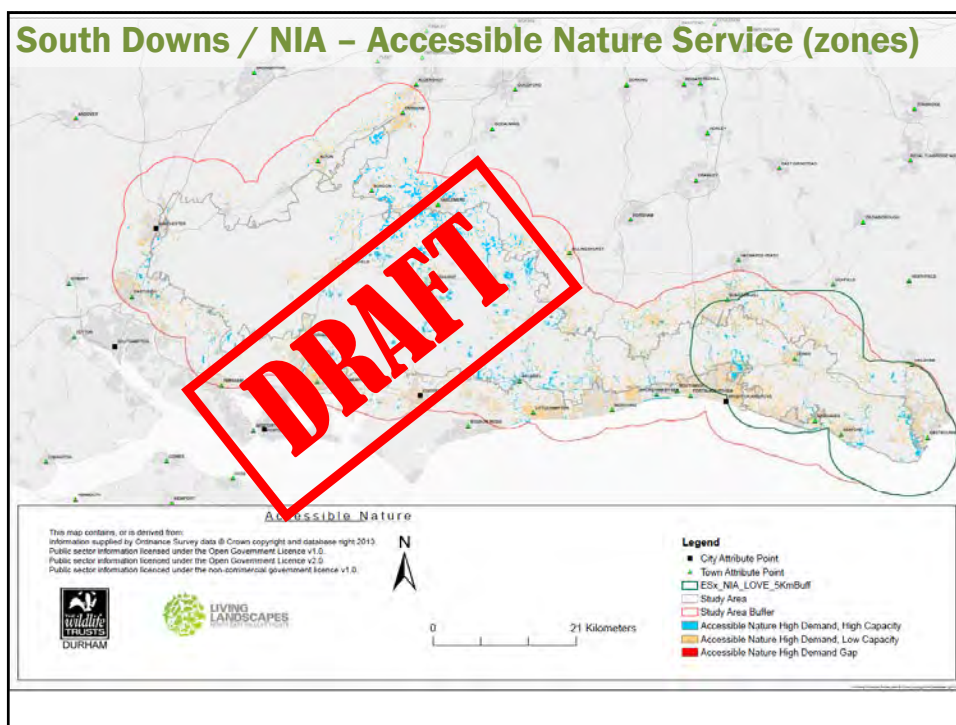
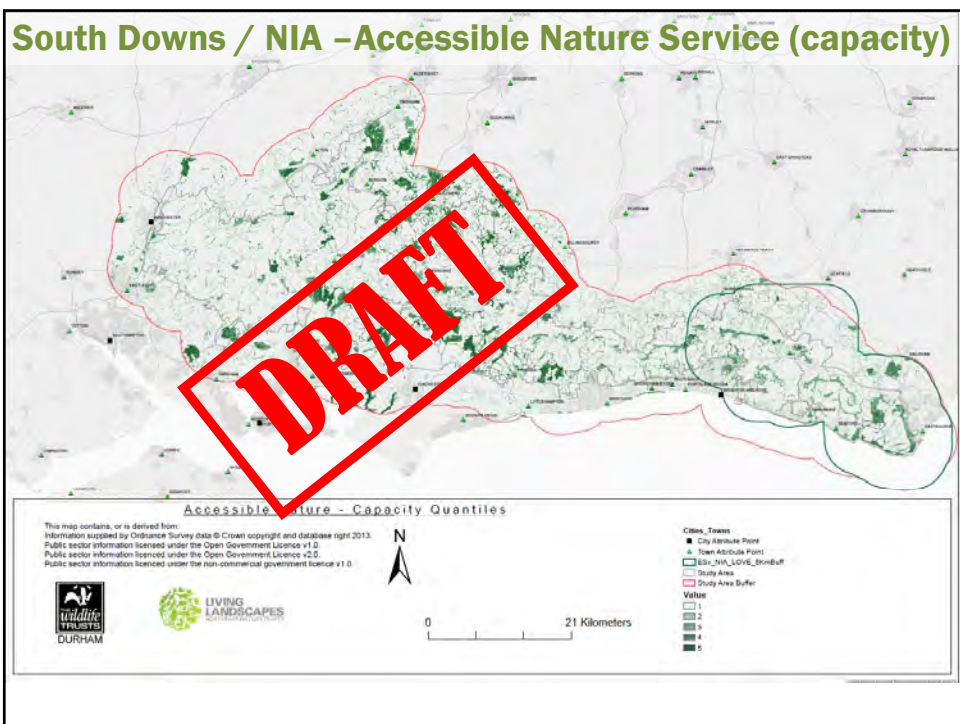


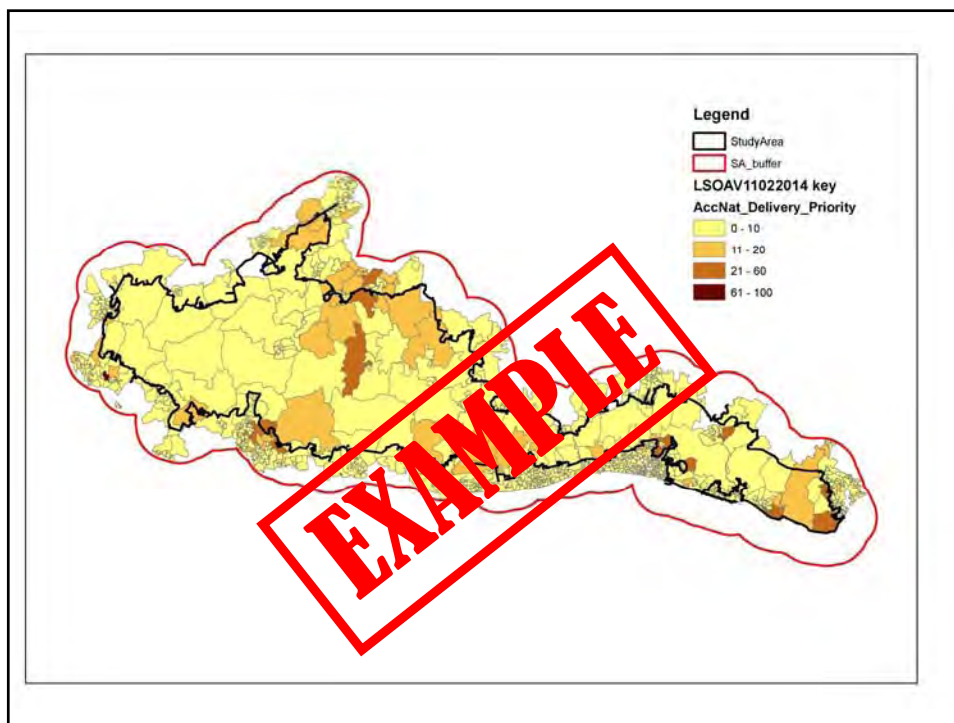
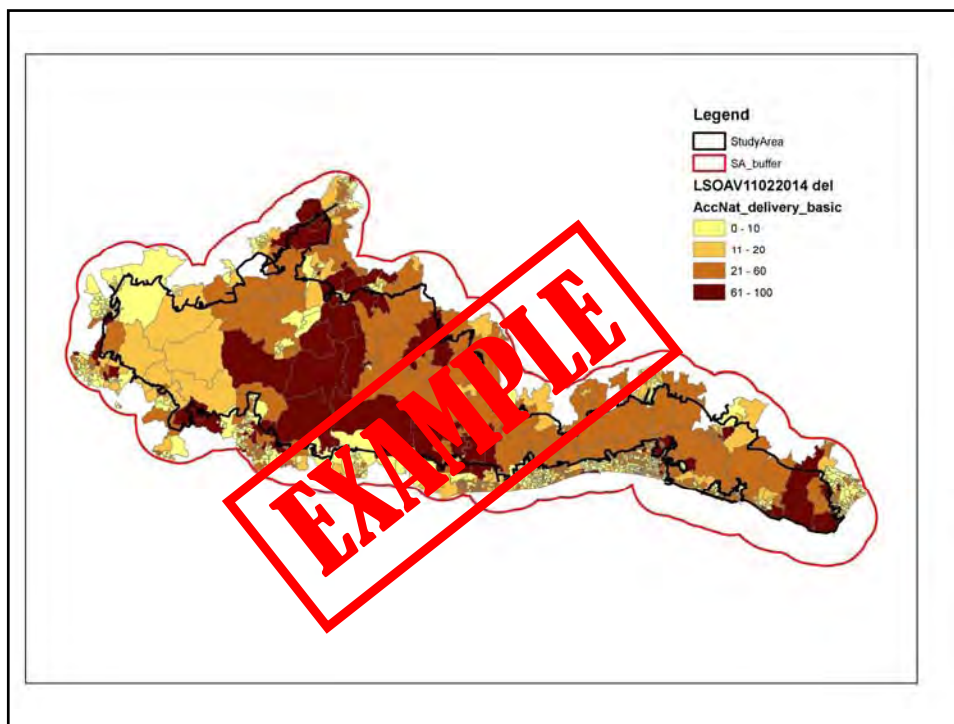
South Downs / NIA – Air Purification Service (zones)

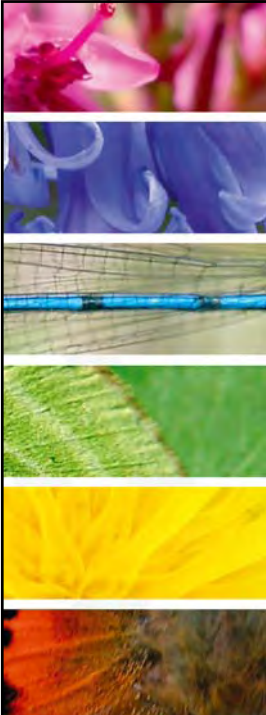


South Downs / NIA – Accessible Nature Service (demand)



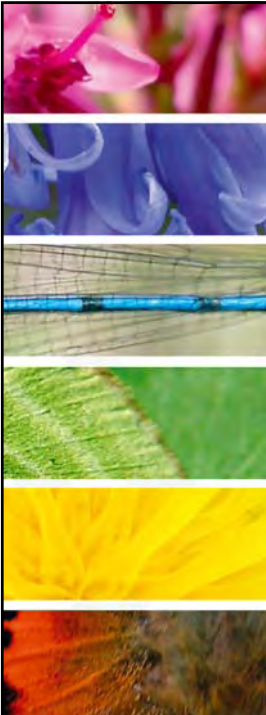






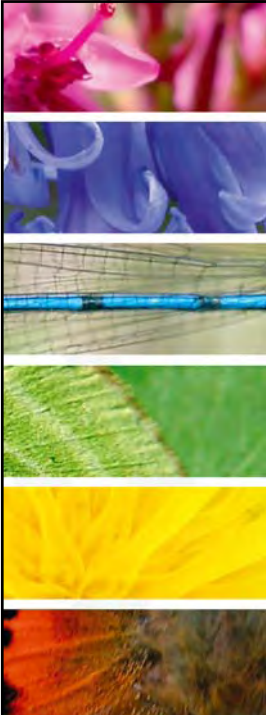
When will Sussex Maps be available?

- The Final Ecoserve Toolkit on the brink of release.
- We are preparing the data for the base map (takes approx. 7 days) with the best available Sussex data.
- Then we can run area maps!



What will EcoServ-GIS be used for?

- Shows where there is particular need for certain services
 - E.g. **water purification** – shows where extra wetlands, reedbeds, woodland would help
 - **Accessible nature** - shows where is need for more greenspace
- Shows where areas are already performing services well



Take home messages

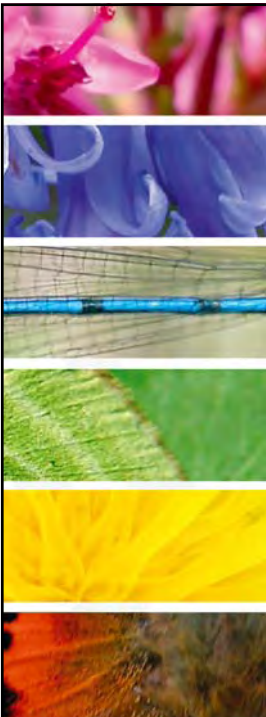
Clear desire for use of ecosystem service maps by local decisions makers , conservation staff and local communities

The science and methods to link data to each service is often not fully available, proxies and estimates have to be used.

Local / neighbourhood **scale** delivery is better represented than large scale mapping

Producing separate ES maps of both **Capacity and Demand** (need) is useful

ES maps are a very useful tool, but they must be **used carefully**, and together with local knowledge.....



We will be working closely with partners including the **Sussex Local Nature Partnership** to ensure that the outputs of Ecoserve are as widely available and as well understood as possible.

