

Ecosystem service mapping for major infrastructure: The case of HS2 in Buckinghamshire

Outline

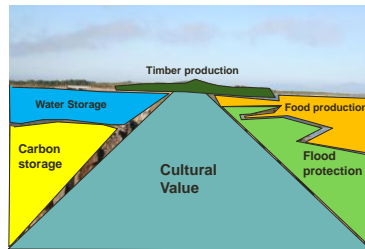
- The challenge: Assessment of large infrastructure projects
- Overview of High Speed 2
- Mapping of Ecosystem Services: data requirements and resources
- Benefits of assessment
- Lessons learned



Assessment of infrastructure projects: The traditional way



Assessment of infrastructure projects: The traditional way –Unrecognised values



High Speed 2



Assessment of potential impacts



	Area within 1km buffer (ha)	Directly through (km)
Ancient woodland	475.9	1.5km
Biodiversity Action Plan habitat	249.9	0.8
Site of Special Scientific Interest	295.5	0.80
Local Wildlife Site	441.6	2.9
Local Nature Reserve	73.6	0
Local Geological Site	10.6	0
Conservation area	297.8	2.0
Scheduled Ancient Monument	4.6	0.03
Registered Parks and Gardens	449.2	0.29
Open Access Land	54.9	0
Common Land	28.2	0
Village greens	0.7	0
Green Belt	4762.4	25.0
Protected Species Records within 1km buffer	750	
Number of different Protected Species within 1 km buffer	70	

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Ecosystem Services

Supporting Service	Provisioning Service	Regulating Service	Cultural Service
Primary production	Food	Water purification	Recreation
Water cycling	Natural medicines	Pollination	Education
Soil formation	Fresh water	Climate regulation	Religious values



Mapping Ecosystem Services

Data requirements

- Habitat map
- Environmental designations
- Open access land
- Soils
- Flood zones
- Heritage assets
- Agricultural land classifications
- Water courses

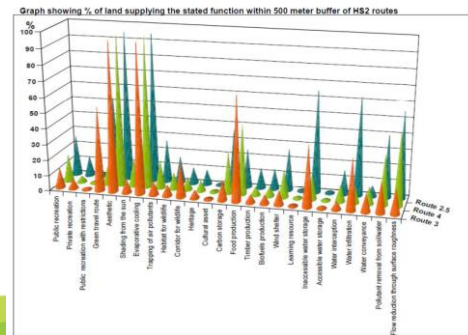


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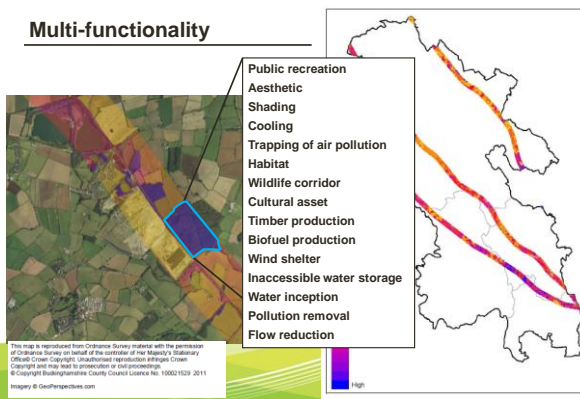
Mapping of functions and services



Route comparison



Multi-functionality



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Use of Ecosystem Service Mapping

- Assist in the identification of priority areas for mitigation
- Inform decisions about design to ensure ecosystem services are recreated or maintained
- Target off-setting in areas of low ecosystem service provision



Benefits of using the approach

- Assisted in initial decision making as to which route had least impact on the County
- Additional information to inform our negotiations and discussions with HS2
- Added 'weight' to arguments regarding individual parcels of land



Lessons learned

- Output only as good as your data!
- Perhaps more useful in assessing smaller schemes i.e. town extension
- Does add value –especially in terms of mitigation and off-setting targeting.

Thanks to Tom Butlin at The Mersey Forest for sharing his knowledge on their mapping method.

