

How can Space help this space?

- The future of urban and periurban green space

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April 2021



Sussex, UK from 123 km

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
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Google Earth

51°02'29.36" N 0°11'33.19" W elev 117 m eye alt 123.72 km

The Land

- Limited resource and one that is eroding although some is being created through, broadly speaking, volcanic activity
- Many uses required in terms of Sustainability: Food, Water, Shelter from human origins on and in modern times social and economic Infrastructure (Transport, IT, Health, Commerce, Industry) and then there are cultural and heritage aspects as well.
- Land per person on the planet is declining steadily – by 2050 if the population reaches 10bn then the amount of agricultural land per person will be about 0.3 ha
- The loss of soil is a major international concern – it has been a struggle to get this prioritised in the UK where land for housing and infrastructure is often the prime concern and even agriculture takes a second place.
- So, we should manage the land carefully and to do this we need information about the resource and how we approach and manage it.

The Value of the Land – People's perspective

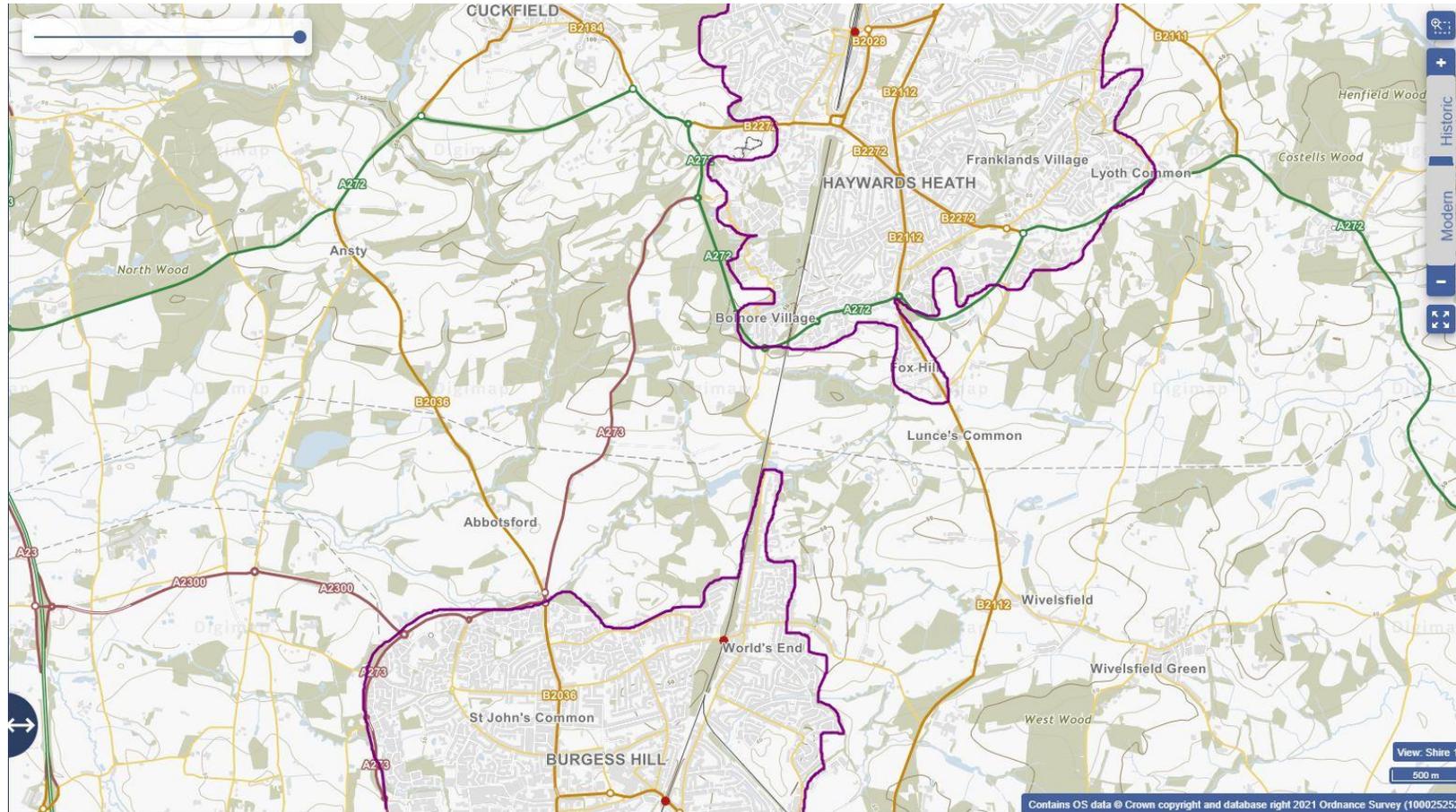
- Gardens, Coasts and Woods are regarded as the most valuable places (UK National Ecosystem Assessment 2011 and 2014)
- During the pandemic periods of lockdown have coincided with a sharp increase in the value people have attributed to green space of all kinds
- It has been shown in numerous studies that interaction with green space improves people's wellbeing and exercise in open spaces is beneficial
- House prices are higher in areas where there is more green space
- Once barriers to accessing green space are overcome people who don't normally use green and open spaces can benefit greatly from physical and cultural activity in green space.



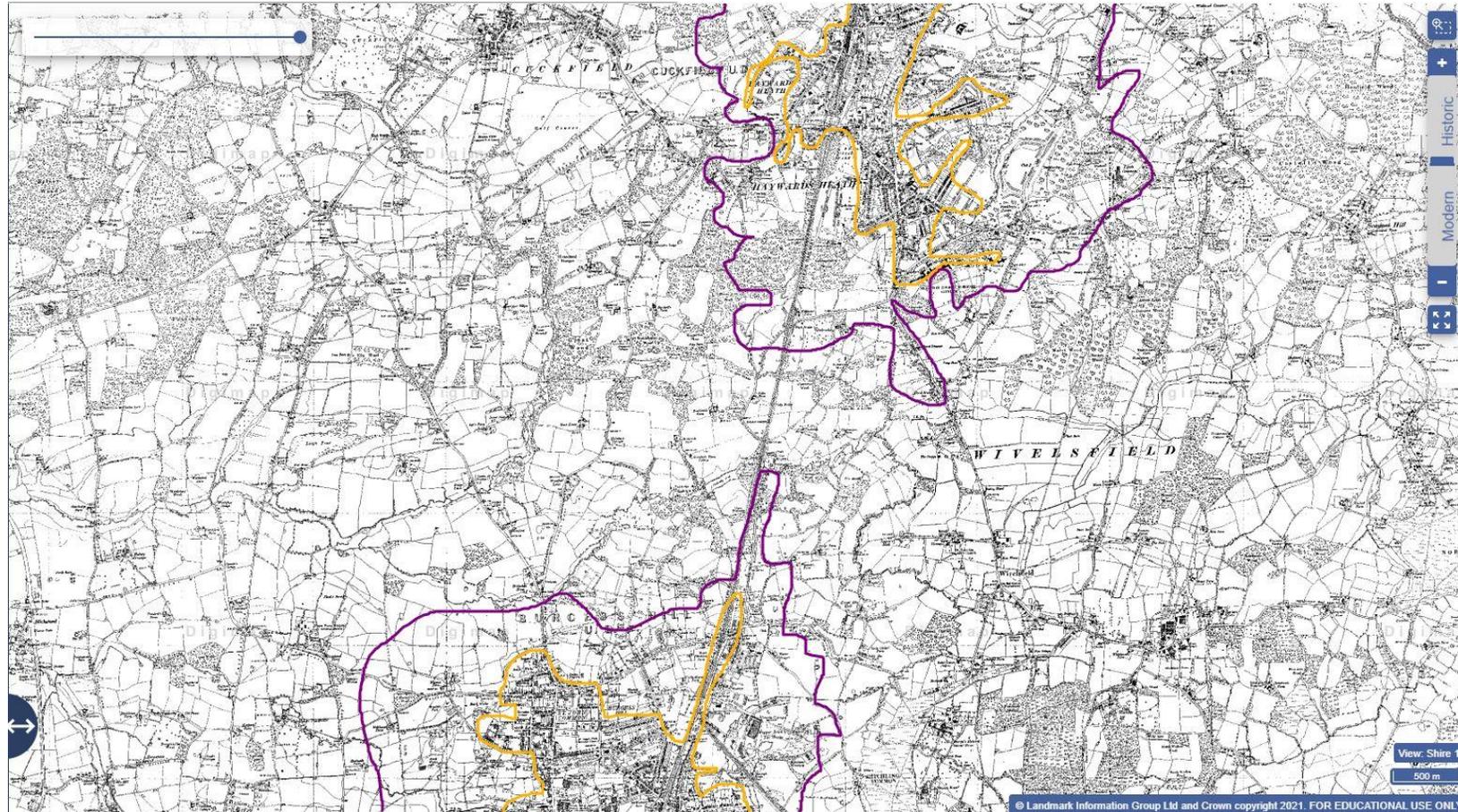
Knepp
← 2012 and 2020
↓



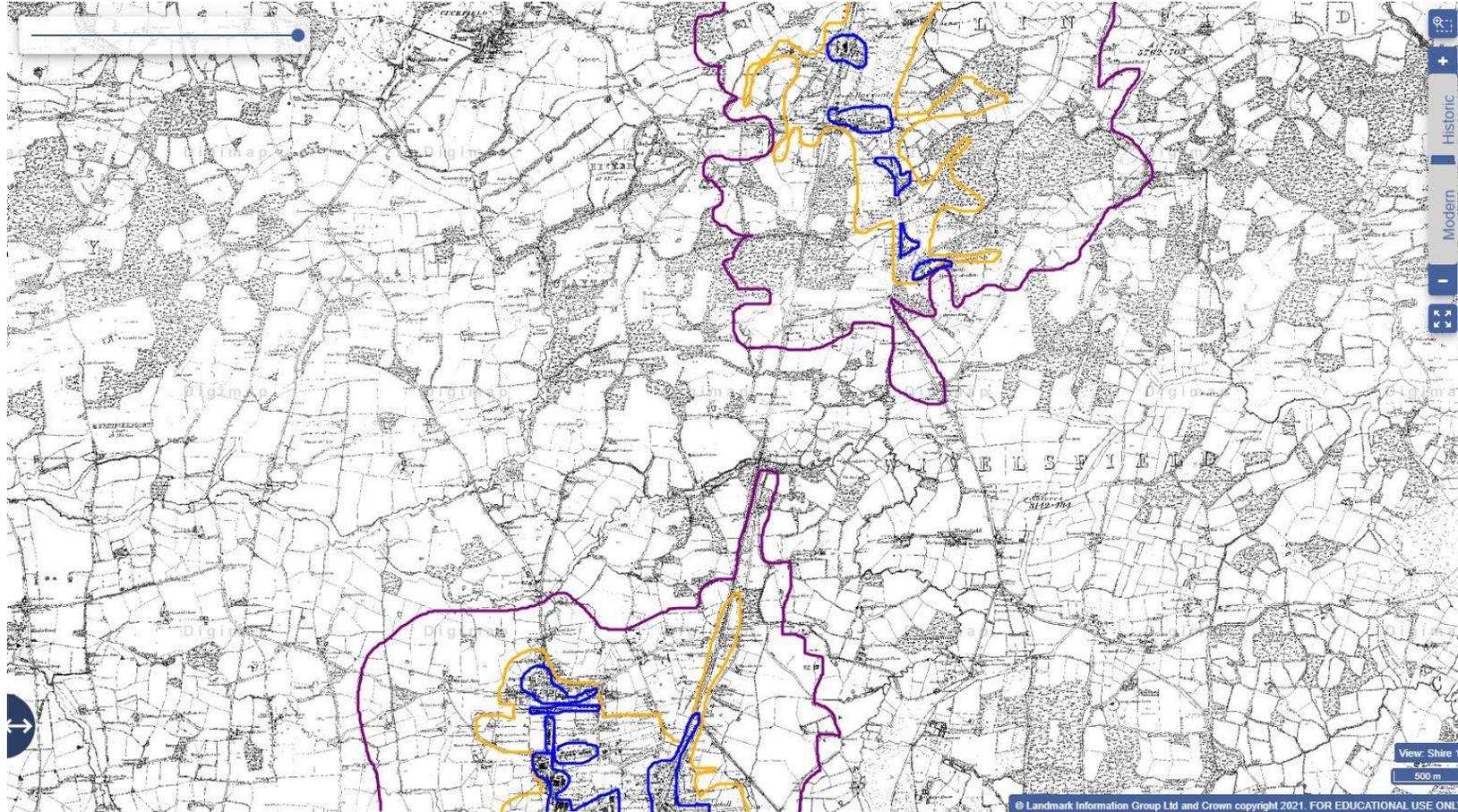
Burgess Hill and Haywards Heath “Contemporary”



.... 1930s



.... 1870s .. Substantial loss of green and open space used for food production, water and biodiversity



.... into the future,
about 2040

Billingshurst 2010 and likely
boundary by about 2040

Land gained by housing will
be known but what will have
been lost?

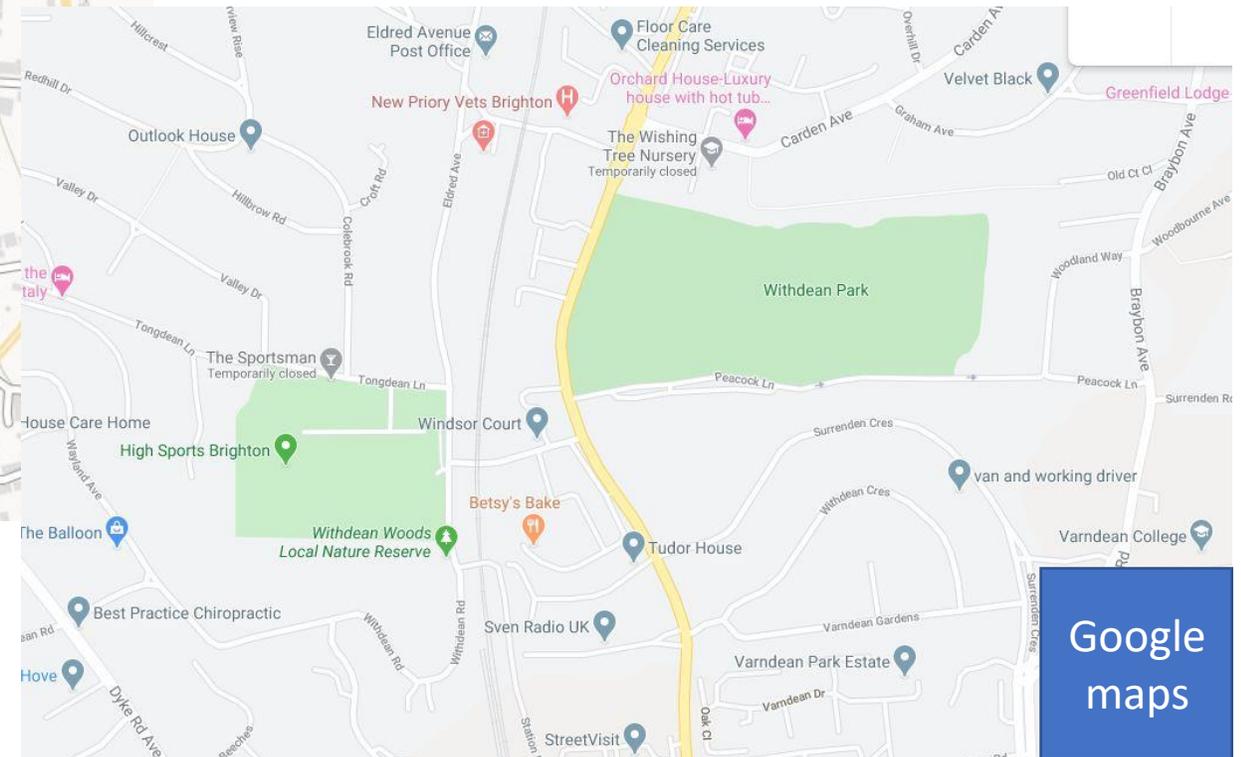


Internal
green
spaces?

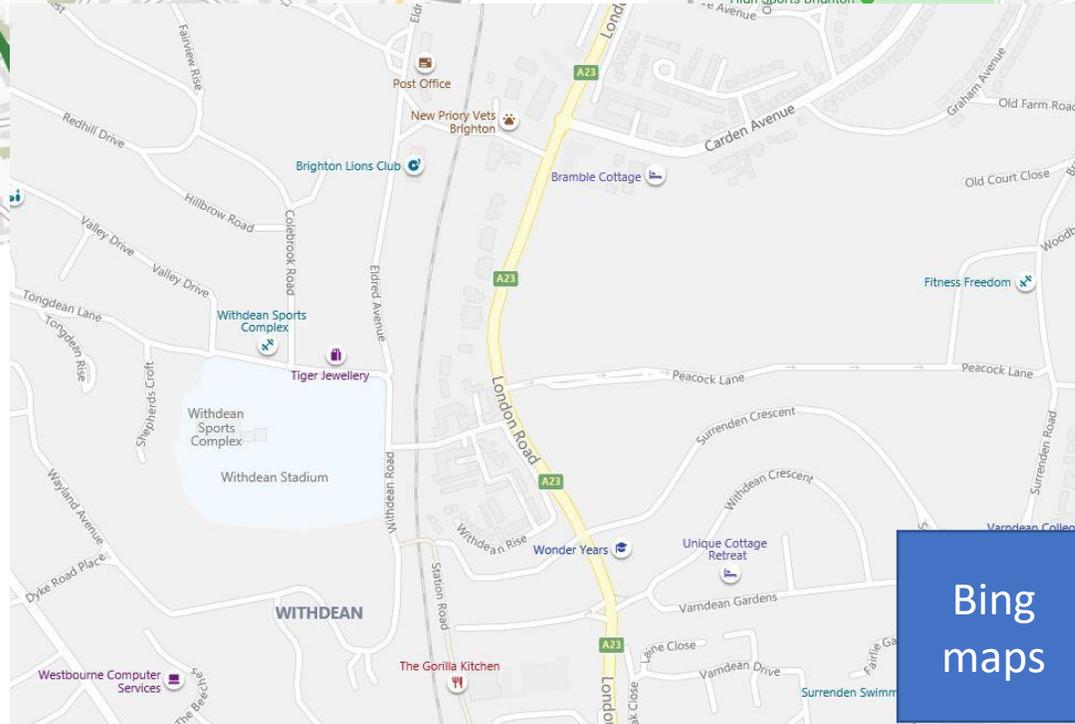
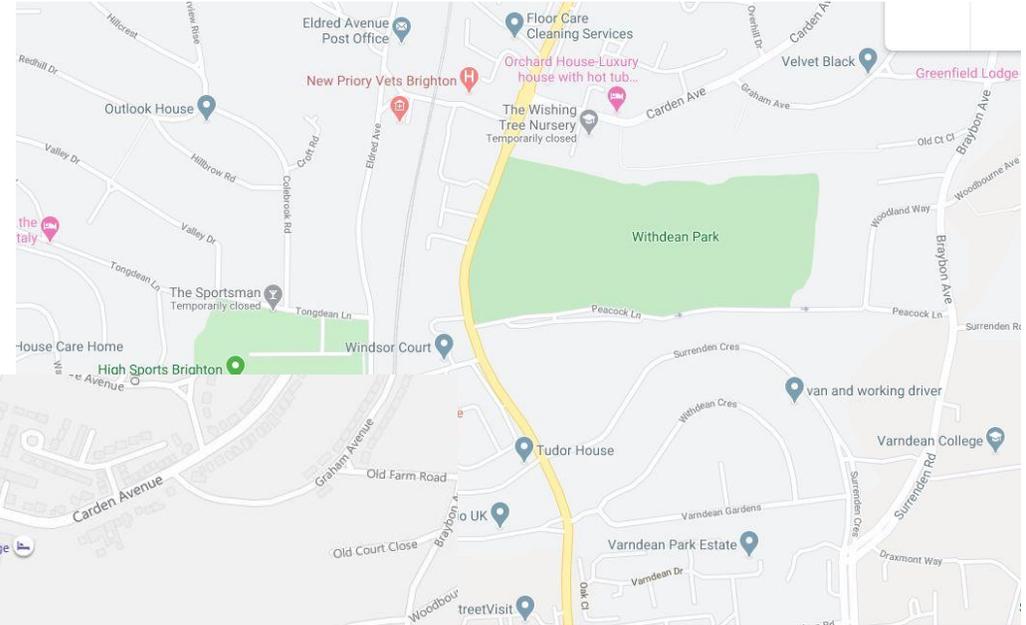
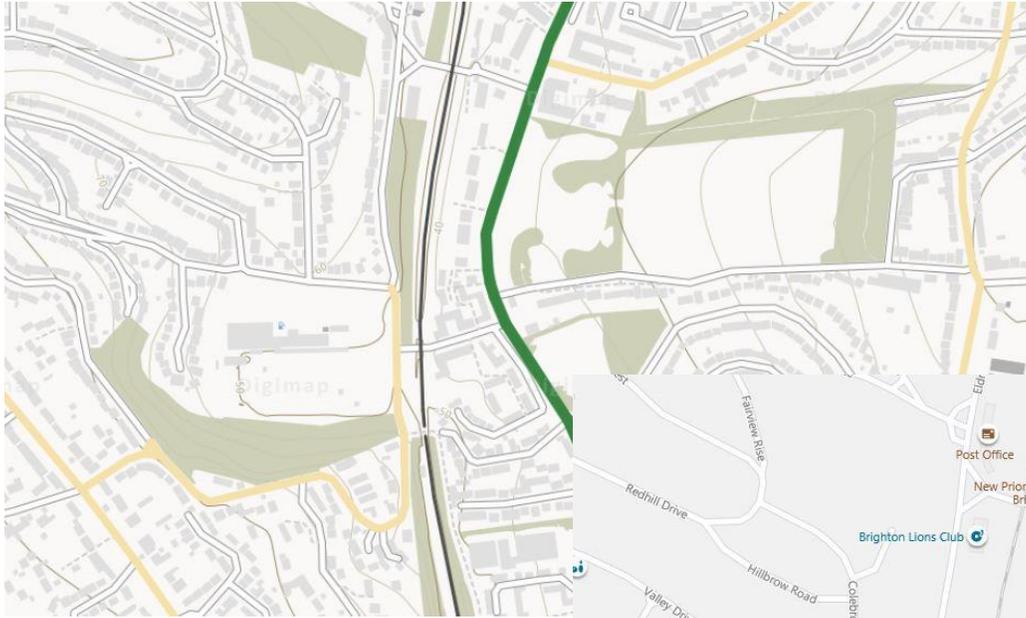
Don't Local Authorities map all this?



Inconsistent even for contemporary representations



Inconsistent even for contemporary representations



Bing
maps

Withdean in Brighton and Hove





Newhaven





Green and Open Space: Purposes

- Rate of change of land use at as scale suitable to make decisions relevant to health and wellbeing, land use, food and water
- Key land uses: Food, water (including all types of flooding), biodiversity, carbon and nitrogen (etc) storage, housing, infrastructure
- Information could be a common resource for all stakeholders
- Issues:
 - Resolution required – features of interest may be only 1m across
 - Privacy
 - Integration with other data
 - Visualisation
 - Contribution to decision-making

Potential Stakeholders

- Government for strategic planning (recent White paper proposes just three zones of land)
- Local authorities for Local Plans and development planning decisions
- Developers and Engineering consultancies
- Local communities
- Charities such as the Woodland Trust, CPRE
- Activists such as XR or South East Climate Alliance
- Land managers

More scoping needed

- Knowledge exchange and technical aspects need further consideration
- 5K available for a small project

What Space-based/AI systems could tackle this world-wide issue?

Has it already been done?

Why not if not?