



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Applied geoscience for our
changing Earth

BGS Data and Smartphone Applications

by Clive Cartwright



An introduction.

- 1. About British Geological Survey**
- 2. BGS data and information products**
- 3. BGS information delivery**
- 4. iGeology**
- 5. In the first year**
- 6. Work in progress**
- 7. The future**

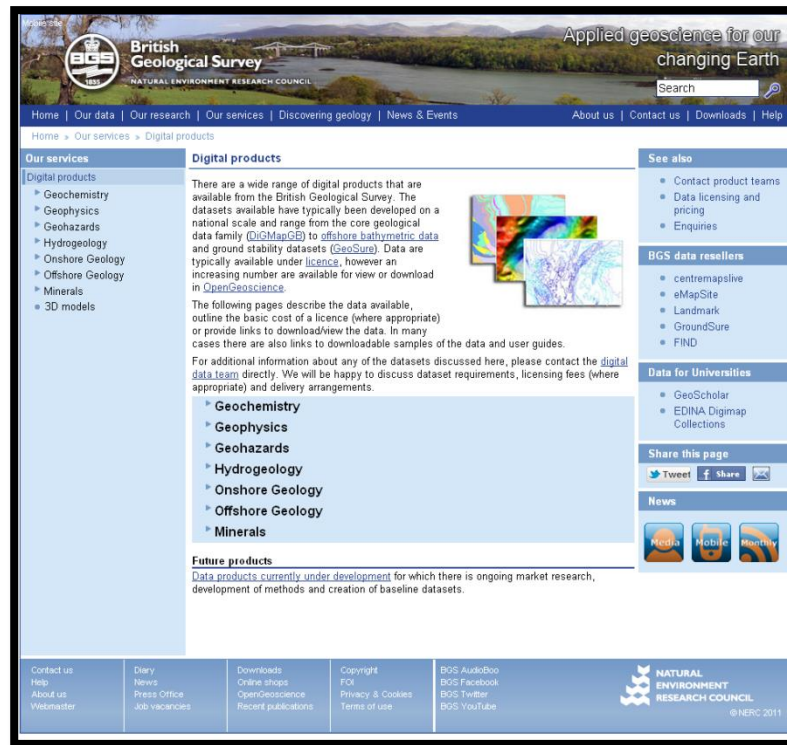


About British Geological Survey

- Founded in 1835 – 176 years old this year.
- World's oldest national geological survey.
- As a public sector organisation BGS is responsible for advising the UK government on all aspects of geoscience as well as providing impartial geological advice to industry, academia and the public.
- The BGS holds a comprehensive collection of geological and environmental information which is available to the industry, academia and the public.



BGS data and information products



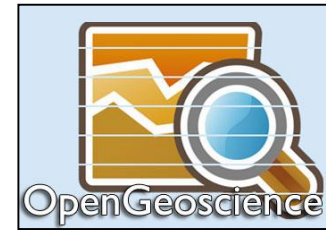
<http://www.bgs.ac.uk/products/home.html>

BGS information delivery

- Rapidly developing web and communication technologies are making geospatial data more accessible to a new generation of environmentally aware users.
- Last 15-20 years have seen a transition from paper to digital mapping and databases.
- Data producers like the BGS now deliver materials largely in digital form.

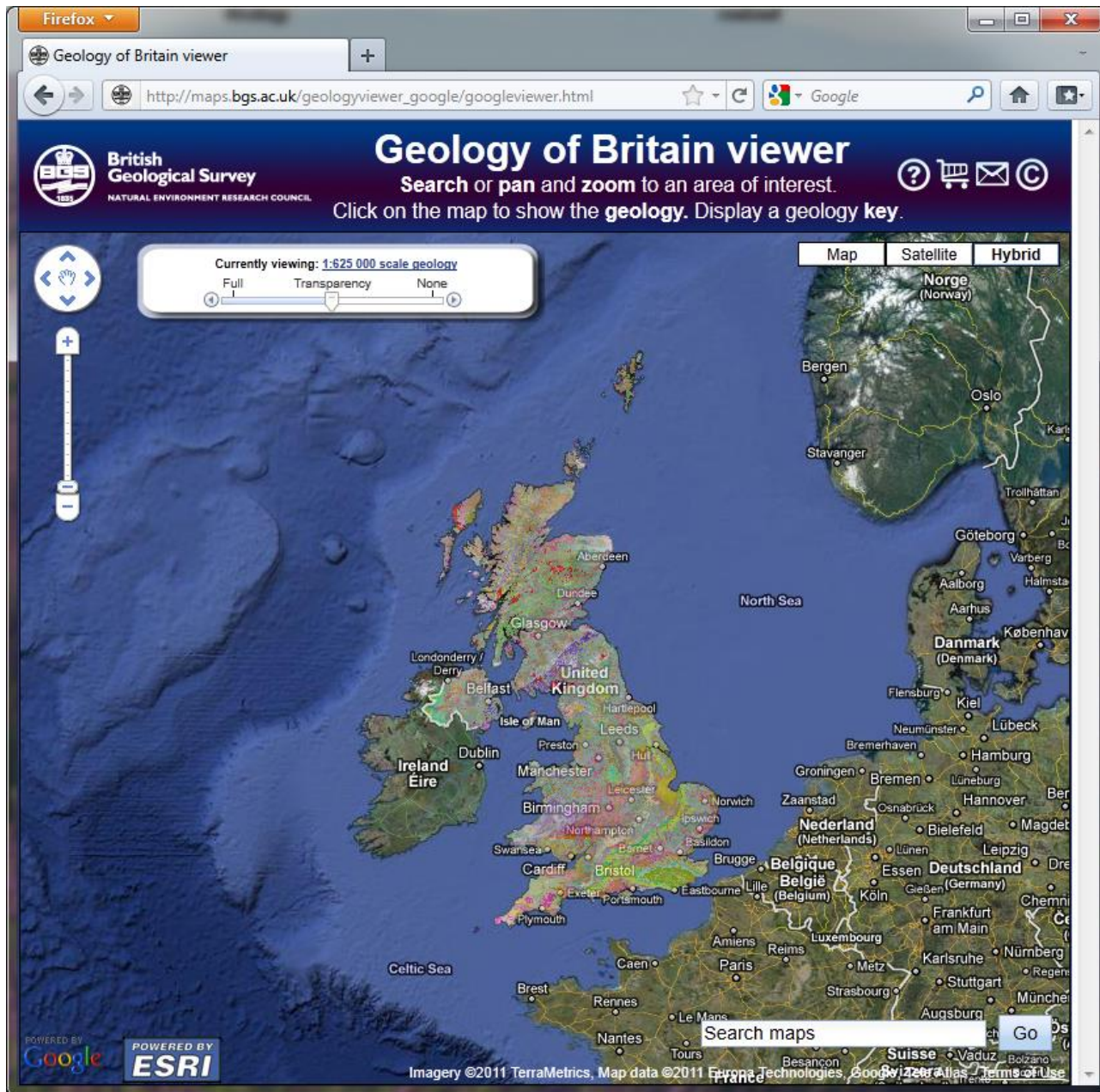


OpenGeoscience Initiative



- **An open-access web portal** providing **FREE** geological information for: research, education, personal and restricted commercial uses helping to promote innovation.
- **Available resources include:**
 - Geological maps for the whole of Great Britain at various scales.
 - > 50,000 geological images.
 - Access to databases, metadata, search tools *etc.*
 - Open research archive (papers and reports)
 - Software.
 - Educational resources.





iGeology



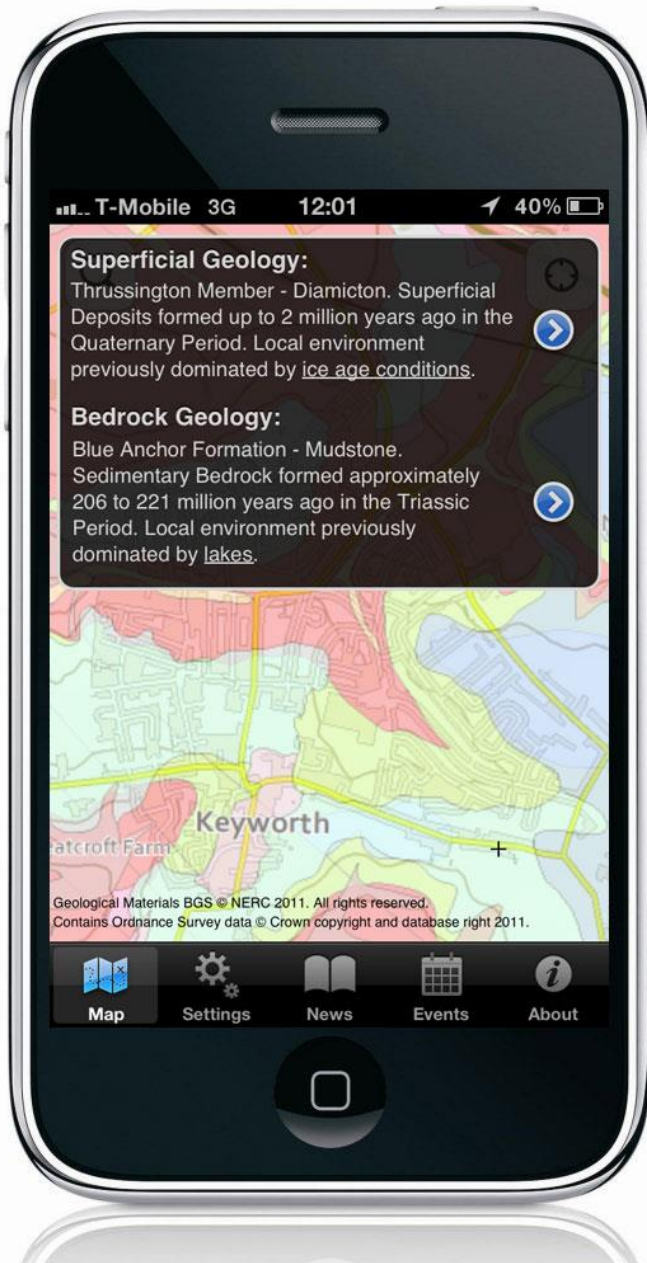
The iPhone and Android App is FREE.

Allows access to the equivalent of over 500 geology maps.

iGeology for the iPhone is developed and maintained in-house.

Android version originally outsourced, but now maintained in-house.

Driven by interoperable web services to provide a self service, web-based delivery mechanism.





BGS Databases:

- Boreholes
- 3D Models
- Unit Definitions

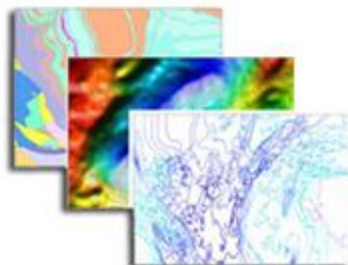
Client Software:

Home Computer
or your Smartphone



Web Service and
Web Map Server Requests

Request



Map Data:

- Geology Polygons

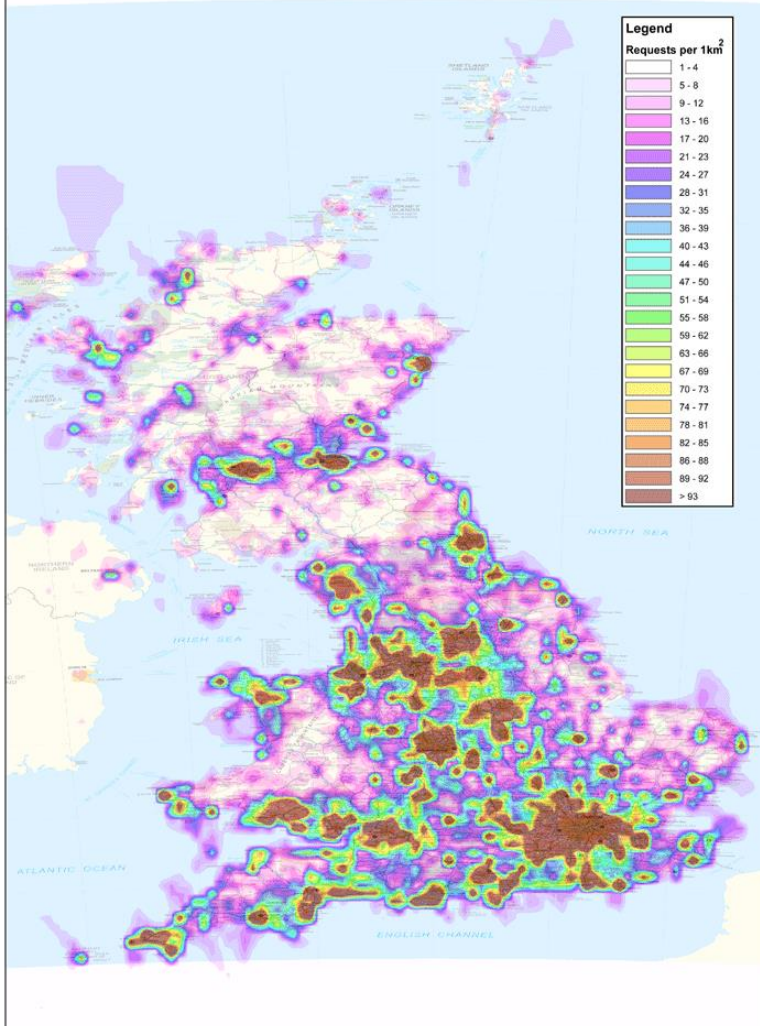
In the first year.



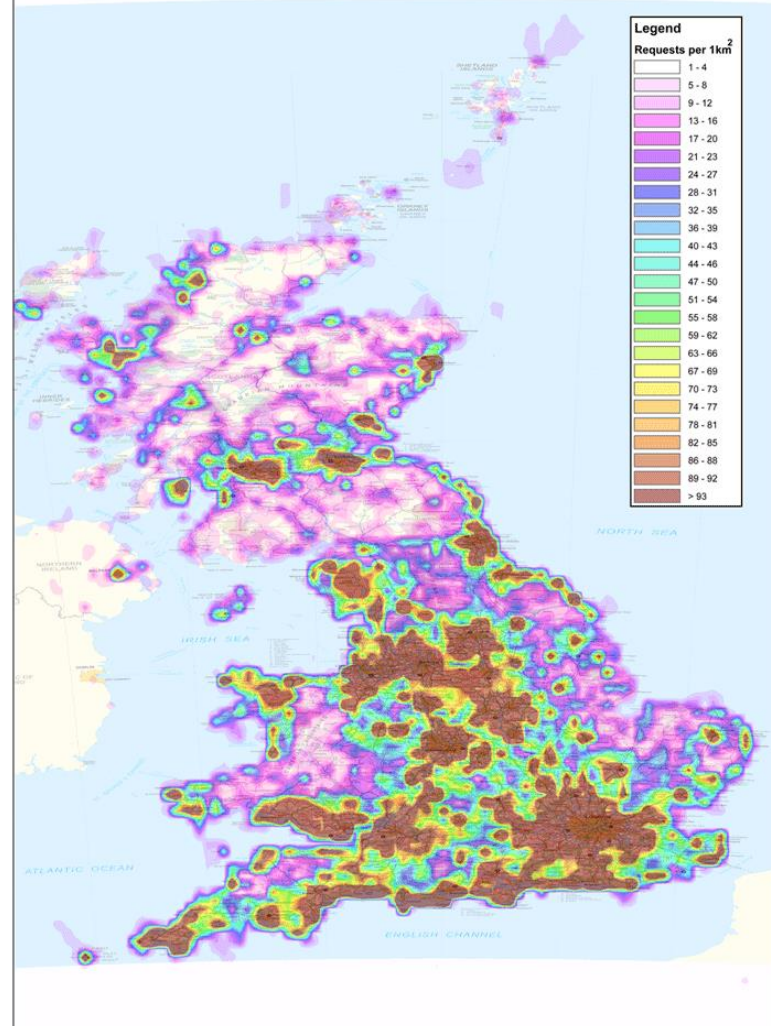
- 80,000 Downloads for iPhone.
- 11,500 Downloads for Android.
- Downloaded in over 62 countries.
- 18 Million Map Requests.
- 82% of daily users are iPhone.
- 18% of daily users are Android.

What are people looking at...?

iGeology: 1:50k Map Requests (June 2011)



iGeology: 1:50k Map Requests (November 2011)



iGeology – Reviews and Awards ★★★★★

Now being used routinely by researchers and consultants:

- *‘I use this all the time on surveys and site visits. It’s a copy of the maps I used to buy in the past.’*
- *‘Invaluable for those working in the environmental consultancy sector.’*
- *‘Brilliant stuff: snappy intuitive interface, interesting data, and free.’*
- ESRI International 1st place Community Favorite winner for – ***Best Mobile App!***
- AGI Innovation & Best Practice – ***Highly commended***
- ESRI (UK) Innovation in Central Government– ***Highly commended***



Work in Progress...

iGeology Lite (2.0)

- More intelligible descriptions
- Ability to view historical geology maps

iGeology Professional (Commercial Product)

- View approx. 2 million borehole records
- 3D Models - drill virtual boreholes and sections
- Separate geology layers
- View coal seams, faults and other geological line work
- Local map caching for offline use



BGS and CEH – Soil App



**Centre for
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL

- Same look and feel as iGeology
- Using dataset from both Centres

Focused on soil properties:

- Soil Texture
- Soil pH
- Topsoil Thickness
- Parent Material
- Carbon
- Nitrogen
- Landcover

The topsoil layer in this area is generally deep and is derived from the underlying Glacial sand and gravel. The surrounding area is usually associated with unimproved grassland.

Soils around this location have a light to medium texture, they are typically acidic with an estimated pH for this area of 6. Models of nutrient content indicate:

Nitrogen is : 5.5%

Phosphorous is : 3.2%

Carbon is : 2.0%

Carbon is : 2.0%

Phosphorous is : 3.2%

Nitrogen is : 5.5%

indicate:



iGeology 3D – Augmented Reality



Questions?

