

HENRY HOLBROOK & HELEN BURKE

BGS Data Products in Digimap



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BGS DATA PRODUCTS IN DIGIMAP

Who we are



Helen Burke



- Survey geologist/3D modeller
- Products champion for BGS Geology & Engineering

Henry Holbrook



- Data sharing manager
- British Cartographic Society Council member



BRITISH GEOLOGICAL SURVEY — STRATEGY 2023 TO 2028

Understanding our Earth



The BGS

We provide impartial and independent geoscientific advice to the public, industry, government and academia

We use our knowledge of geology to address societal challenges

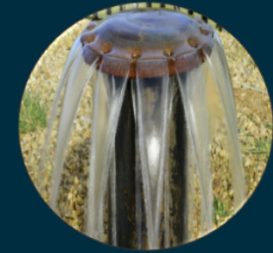
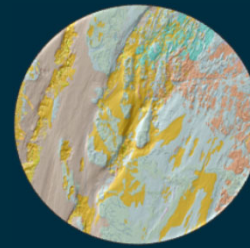
We work at local, regional, national, and global scales, and monitor at multiple temporal scales, from real-time to multi-decadal.



BGS Strategy 2023-2028

Four key science areas:

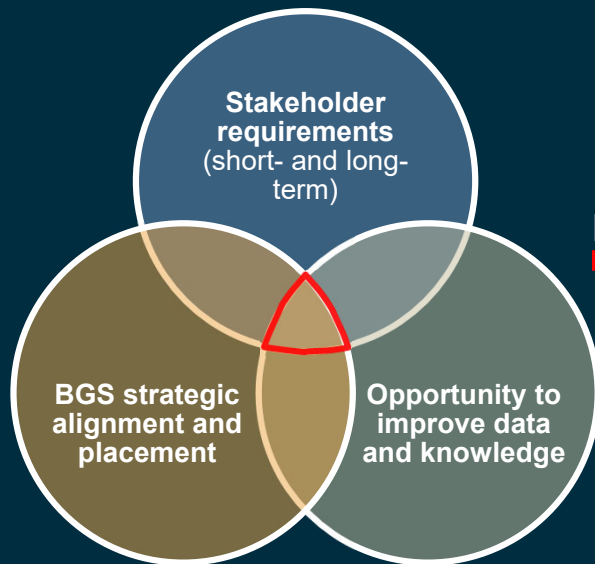
- Maps & Models for the 21st Century
- More Secure Energy Transition
- Improved Water Security
- Living With Geological Hazards



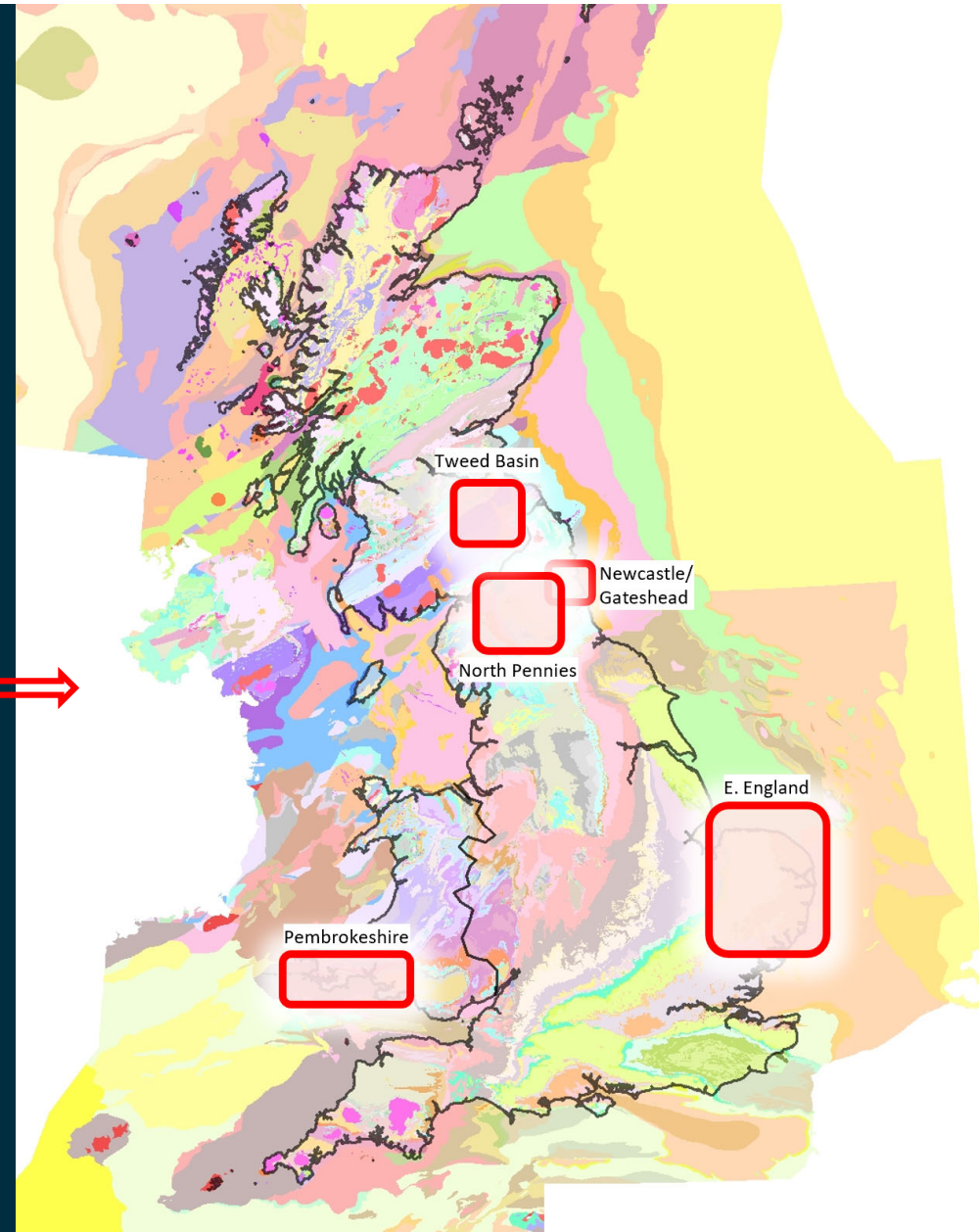
- New programme of 2D and 3D geological surveys
- Delivery of data, analysis and knowledge to support decarbonisation projects
- Analysis & understanding of groundwater resources
- Mapping & monitoring earth hazards e.g. landslides, earthquakes, flooding

MM21C: technical programme development

- Outcome from engagement and consultation:
“everywhere, everywhere, and straightaway”



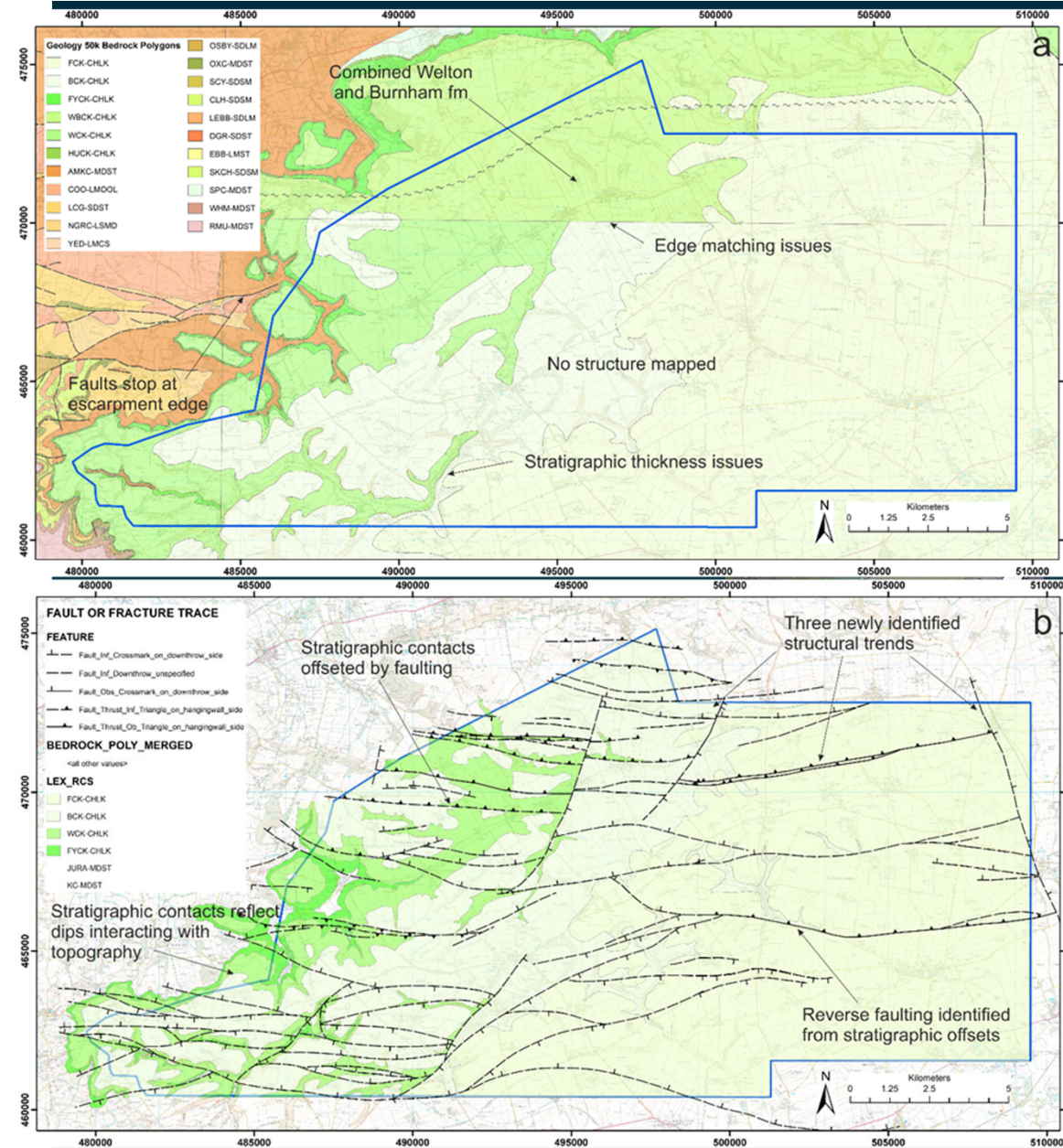
Initial priorities



- Detailed external stakeholder engagement ongoing, scoping phase concluded end-September

How we update geological maps

- Pre appraisal of existing mapping
 - terrain model
 - aerial imagery
 - seismic data... etc...
- Walk over survey
 - breaks of slope
 - auger holes
 - structural measurements...etc





BGS DATA PRODUCTS IN DIGIMAP

BGS data in Digimap

Geology data

BGS Geology

625k (1:625 000 scale)
250k (1:250 000 scale)
50k (1:50 000 scale)
25k (1:25 000 scale)
10k (1:10 000 scale)

BGS Marine Geology

(1:250 000 scale Offshore)

Geological Indicators of Flooding

(1:50 000 scale)

Hydrogeology

(1:625,000 scale)

Soil Parent Material

(1:50 000 scale)

Permeability

(1:50 000 scale)

Radon Potential

(1:50 000 scale)

**Download only – not
currently in Geology
Digimap**

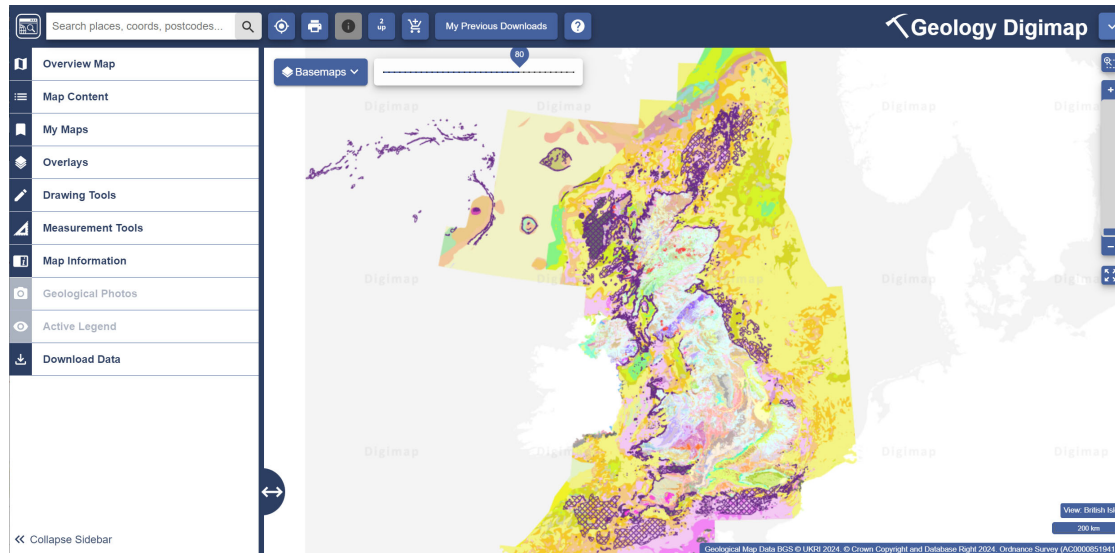
- **Superficial Deposits Thickness Model**
(1:50 000 scale)
- **GeoCoast**
(1:50 000 scale)
- **Onshore Boreholes Index (SOBI)**
- **Lexicon of Named Rock Units**



BGS DATA PRODUCTS IN DIGIMAP

Baseline geology

BGS Geology 625k



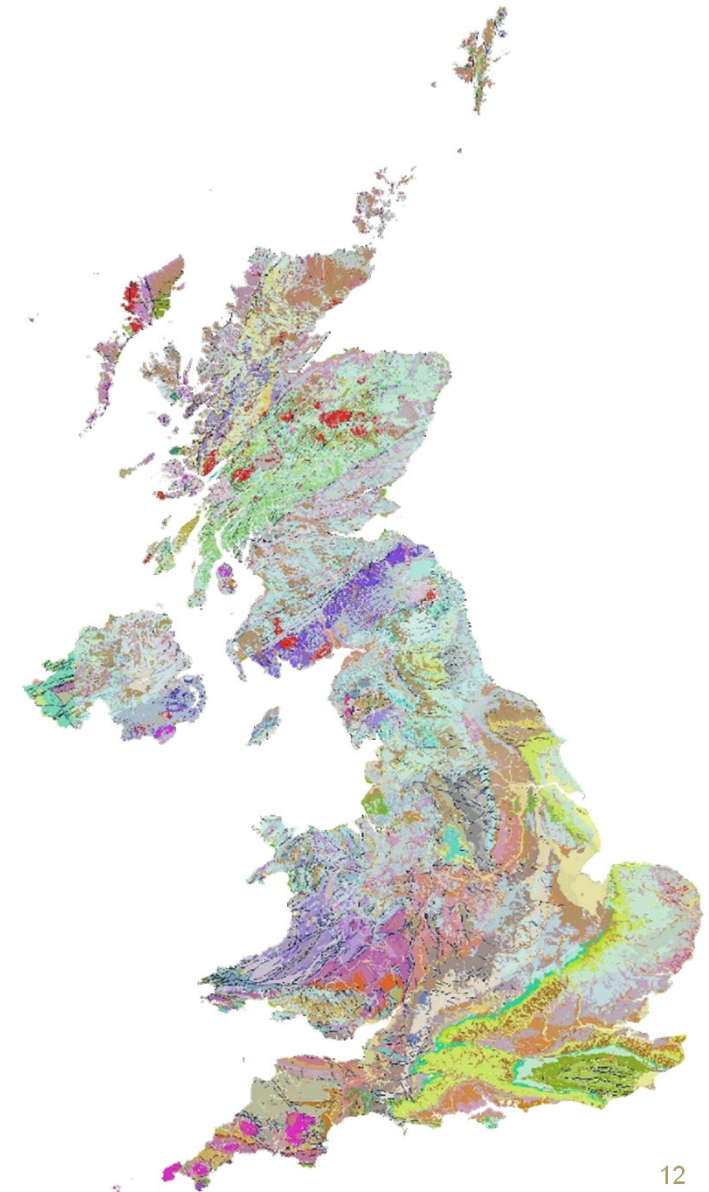
Version 5

- UK Bedrock
- UK Linear features

Version 3

- UK Superficials

bgs.ac.uk/datasets/bgs-geology-625k-digmapgb

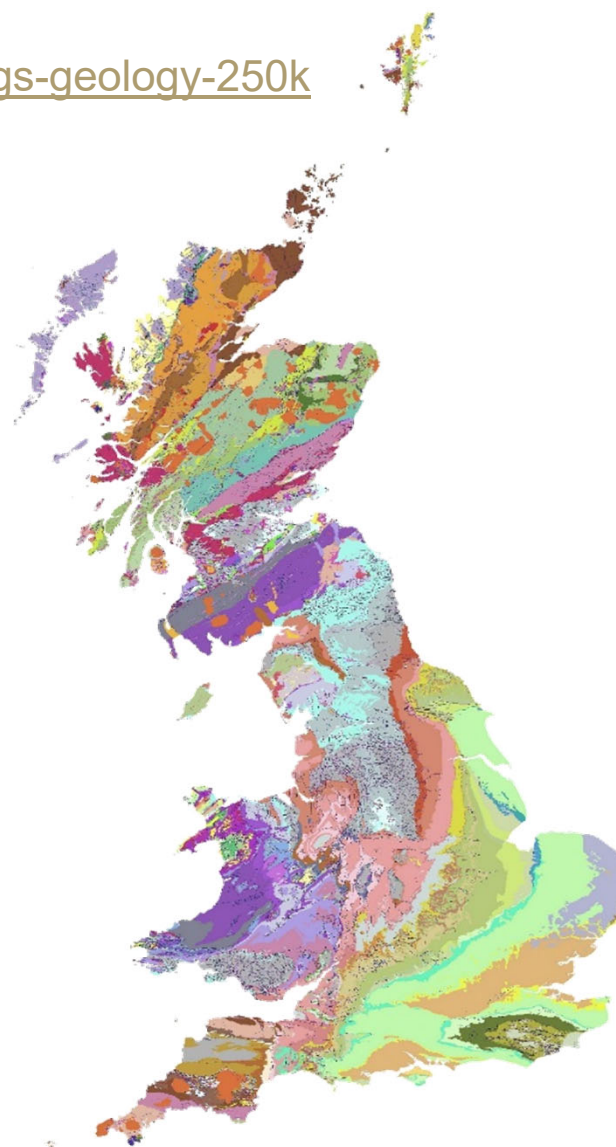
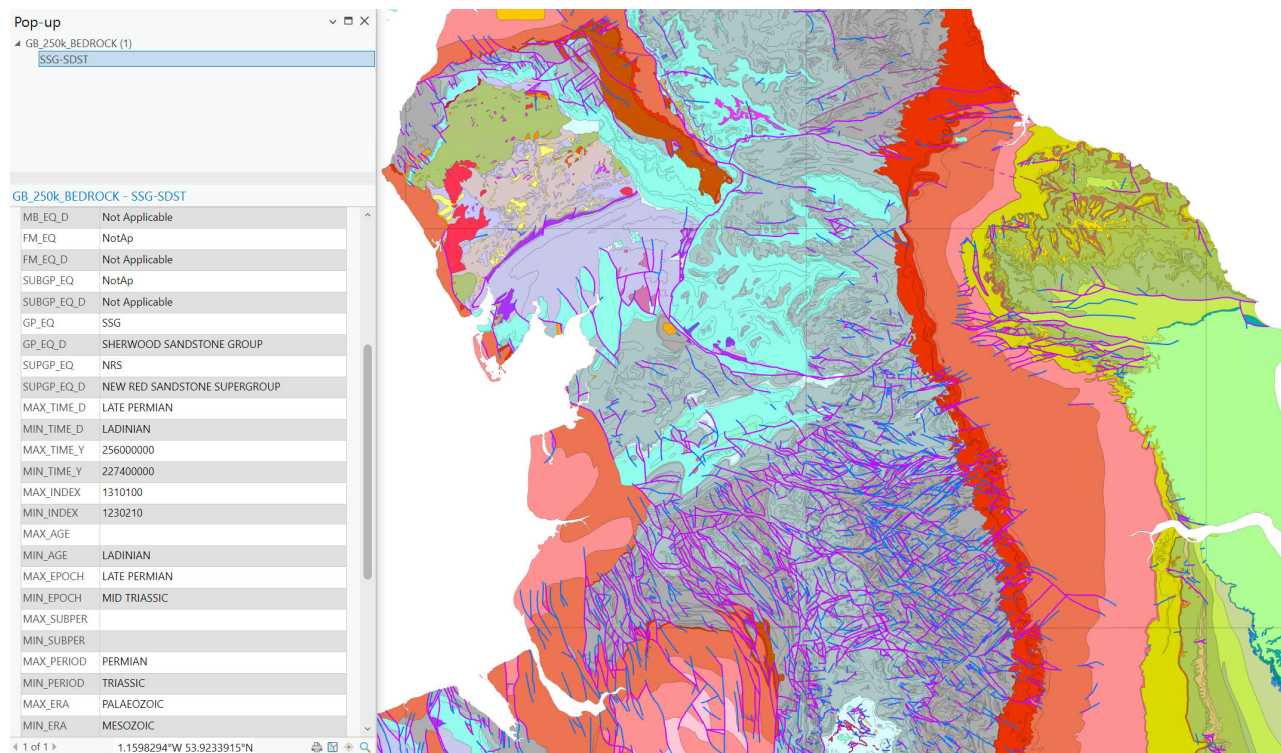


BGS Geology 250k

bgs.ac.uk/datasets/bgs-geology-250k

Version 4 (2004)

- Bedrock
- Linear features

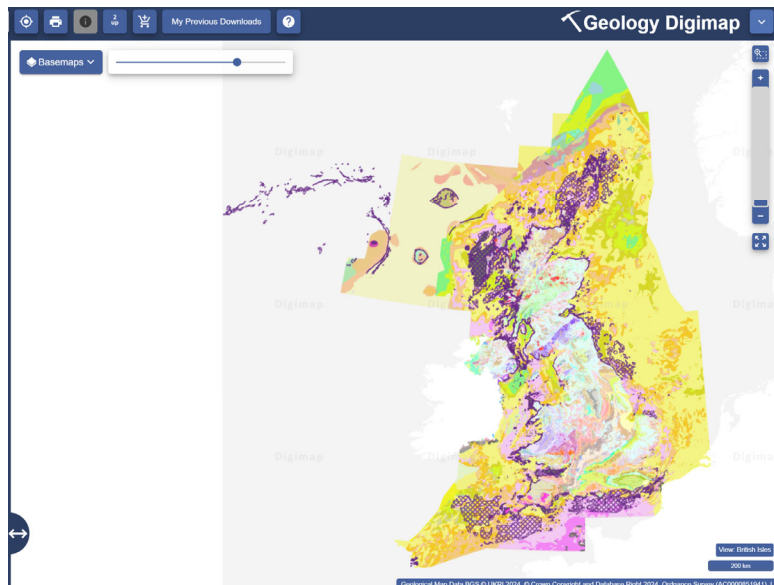


BGS Marine Geology

- Marine bedrock
- Sea-bed sediment
- Hard substrates

bgs.ac.uk/datasets/marine-bedrock-250k

bgs.ac.uk/datasets/marine-sediments-250k



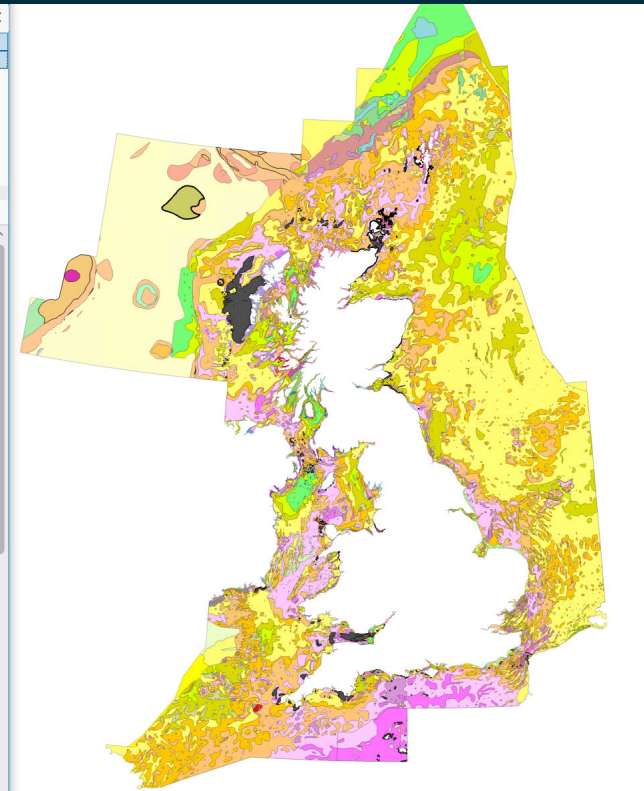
Pop-up

BGS_250k_SeaBedSediments_WGS84_v3_FOLK (1)

BGS_250k_SeaBedSediments_WGS84_v3_FOLK -

FID	7886
LEX	MSQH
LEX_D	MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED)
LEX_RCS	MSQH-SND
RCS	SND
RCS_X	SND
RCS_D	SAND (SEA BED SEDIMENT, BASED ON FOLK)
RANK	
MAX_TIME_D	HOLOCENE
MIN_TIME_D	HOLOCENE
MAX_TIME_Y	10000
MIN_TIME_Y	0
MAX_INDEX	1110199
MIN_INDEX	1110199
MAX_AGE	
MIN_AGE	
MAX_EPOCH	HOLOCENE
MIN_EPOCH	HOLOCENE
MAX_SUBPER	
MIN_SUBPER	
MAX_PERIOD	QUATERNARY
MIN_PERIOD	QUATERNARY
MAX_ERA	CAINOZOIC
MIN_ERA	CAINOZOIC

1 of 1 | 1.1953383°E 56.3644386°N



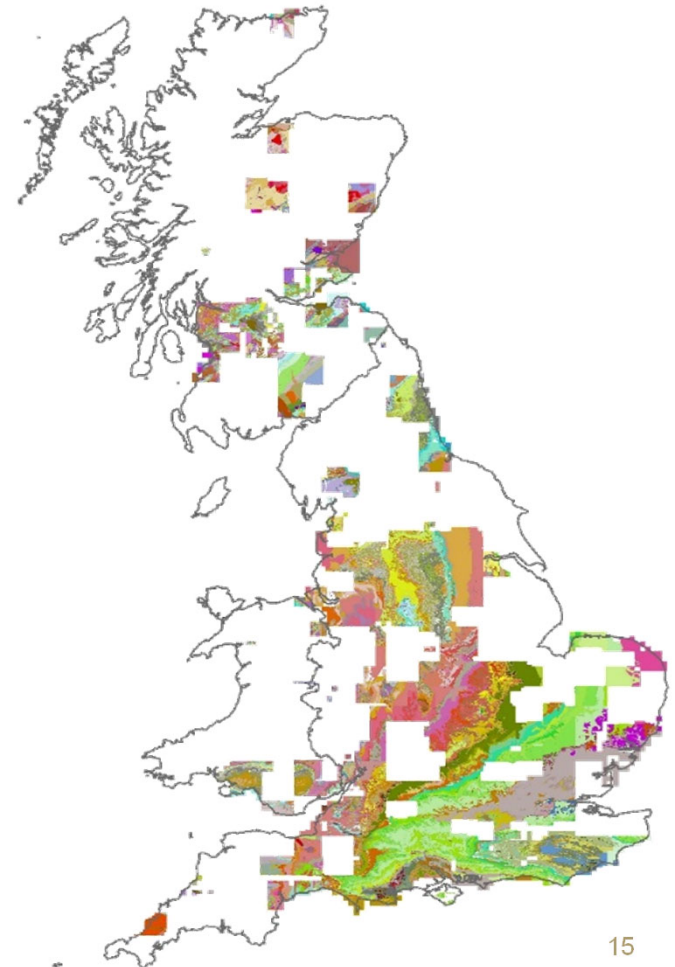
BGS Geology 50k

Version 8 (2017)



BGS Geology 10k

Version 2



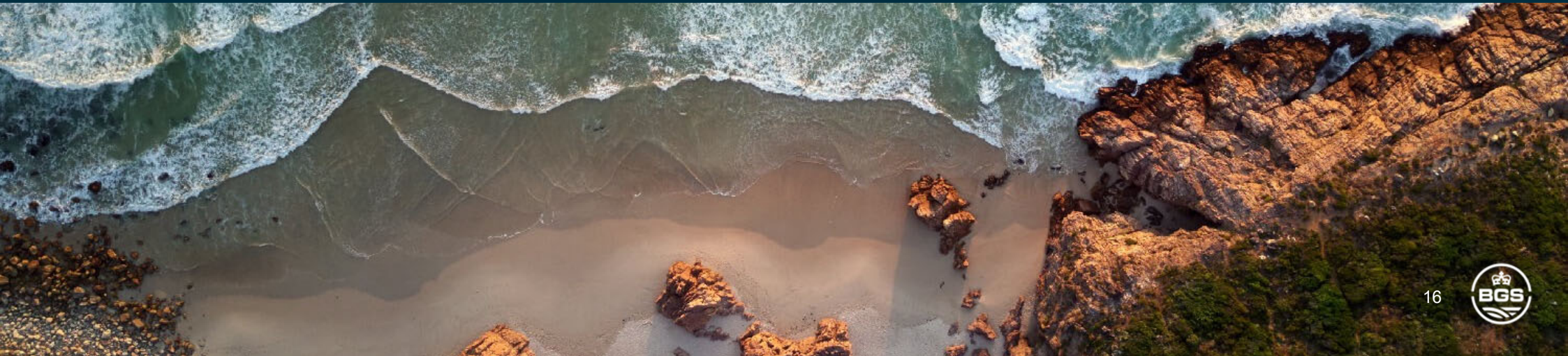
- Bedrock
- Superfcials
- Linear features
- Artificial materials
- Mass Movement

bgs.ac.uk/datasets/bgs-geology-50k-digmapgb

<https://www.bgs.ac.uk/datasets/bgs-geology-10k/>

BGS DATA PRODUCTS IN DIGIMAP

Viewing and accessing BGS data via Digimap



Overview Map

Map Content

My Maps

Overlays

Drawing Tools

Measurement Tools

Map Information

Geological Photos

Active Legend

Download Data

Basemaps

Feature Information

Feature(s)	Name	Value
Bedrock	Rock Unit	Oadby Member (Lia (ODTL) More information from the British Geological Survey (opens in a new window)
Bedrock	Rock Type	Diamicton (DMTN) More information from the British Geological Survey (opens in a new window)
Superficial Deposits	Age	Pleistocene epoch
	Style	

Coords: 463684, 331076 (BNG)

View: Local

1000 m

Geological Map Data BGS © UKRI 2024. © Crown Copyright and Database Right 2024. Ordnance Survey (AC0000851941).

Viewing data in Digimap

My Previous Downloads

Overview Map

Map Content

My Maps

Overlays

Drawing Tools

Measurement Tools

Map Information

Geological Photos

Active Legend

Download Data

Basemaps

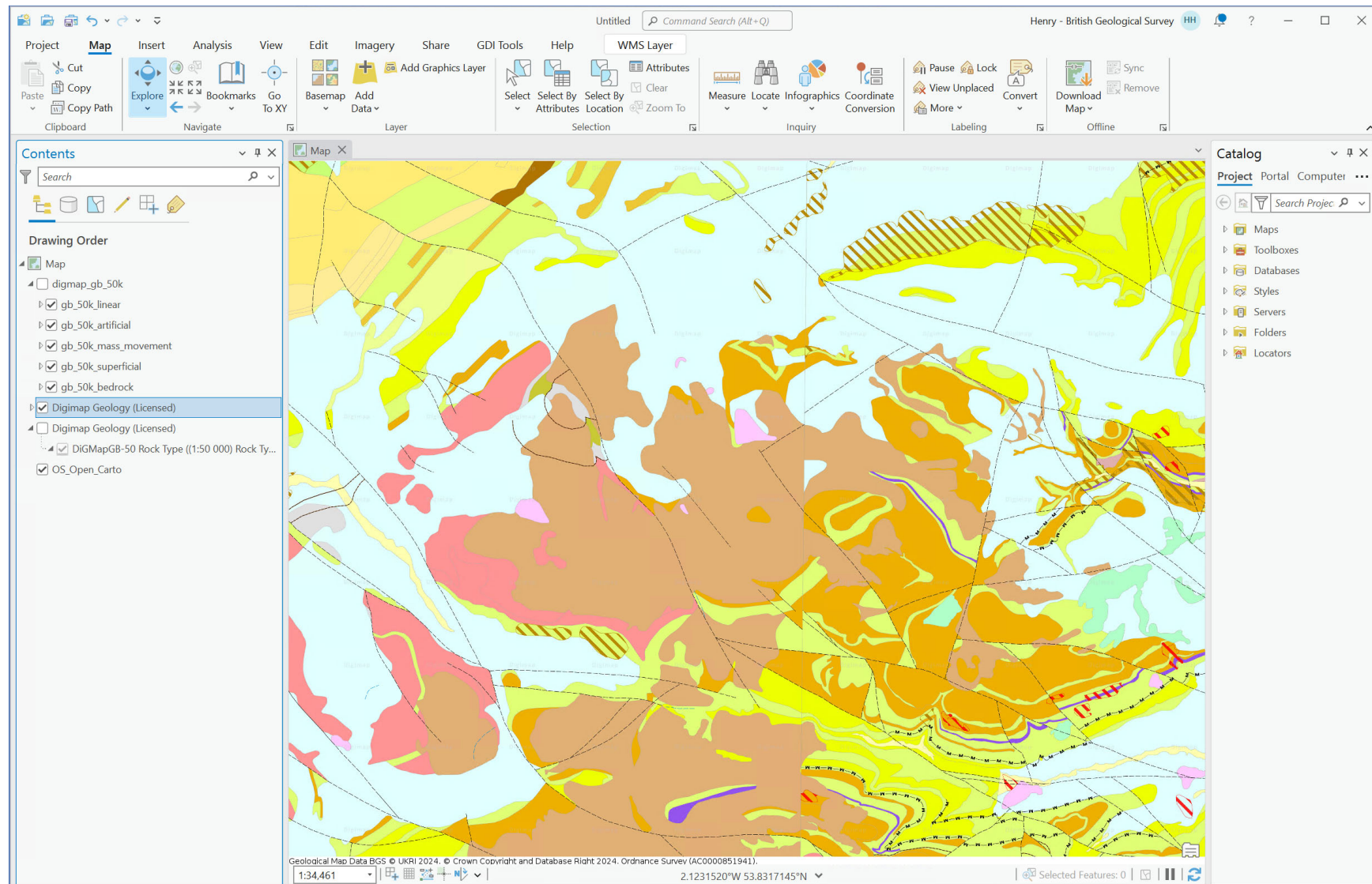
Feature Information

Feature(s)	Name	Value
Artificial Ground	Rock Unit	Worked Ground (Undivided) (WGR) More information from the British Geological Survey (opens in a new window)
Bedrock		
Faults	Rock Type	Void (VOID) More information from the British Geological Survey (opens in a new window)
Faults		
Artificial Ground	Style	
Superficial Deposits		
Faults		
Bedrock		
Bedrock		

Coords: 461602, 339657 (BNG)

Geological Map Data BGS © UKRI 2024. © Crown Copyright and Database Right 2024. Ordnance Survey (AC0000851941).

Viewing data in Digimap



Viewing data as WMS



BGS DATA PRODUCTS IN DIGIMAP

Derived BGS data products

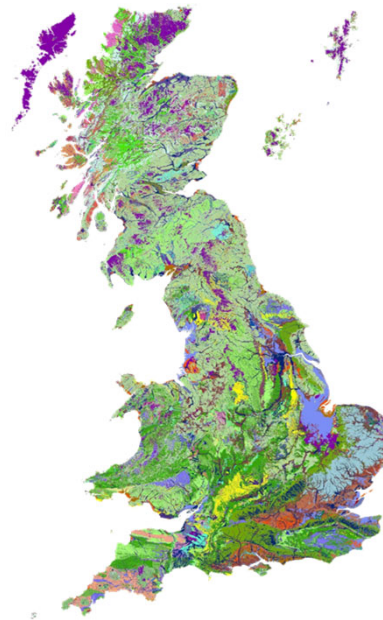
Creating data products

- Derived products are generally made to answer specific questions posed by stakeholders
- Baseline geological data underpins most BGS data products
- The BGS Products team carry out stakeholder engagement throughout the development phase and help with user testing
- Careful consideration is given to how we make the data available and how it fits with other datasets we already have available
- BGS data products are reviewed to ensure that they are still viable and can be supported and updated in the future



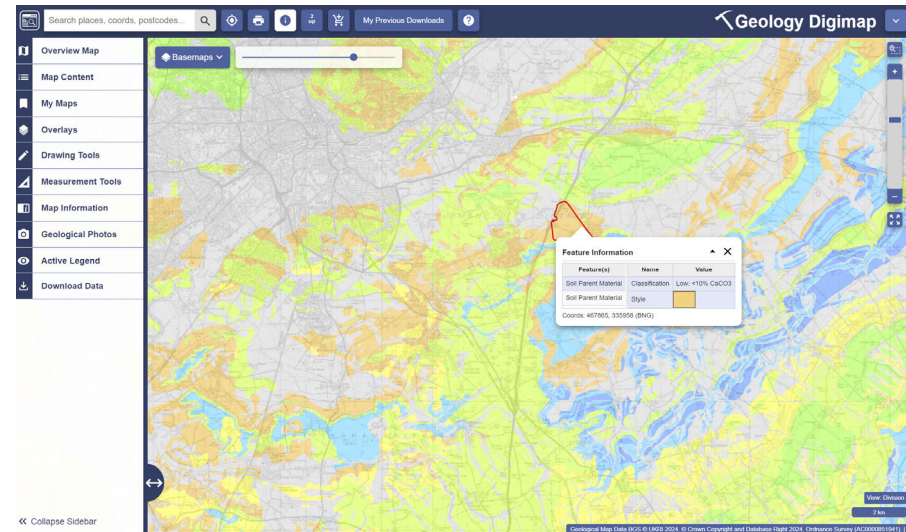
BGS Soils

- Parent Material
- Soil texture
- Soil group
- Soil CaCO_3

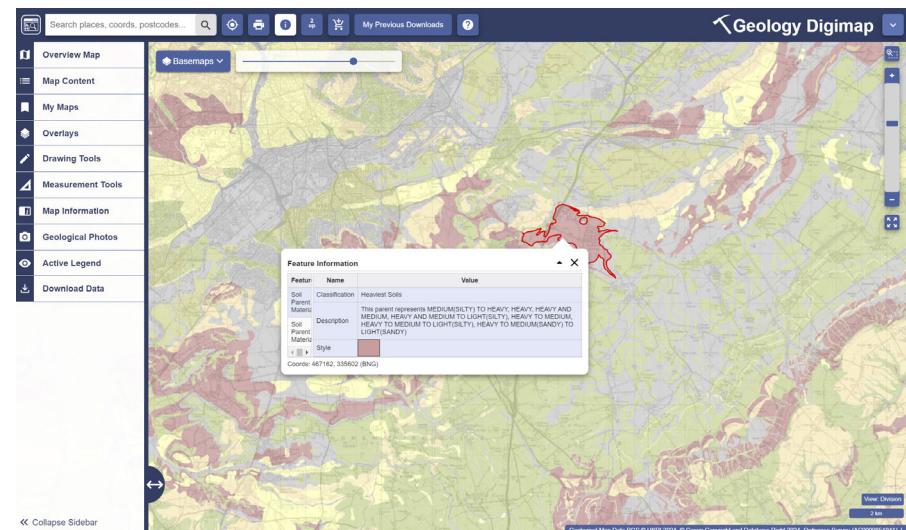


- Used by multiple Agri-sector bodies as a proxy for soil type
- Used to develop agricultural domains
- Used for habitat analysis

bgs.ac.uk/datasets/soil-parent-material-model
ukso.org



Soil calcium carbonate



Soil group

GeoCoast

Information on the morphology, behaviour and vulnerability of the coastline, underpinned by its geology and its coastal context (shape, orientation, tidal range, etc.)

GeoCoast Premium

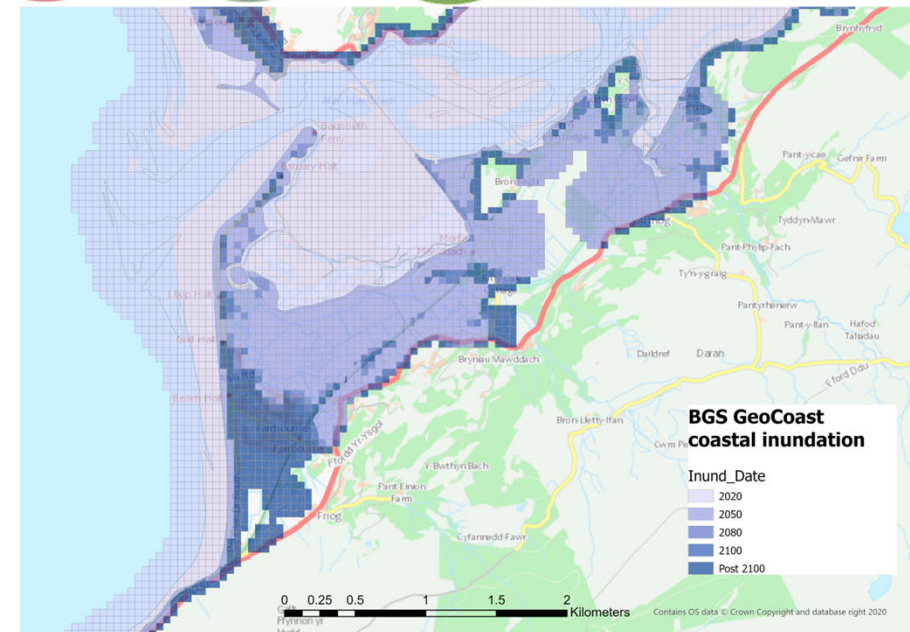
- Coastal erosion
- Coastal subsidence
- Foreshore
- Backshore
- Inundation climate change

GeoCoast Open

- Coastal domains
- Suite of open data – regional statistics

bgs.ac.uk/datasets/geocoast-open

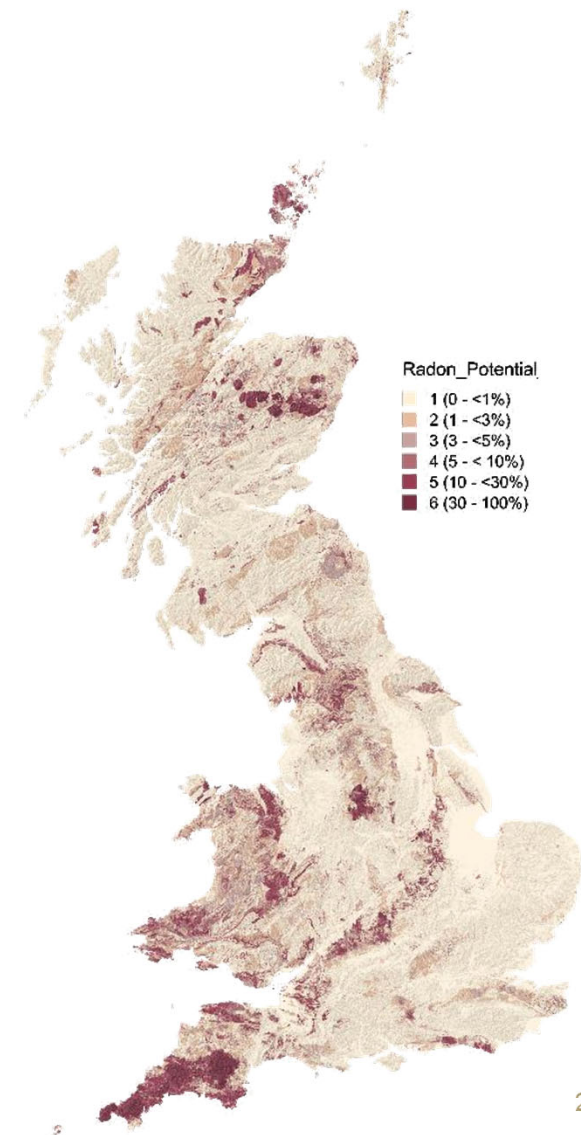
bgs.ac.uk/datasets/geocoast-premium



Radon

- Radon²²² is a radioactive noble gas. It is colourless and odourless.
- It is geogenic, a daughter-product from the decay of Uranium²³⁸ found in **all** rocks and soils across the UK.
- As a relatively heavy gas it can accumulate in natural voids and in buildings, particularly basements and ground floor rooms.
- Radon features in 4 areas of UK legislation:
 - Health and Safety at Work Act 1974
 - Management of Health and Safety at Work Regulations 1999
 - The Ionising Radiations Regulations 2017
 - Housing Act 2004
- Specifically covered in BR 211 (2015, 2023) and forming part of building and planning controls across UK.
- Most house purchases in UK (1.1 Million sales per year) now make specific mention of checking the radon status of the property (if it is in a radon affected area).

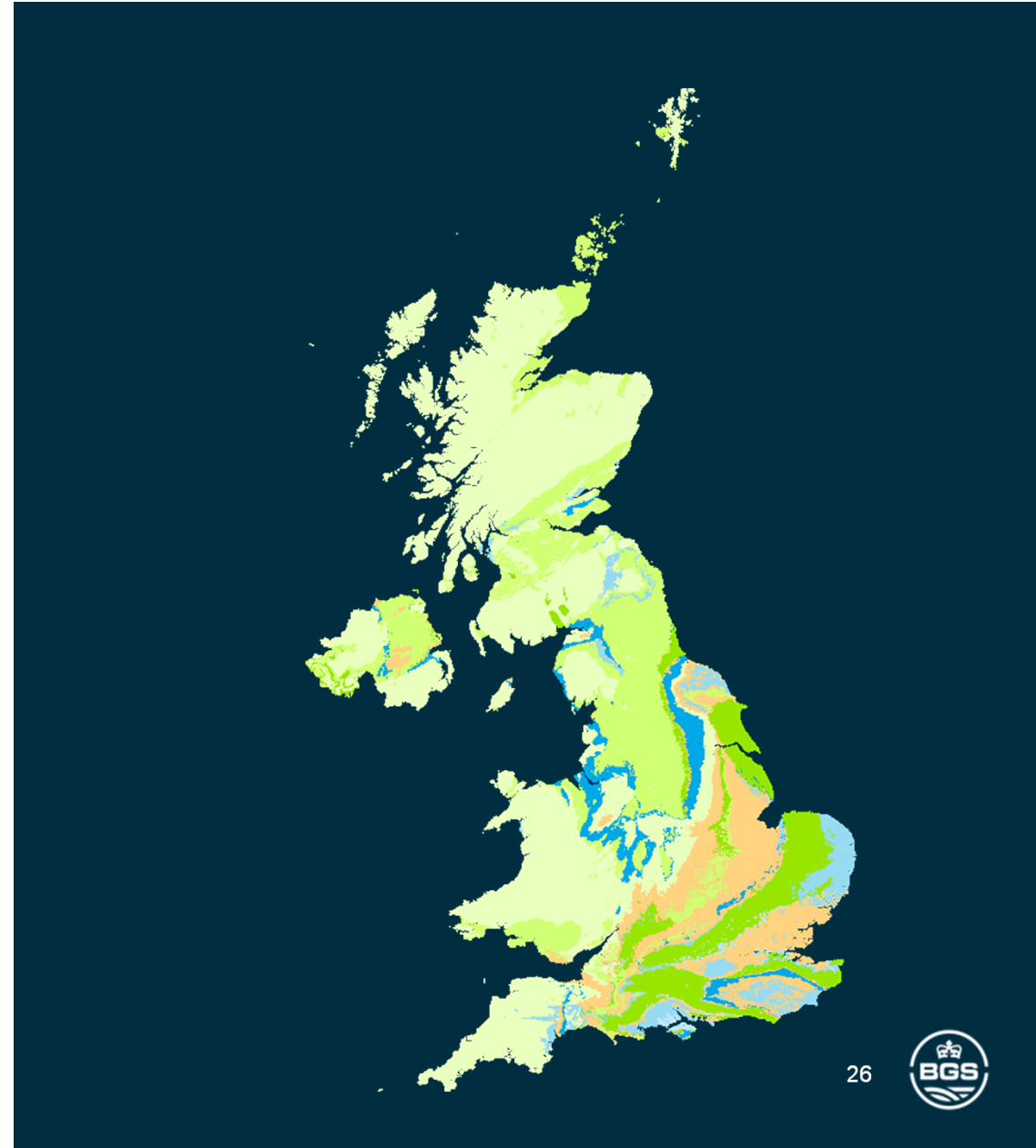
bgs.ac.uk/datasets/radon-data-indicative-atlas-of-radon
bgs.ac.uk/datasets/radon-data-radon-potential-dataset



Hydrogeology

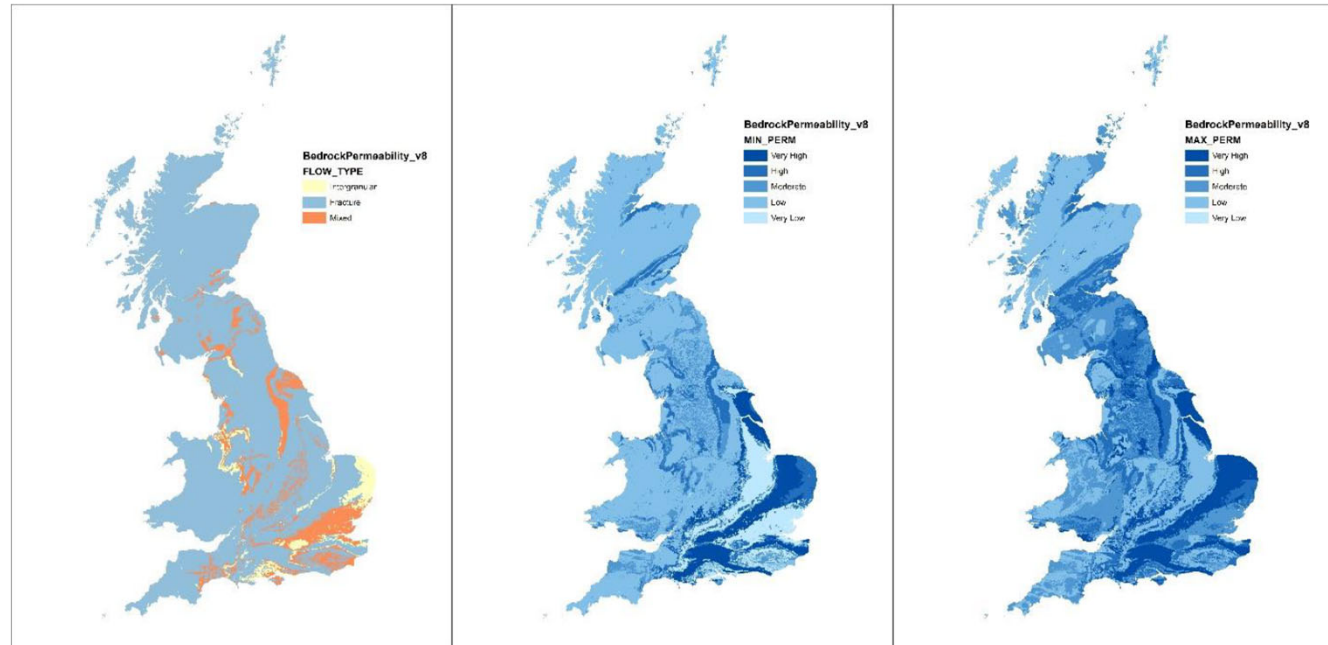
- 1:625 000 scale data
- Main rock description
- Classification of groundwater potential
- Description of groundwater potential (aquifer type)
- Flow mechanism
- Summary of hydrogeological properties of the rock unit

bgs.ac.uk/datasets/hydrogeology-625k



Permeability

- 1:50 000 scale data
- Refers to the capacity of a rock to transmit water
- Qualitative classification of estimated rates of vertical movement of water through the unsaturated zone of sediments and rocks
- Permeability rating given for all geological themes





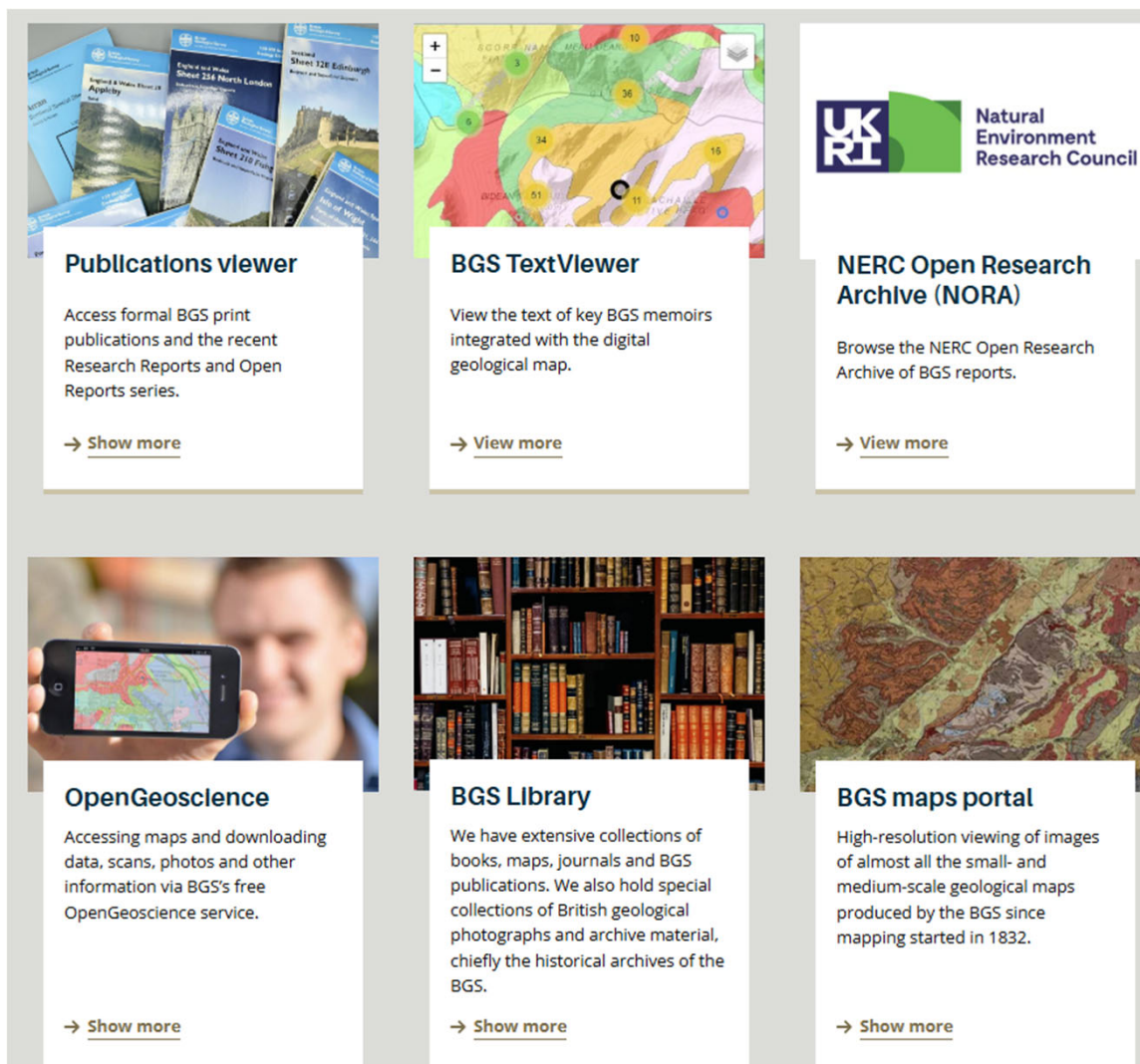
BGS DATA PRODUCTS IN DIGIMAP

Other resources from BGS

BGS publications

Free access to BGS maps, memoirs and reports

- Publications viewer
- NERC Open Research Archive
- Open Geoscience
- BGS Maps Portal



Publications viewer

Access formal BGS print publications and the recent Research Reports and Open Reports series.

→ [Show more](#)

BGS TextViewer

View the text of key BGS memoirs integrated with the digital geological map.

→ [View more](#)

NERC Open Research Archive (NORA)

Browse the NERC Open Research Archive of BGS reports.

→ [View more](#)

OpenGeoscience

Accessing maps and downloading data, scans, photos and other information via BGS's free OpenGeoscience service.

→ [Show more](#)

BGS Library

We have extensive collections of books, maps, journals and BGS publications. We also hold special collections of British geological photographs and archive material, chiefly the historical archives of the BGS.

→ [Show more](#)

BGS maps portal

High-resolution viewing of images of almost all the small- and medium-scale geological maps produced by the BGS since mapping started in 1832.

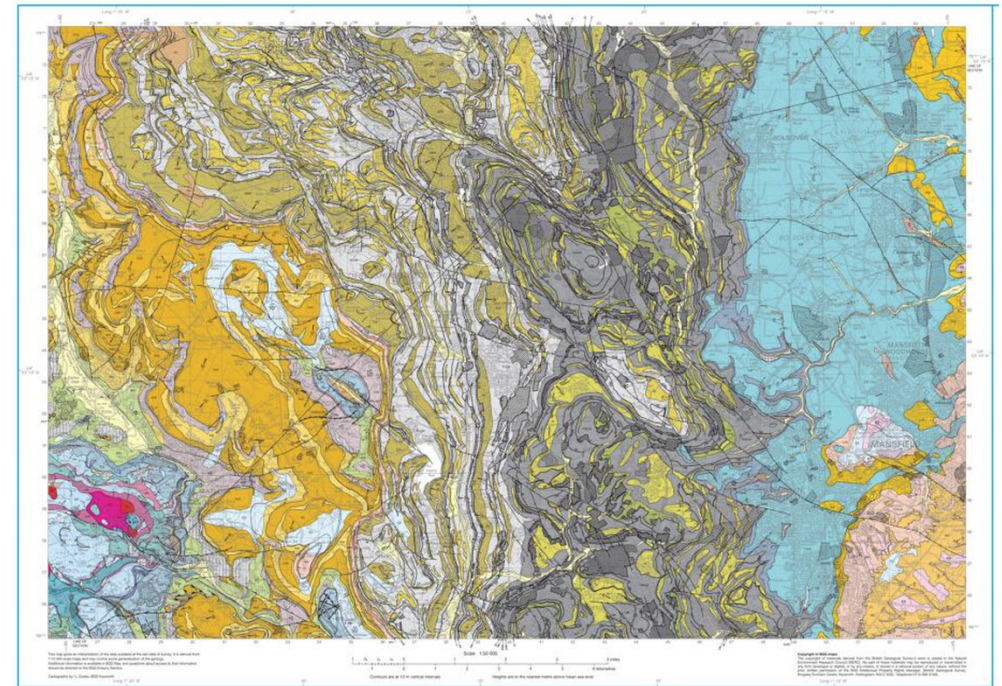
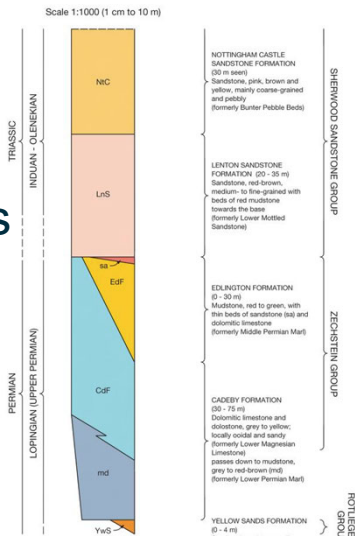
→ [Show more](#)

<https://www.bgs.ac.uk/information-hub/publications/>

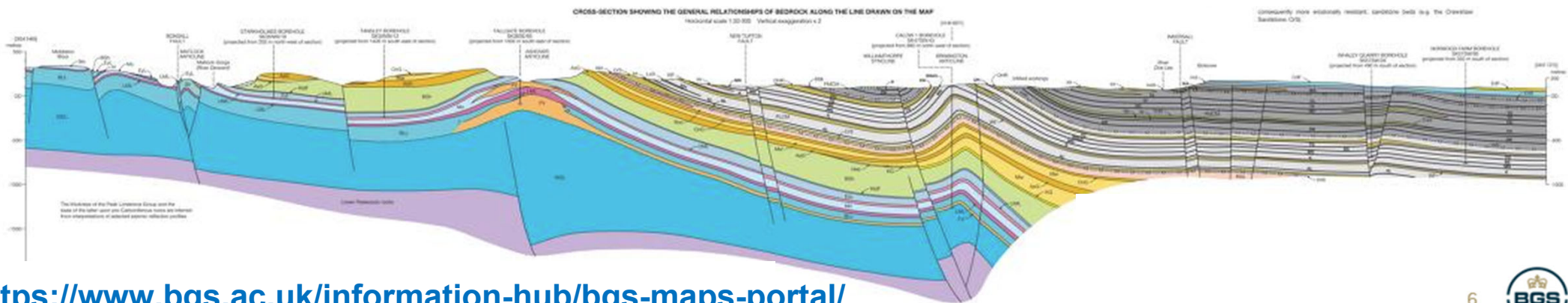
BGS Maps Portal

Free to view:

- Geology maps at various scales e.g. 10K, 50K
- Geophysical maps
- Geochemical maps
- Hydrogeological maps

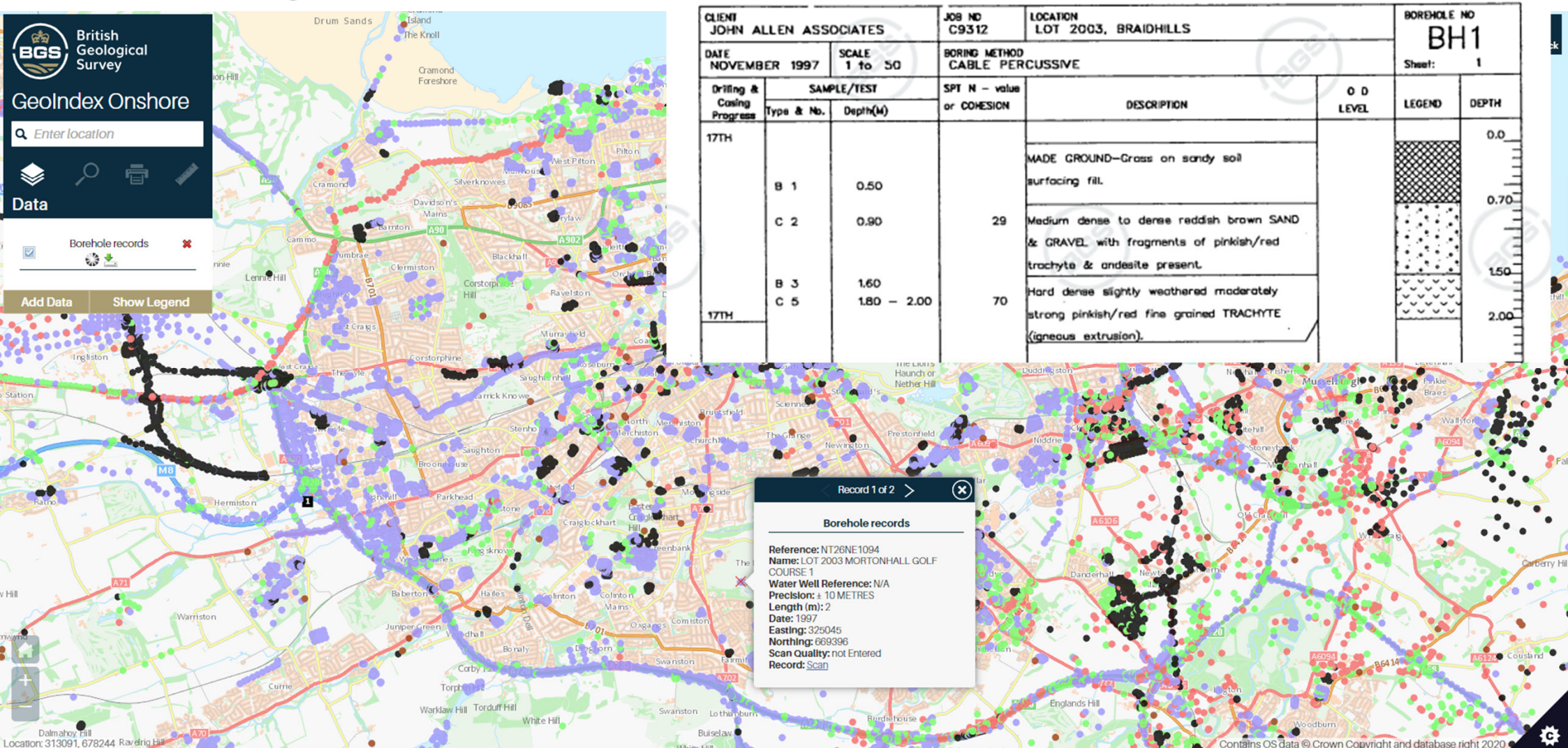


Chesterfield 50K map, GVS & cross-section



<https://www.bgs.ac.uk/information-hub/bgs-maps-portal/>

Accessing borehole scans

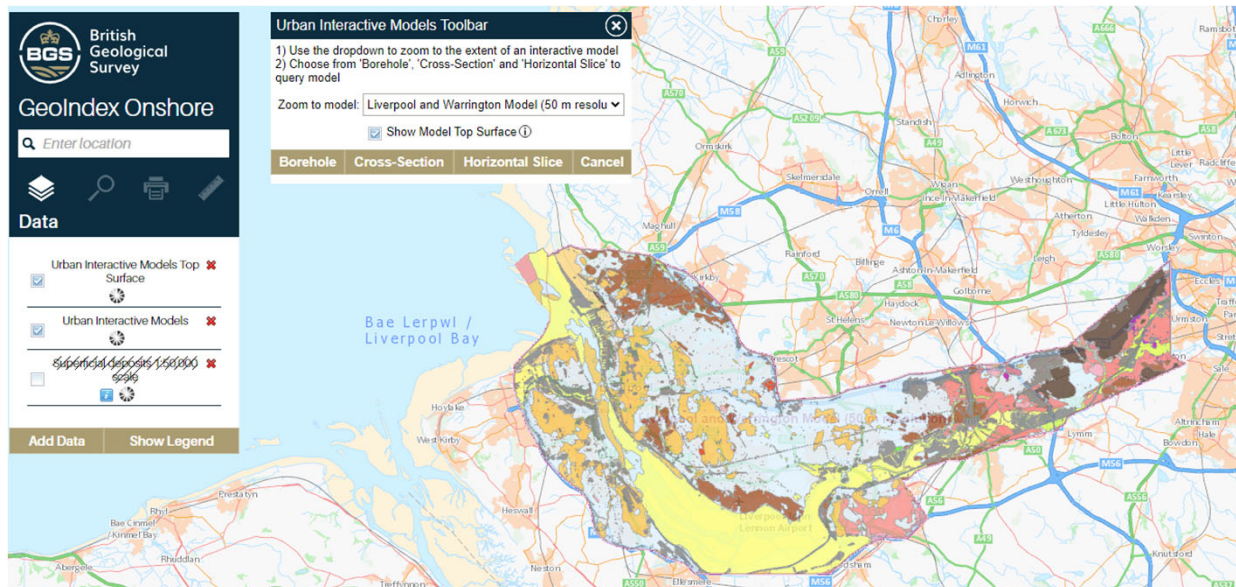
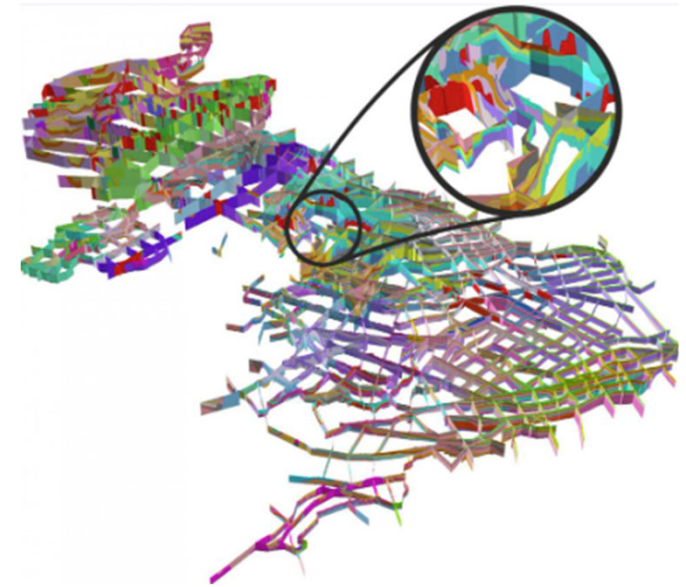


<https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

3D data

UK3D

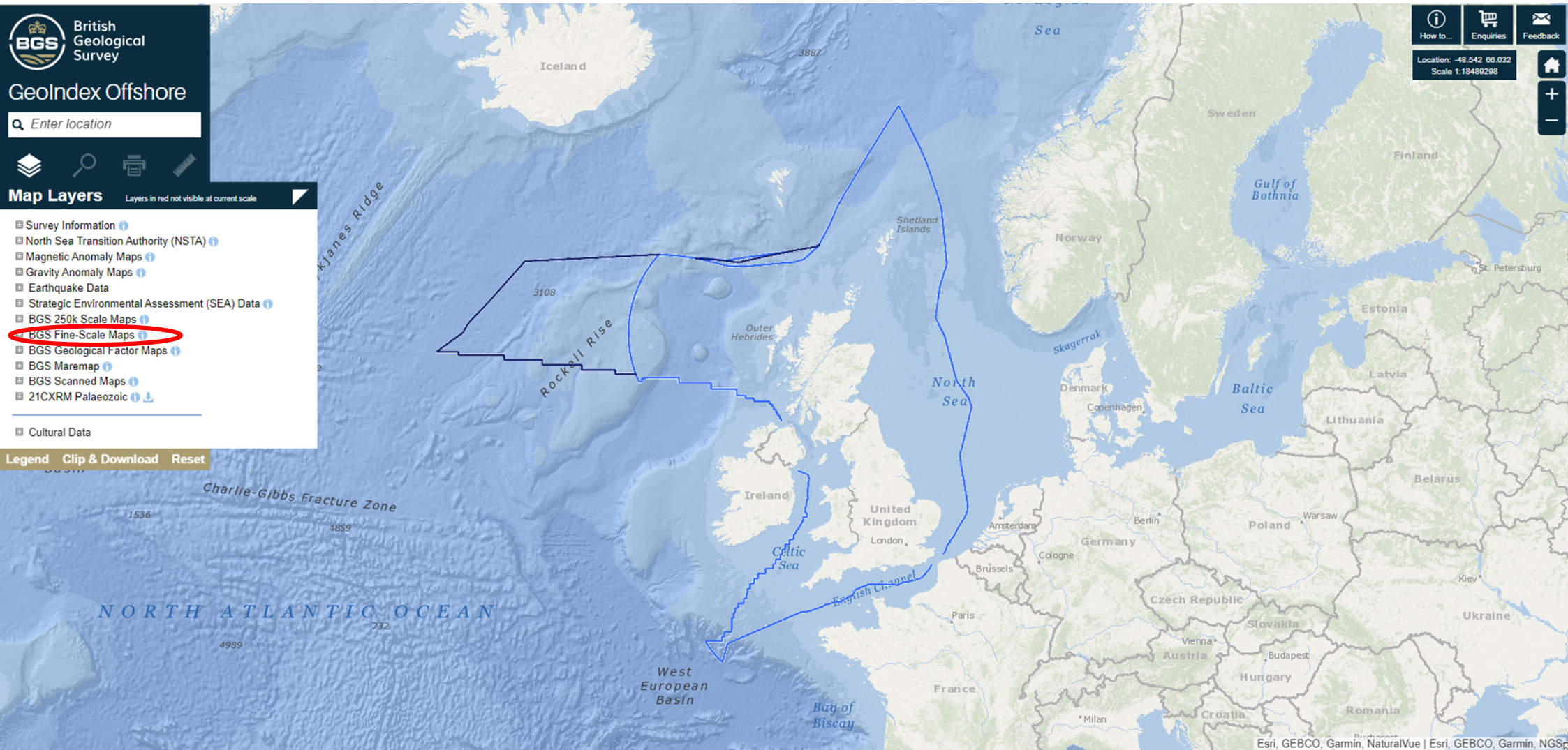
- National scale network of intersecting cross-sections
- Available to download for free at:
<https://www.bgs.ac.uk/datasets/uk3d/>



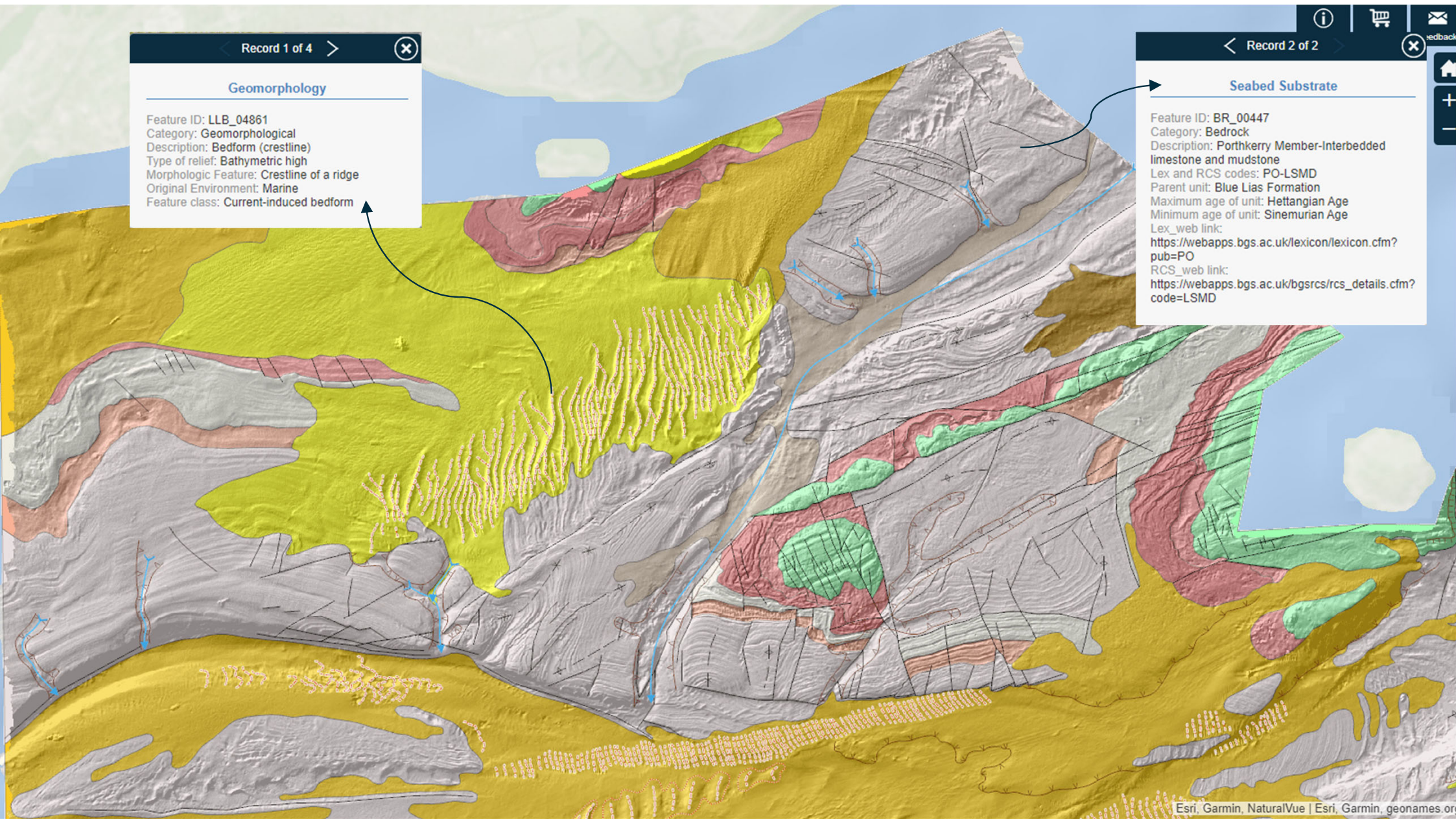
Urban interactive models

- Glasgow, Liverpool, Cardiff, London
- Available via the BGS GeoIndex at:
<https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

BGS GeoIndex Offshore



<https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>



Record 1 of 4

Geomorphology

Feature ID: LLB_04861
Category: Geomorphological
Description: Bedform (crestline)
Type of relief: Bathymetric high
Morphologic Feature: Crestline of a ridge
Original Environment: Marine
Feature class: Current-induced bedform

Record 2 of 2

Seabed Substrate

Feature ID: BR_00447
Category: Bedrock
Description: Porthkerry Member-Interbedded limestone and mudstone
Lex and RCS codes: PO-LSMD
Parent unit: Blue Lias Formation
Maximum age of unit: Hettangian Age
Minimum age of unit: Sinemurian Age
Lex_web link:
<https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=PO>
RCS_web link:
https://webapps.bgs.ac.uk/bgsrscs/rscs_details.cfm?code=LSMD

BGS DATA PRODUCTS IN DIGIMAP

2024 roundup

Use cases during 2024

- Borehole prognoses
- Radon reporting
- Ground-source heat (net zero targets for public buildings)
- EV charging point installations
- Offshore wind
- Radioactive waste
- Buried infrastructure peril assessment
- Brownfield re-use
- Mine gas mapping and modelling
- Peat mapping and thickness modelling
- Soil texture modelling

Further information

Data licencing enquiries: digitaldata@bgs.ac.uk

Specific questions:

Henry - hwho@bgs.ac.uk

Helen – hbu@bgs.ac.uk

Thanks for Listening!

- Any questions?

