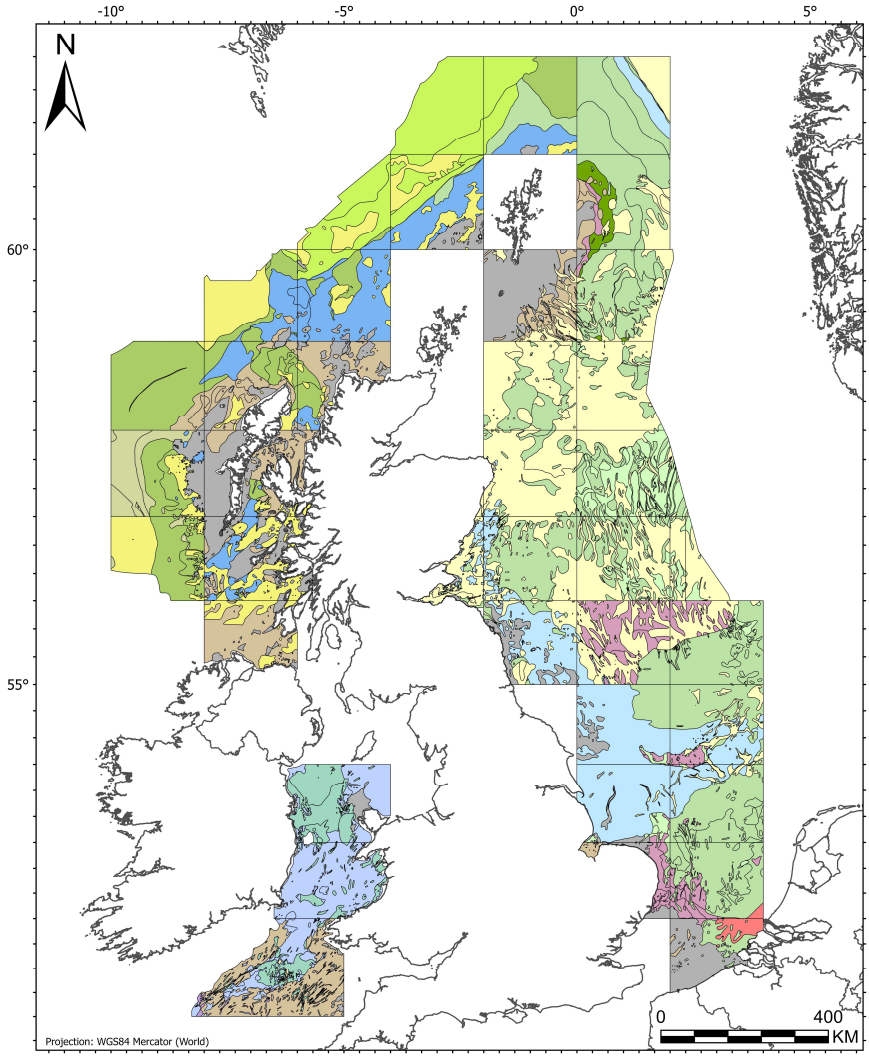
British Geological Survey

User guide for the BGS Offshore Quaternary 250K dataset

Marine Geoscience Programme

Open Report OR/25/049



BRITISH GEOLOGICAL SURVEY

MARINE GEOSCIENCE PROGRAMME

OPEN REPORT OR/25/049

User guide for the BGS Offshore Quaternary 250K dataset

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Front cover

The BGS Offshore Quaternary 250K dataset, symbolised by stratigraphical domain.

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BRITISH GEOLOGICAL SURVEY

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The British Geological Survey carries out the geological survey of Great Britain and Northern Ireland (the latter as an agency service for the government of Northern Ireland), and of the surrounding continental shelf, as well as basic research projects. It also undertakes programmes of technical aid in geology in developing countries.

The British Geological Survey is a component body of UK Research and Innovation.

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Foreword

The British Geological Survey (BGS) is a world-leading geological survey, focusing on public-good science for government and research to understand earth and environmental processes.

We are the UK's premier provider of objective and authoritative geoscientific data, information and knowledge to help society to:

- use its natural resources responsibly
- manage environmental change
- be resilient to environmental hazards

We provide expert services and impartial advice in all areas of geoscience. As a public sector organisation, we are responsible for advising the UK Government on all aspects of geoscience as well as providing impartial geological advice to industry, academia and the public. Our client base is drawn from the public and private sectors both in the UK and internationally.

BGS is a component body of the Natural Environment Research Council (NERC), part of UK Research and Innovation (UKRI).

DATA PRODUCTS

BGS produces a wide range of data products that align to Government policy and stakeholder needs. These include baseline geological data, engineering properties and geohazards datasets. These products are developed using in-house scientific and digital expertise, and are based on the outputs of our research programmes and substantial national data holdings.

Our products are supported by stakeholder focus groups, identification of gaps in current knowledge and policy assessments. They help to improve understanding and communication of the impact of geoenvironmental properties and hazards in Great Britain, thereby improving society's resilience and enabling people, businesses and the Government to make better-informed decisions.

1:250 000 SEABED GEOLOGY MAP PRODUCTS

BGS has produced a series of digital datasets at 1:250 000 scale describing the seabed geology of the UK continental shelf (UKCS). The digital bedrock geology and seabed sediment datasets have already been released and are currently available for licensing. The Quaternary geology has now been compiled, based on paper maps published between 1984 and 1992, and forms a complementary digital dataset. Together, this series of digital map products are intended to be enabling resources that support a diverse range of offshore activities and applications, including scientific research, offshore development and conservation initiatives.

This report is the user guide for the BGS Offshore Quaternary 250K dataset. It aims to inform users what this dataset contains, how it was derived and how best to use it.

Acknowledgements

The final dataset generation and writing of this report were completed by Andrew Dyson, Dayton Dove and Christian Bonde. Initial digitising and processing of the dataset was completed by Sandy Henderson, Rhys Cooper and Diego Diaz Doce. Heather Stewart is thanked for her valuable contributions to the project.

The original BGS 250K Offshore Quaternary Geology map sheets underpin this digital dataset and the teams that completed that earlier work are acknowledged. The results of Stoker et al. (2011) have been used to supplement the dataset and those authors are also acknowledged.

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1 Summary

This offshore Quaternary geology dataset shows the distribution of interpreted lithostratigraphical units within the shallow subsurface. The dataset represents the Quaternary geology immediately beneath the active seabed sediment layer. Large areas of the UK offshore are covered at a scale of 1:250 000. The dataset is composed of vector polygons, each representing an area where a particular formation has been mapped.

This dataset is a compilation of individual map sheets released between 1984 and 1992 and directly reflects this legacy mapping. There are several known polygon boundary matching and consistency issues present within this digital compilation. The decision to present the legacy mapping 'as it was', boundary matching issues included, is intentional. The map compilation is not informed by new data or analyses, so attempting to smooth or 'correct' these boundary issues would be potentially misleading, offering a false sense of accuracy that is not based on systematic analysis. While work to refine the stratigraphical framework is ongoing, the principal drive behind this release was to make the original 250K map data available in a digital format.

Information from the original map sheets has been included in the attribute fields in this dataset, including a lithological description for each formation. Additional data has also been provided where it was deemed to add value. The BGS Lexicon code for each formation has been supplied so users can research any formation of interest. The maximum and minimum age of each formation, in a variety of formats, has also been added. This key lithostratigraphical information was sourced from Stoker et al. (2011).

Our understanding of the Quaternary lithostratigraphy is evolving due to the increased data collection associated with renewable energy development. However, no formal update of the regional lithostratigraphical framework has been completed at the time of release. This dataset therefore reflects the understanding at the time of original publication. Inaccuracies in the dataset may have since been resolved and the level of uncertainty regarding the age or character of a formation may have changed. Nonetheless, this dataset contains valuable information and this digital version will help facilitate access to this for users.

The information provided in this user guide is intended to provide a quick-start guide to using and understanding this BGS digital product. The map citation, metadata and overview can be found here: British Geological Survey. (2026). Offshore Quaternary 250k UK. British Geological Survey. (Dataset). https://doi.org/10.5285/e1f03873-9619-4c69-8190-371330274108

2 Introduction

The BGS Offshore Quaternary 250K dataset shows the distribution of interpreted lithostratigraphical units within the shallow subsurface. Large areas of the UK offshore are covered at a scale of 1:250 000. This dataset was originally published between 1984 and 1992 as a series of paper map sheets. This series of Quaternary geology maps, delivered together with maps of seabed sediments and solid geology, was developed as part of systematic survey and mapping of the UKCS (Fannin, 1989).

These map sheets were originally published in hard copy format and were subsequently made accessible as digital scans via the BGS website. Complementary digital datasets displaying the bedrock geology and seabed sediments have also been published and are currently available for licencing as digital images.

This is the first time that the Quaternary geology 1:250 000 maps have been made available in digital format. This dataset is a digital record of the original map sheets and no changes have been made to the data displayed in the map. The uncertainties that existed when it was originally released remain and it is important that users consider this.

The compositions of the seabed and shallow subsurface are of importance to a range of stakeholders connected to:

- sea fisheries and aquaculture
- renewable energy (wind, wave and tidal power)
- marine communications
- dredging
- the aggregate industry

This digital geological map is intended to be an enabling resource that helps better inform multiple offshore activities, research and management of the marine environment across the UK offshore.

3 About the BGS Offshore Quaternary 250K dataset

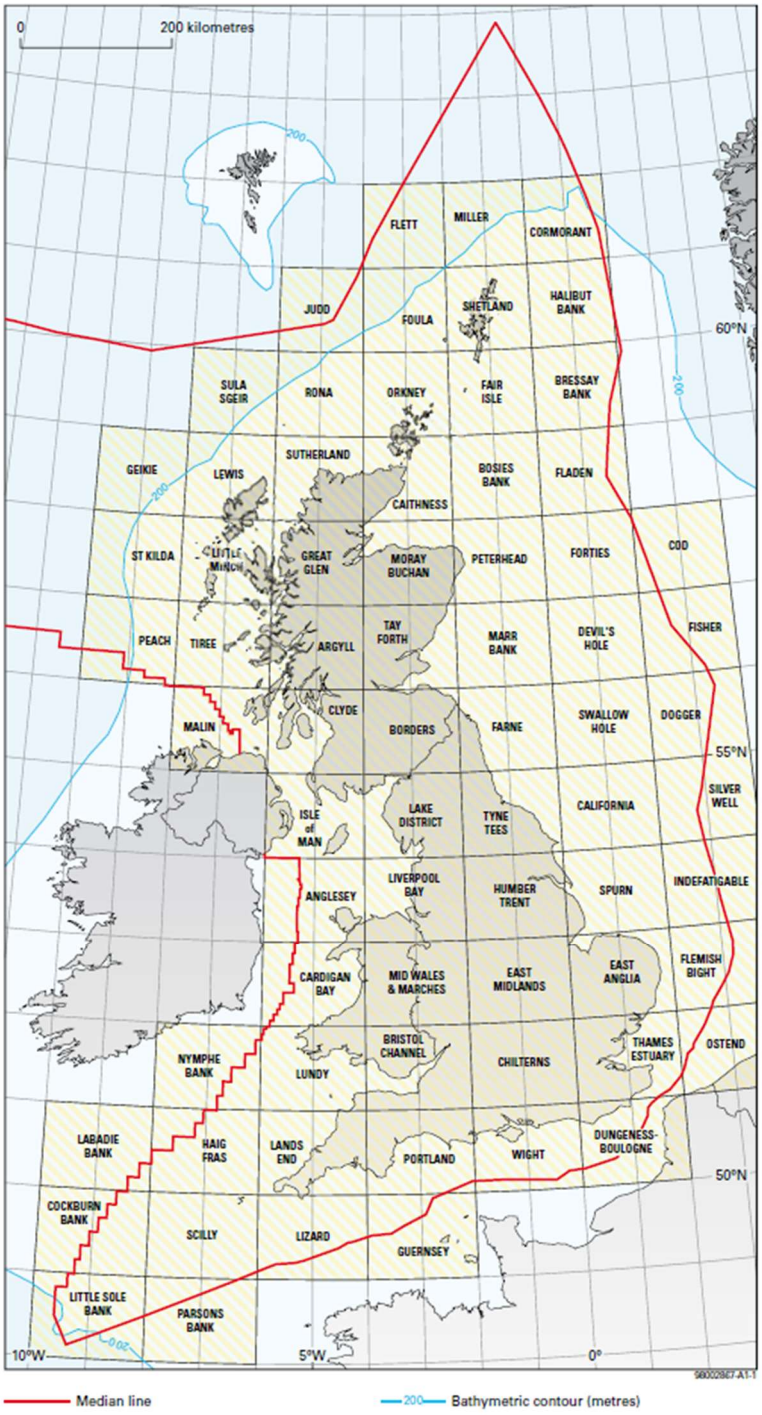

Figure 1 Distribution of map sheets across the UK offshore area. From Stoker et al. (2011).

3.1 WHAT THE DATASET SHOWS

The geospatial dataset is composed of polygons, each representing an area of mapped Quaternary geology (Figure 2), and covers five regions of the UK offshore (Figure 3 and Figure 4). Geological formation has been assigned to most of these polygons, with the age of the formations ranging from early Pleistocene to Holocene. Several formations have a lower boundary in the Pliocene and have been included for completeness. Thin or absent Quaternary geology is described in place of a formation attribute. Areas of undifferentiated Quaternary geology were interpreted in the original mapping and have been retained without further interpretation.

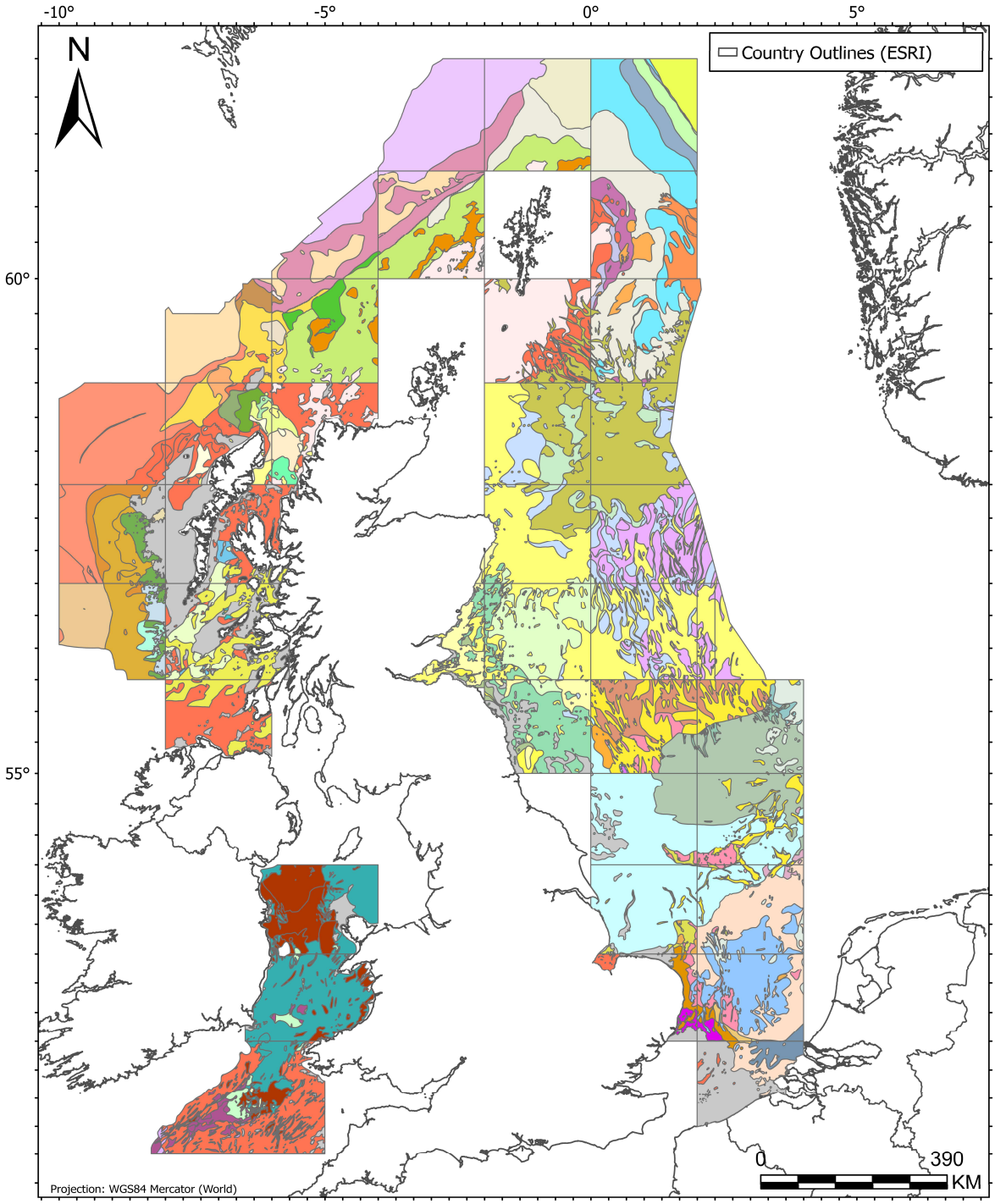

Figure 2 The BGS Offshore Quaternary 250K dataset, symbolised by BGS Lexicon (LEX) code. A full list of the mapped formations and their LEX codes is provided in Appendix 1. Coastline from Esri World Countries layer. Layer contains data from Esri, Garmin International, Inc., U.S. Central Intelligence Agency (The World Factbook), and International Organization for Standardization (ISO). Basemap created using ArcGIS. Copyright © Esri 2026. All rights reserved. www.esri.com

3.2 ORIGINAL MAPPING

This dataset was originally published between 1984 and 1992 as a series of individual map sheets. The geology of each map sheet was interpreted using a coarsely spaced geophysical survey and a low-density borehole database. Formations were identified based on regional stratigraphical understanding and their seismic character. Stratigraphical columns, cross-sections, borehole logs and descriptions of each formation were also included in each map sheet. These map sheets can be viewed on BGS's offshore map viewer, Offshore GeoIndex.

3.3 STATUS OF OFFSHORE QUATERNARY FORMATIONS

Since the original maps were published, our understanding of the shallow subsurface has evolved but the lithostratigraphical framework has not been formally updated. The existing offshore framework at the time was summarised in Stoker et al. (2011).

This report:

- lists the interpreted Quaternary formations
- assigns them a lithostratigraphical parent group
- assigns a marine isotope stage (MIS) range
- presents the approximate geographical distribution of these groups

The report also provides citations to the original pieces of work that defined each formation. Key information from this report has been included in the dataset (Section 3.4). Figure 3 and Figure 4 show the distribution of the lithostratigraphical groups to which the formations have been assigned.

The ongoing development of the offshore renewables industry is resulting in areas of dense, modern data acquisition, including closely spaced boreholes and high-resolution seismic data. The understanding of the lithostratigraphy in areas with new data may have evolved but new insights are not reflected in this dataset, which represents the original interpretations. No regional-scale, formal update to the UK offshore Quaternary lithostratigraphical framework has been made since the publication of Stoker et al. (2011). When this does occur, an update to this dataset would be recommended.

Section 5 provides further details with respect to uncertainties in the dataset.

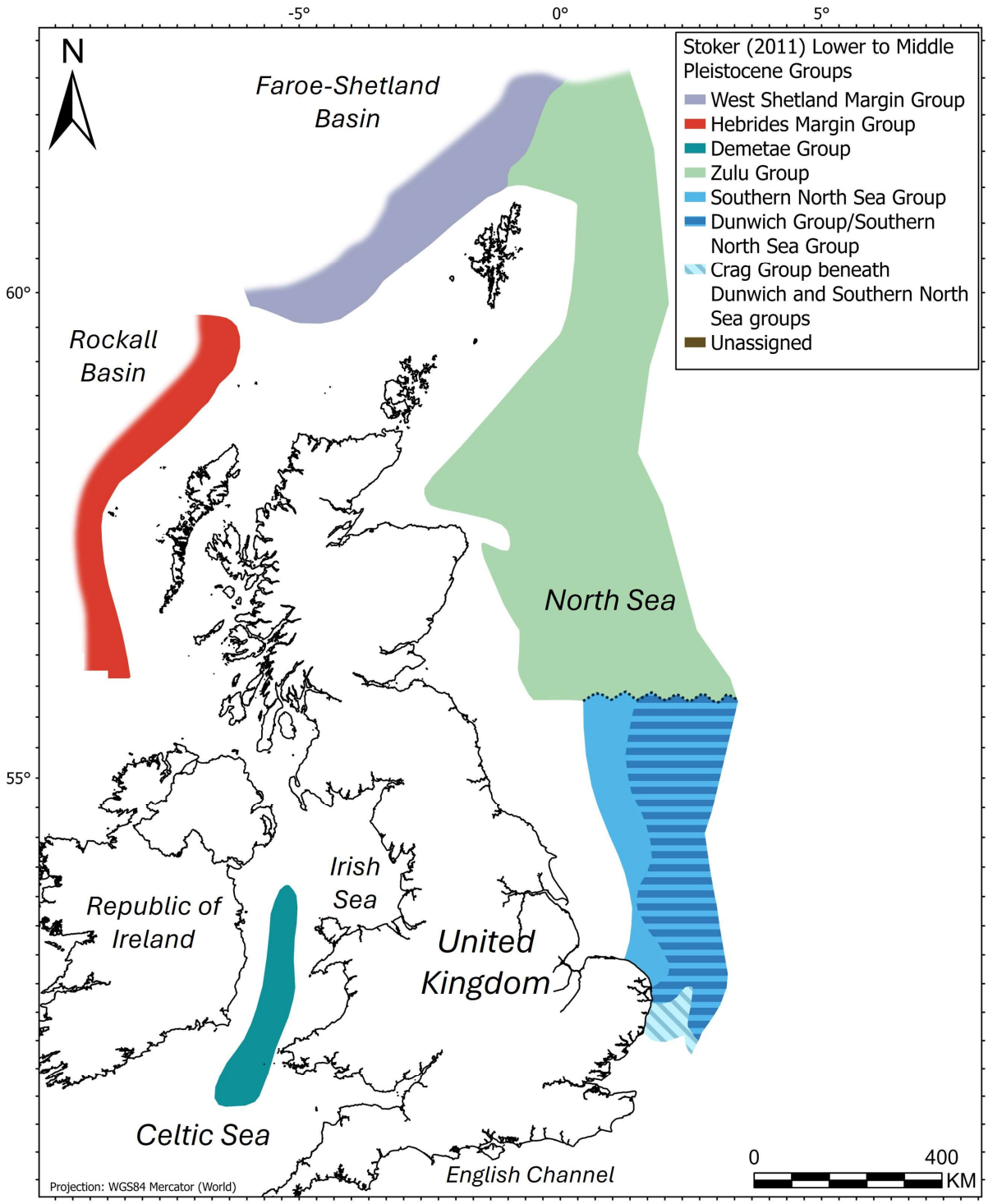

Figure 3 The distribution of early to middle Pleistocene lithostratigraphical groups. Reproduced from Stoker et al. (2011). Coastline from Esri World Countries layer. Layer contains data from Esri, Garmin International, Inc., U.S. Central Intelligence Agency (The World Factbook), and International Organization for Standardization (ISO). Basemap created using ArcGIS. Copyright © Esri 2026. All rights reserved. www.esri.com

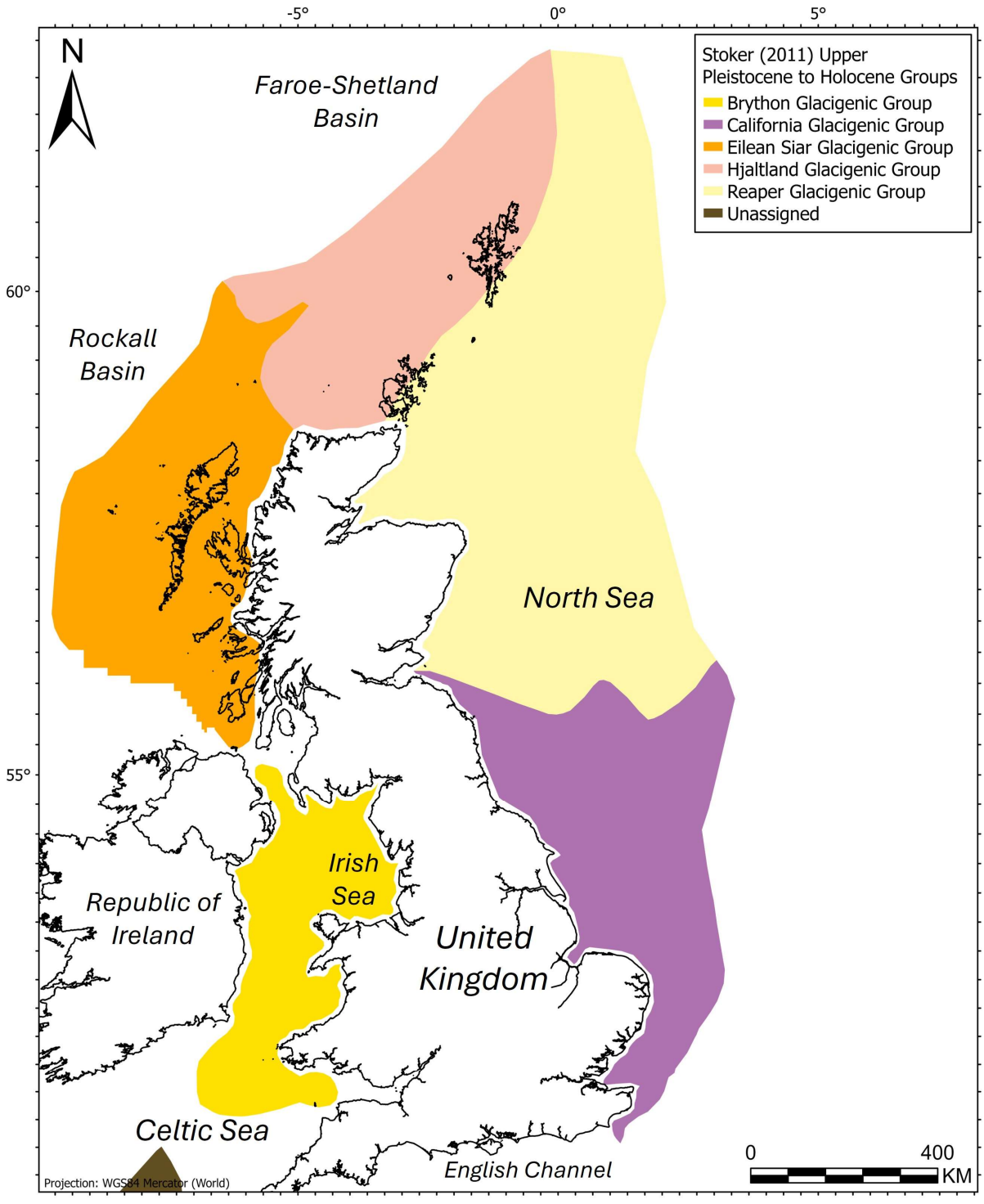

Figure 4 The distribution of late Pleistocene to Holocene lithostratigraphical groups. Reproduced from Stoker et al. (2011). Coastline from Esri World Countries layer. Layer contains data from Esri, Garmin International, Inc., U.S. Central Intelligence Agency (The World Factbook), and International Organization for Standardization (ISO). Basemap created using ArcGIS. Copyright © Esri 2026. All rights reserved. www.esri.com

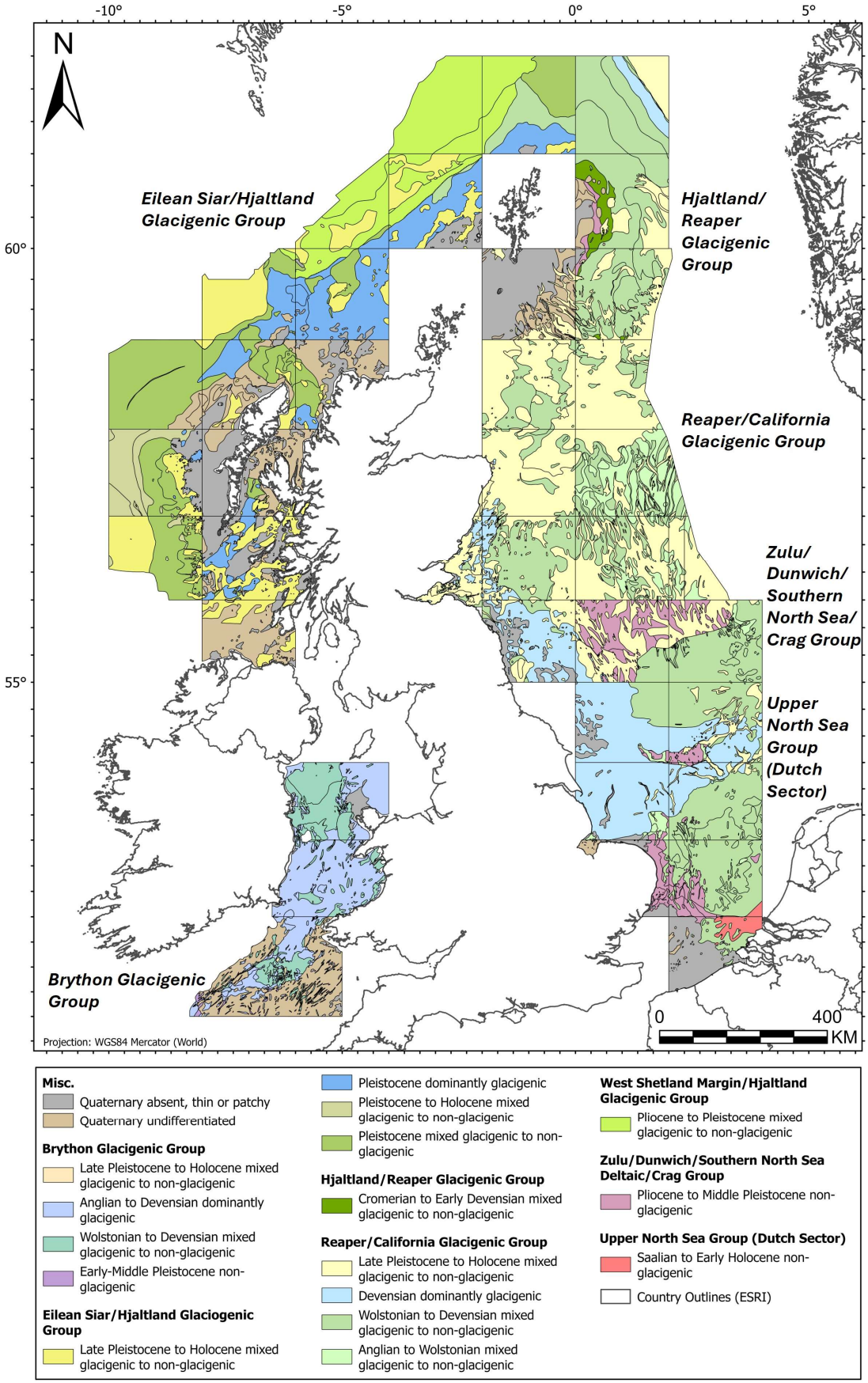

Figure 5 The BGS Offshore Quaternary 250K geology dataset, symbolised by stratigraphical domain. Coastline from Esri World Countries layer. Layer contains data from Esri, Garmin International, Inc., U.S. Central Intelligence Agency (The World Factbook), and International Organization for Standardization (ISO). Basemap created using ArcGIS. Copyright © Esri 2026. All rights reserved. www.esri.com

3.4 FURTHER SUPPLEMENTARY DATA

3.4.1 Lithostratigraphical information

The lithostratigraphical formation and corresponding LEX code is provided for each polygon. This has been supplemented with information from Stoker et al. (2011) (Section 3.3). The parent group for each formation has been added to the dataset. Geological ages have also been added, including MIS, epoch, stage and period. The interpreted maximum and minimum value are provided or each of these.

3.4.2 Additional areas at 1:500 000 scale

No 1:250 000 scale maps were originally made for the Fair Isle, Little Minch, Malin, Moray–Buchan and Sutherland areas. However, Quaternary geology maps at 1:500 000 scale are available as part of the 1:250 000 seabed sediments map sheets. These have been digitised and added to the dataset to give additional coverage.

3.4.3 Lithostratigraphical domains

The formations have been grouped together into lithostratigraphical domains. This gives the user an indication about the age and broad depositional environment of a formation. Symbolising and viewing the dataset by this attribute gives users a broad overview of the dataset.

Users can also view the geology of a particular region and see how a formation of interest compares with neighbouring areas. To create this field, the formations were grouped by lithostratigraphical parent group (sections 3.3 and 3.4.1). The formations were then assigned a broad depositional domain; for example, dominantly glacigenic, mixed glacigenic to non-glacigenic, and non-glacigenic. This information was mainly sourced from the original map sheets, with some supplementary research. Once grouped by domain, formations of a similar age range within a domain were grouped together into ‘stratigraphical domains’. Other polygons in the dataset such as ‘pre-Quaternary’ and ‘Quaternary undifferentiated’ have also been included as separate domains.

4 Technical information

4.1 COVERAGE

The dataset is based on the original (1984 to 1992) 1:250 000-scale offshore Quaternary geology paper maps, which cover a large proportion of the offshore areas of the UK. There are gaps in the Celtic Sea, English Channel, Irish Sea and Rockall regions. There is also no coverage in some nearshore areas that were not included in the original mapping. Part of the dataset covers an area of offshore Ireland and offshore Netherlands. These have been retained for completeness. For areas outside this dataset's coverage, users are directed to the 'Quaternary deposits summary lithologies across the UK Continental Shelf (2014 Version)' dataset. This has a scale of 1:100 000 and can accessed via the Offshore GeoIndex.

4.2 SCALE

The dataset is based on maps produced at 1: 250 000 scale. The data covering the Fair Isle, Little Minch, Malin, Moray–Buchan and Sutherland map sheets has been produced at 1:500 000 scale (Section 3.4.2).

4.3 CREATION OF THE DATASET

To create this digital dataset, the original 250K Quaternary geology maps were scanned and georeferenced. The boundaries on the maps were then digitised to create polygons. Information from the original map sheets was assigned to the attributes of each polygon (see Table 1). The supplementary information described in Section 3.4 was spatially joined to each polygon.

4.4 DATA FORMAT

The dataset is provided as an ESRI® shapefile. Other vector formats are available on request. More specialised formats may be available but may incur additional processing costs. Please email BGS Enquiries (enquiries@bgs.ac.uk) to request further information.

4.5 DISPLAYING THE DATA

ESRI® layerfiles are provided with the dataset so users can view the data with the following displays:

- by LEX code: each polygon is coloured by the 'LEX_CODE' attribute
- by stratigraphical domain: each polygon coloured by its 'STRAT_DOM' attribute, for viewing by stratigraphical domains

4.6 ATTRIBUTE DESCRIPTIONS

Table 1 Attribute descriptions for the dataset, including field names and corresponding description.

Field name (alias)	Description
LEX_CODE	The corresponding BGS Lexicon code for the formation
LEX_CODE_D	The geological formation mapped in the polygon
MAP_CODE	The map code used in the original 1:250 000 mapping
MAP_CODE_D	The geological formation as described in the original 1:250 000 map sheets
MAP_LITH	A summary of the described lithologies for the formation, from the original 1:250 000 mapping
COMMENTS	Any specific comments related to a polygon in the original mapping
GROUPS	The lithostratigraphical group that a formation belongs to
MAX_MIS	The maximum marine isotope stage (MIS) that the formation could be attributed to
MIN_MIS	The minimum marine isotope stage (MIS) that the formation could be attributed to
MAX_EPOCH	The maximum geological epoch that a formation could fall within
MIN_EPOCH	The minimum geological epoch that a formation could fall within
MAX_ST_BR	The maximum geological stage that a formation could fall within (British nomenclature)
MIN_ST_BR	The minimum geological stage that a formation could fall within (British nomenclature)
MAX_ST_EUR	The maximum geological stage that a formation could fall within (north-west Europe nomenclature)
MIN_ST_EUR	The minimum geological stage that a formation could fall within (north-west Europe nomenclature)
MAX_PERIOD	The maximum geological period that a formation could fall within
MIN_PERIOD	The minimum geological period that a formation could fall within
STRAT_DOM	The stratigraphical domain the polygon is assigned to
SHEET	The map sheet that the polygon is located within
SCALE	The scale of the original mapping and therefore the polygon
PUBLISHED	The year the original map sheet was published
DATASET	The dataset which the polygon forms part of
VERSION	The version of the dataset which the polygon forms part of
HEX	Hex colour code for symbology
RGB	RGB colour code for symbology
RED	Red value colour code for symbology
GREEN	Green value colour code for symbology
BLUE	Blue value colour code for symbology

5 Limitations

5.1 DATA CONTENT ACCURACY

The dataset is a digital version of the original 1:250 000 Quaternary geology maps, with no edits or updates made to the map content. As such, any inaccuracies in the original maps will remain in this data. Several mismatched boundaries between neighbouring map sheets are clear when viewing the data together in its new format. These boundary inconsistencies relate back to when the original map sheets were created, because neighbouring maps would have been created at different times, with different underlying data and, potentially, different authors. The nomenclature assigned to formations on maps may also abruptly change across sheets. This is due to differences in the naming of formations across neighbouring regions.

5.2 SCALE

The 1:250 000 scale that this dataset was mapped at is generalised and the geological interpretation should only be used as a guide to the geology at a regional level, not as a site-specific geological plan based on detailed site investigations. Do not over-enlarge the data; for example, do not use 1:250 000 nominal-scale data at 1:10 000 working scale.

5.3 GEOLOGICAL UNCERTAINTY

Uncertainties in the original mapping and assignment of formations will remain present in this dataset. The mapping was carried out using geophysical data calibrated to boreholes, shallow cores and grab samples.

There are several opportunities for uncertainty to be introduced into the mapping:

- there is often uncertainty in the exact position of sampling locations and geophysical data acquisition locations
- the interpretation of boreholes, shallow cores and drop samples relies on good recovery of material and reliable dating of sediments
- biostratigraphical age data may not have been available, with a tentative age and formation assigned based on regional geological setting
- when calibrating samples with acoustic surveying such as seismic data, velocity information would have commonly not been available to generate a seismic-to-borehole tie
- the regional seismic database used in the interpretation is generally poor to moderate quality

The stratigraphical framework applied to the mapping covers broad regions, with limited calibration at local scale. It is possible that a formation name may have been used that has now been renamed in a particular area, removed or grouped together with another formation.

As discussed in Section 3.2, the ongoing development of the offshore renewables industry is resulting in an evolution in the understanding of UK offshore Quaternary lithostratigraphy. This updated understanding will likely be specific to certain areas and may have reduced or increased uncertainty. Therefore, there may be inconsistencies between the data provided in this dataset and the working understanding of an area that a user may have.

5.4 DISCLAIMER

The use of any information provided by the British Geological Survey ('BGS') is at your own risk. Neither BGS nor the Natural Environment Research Council ('NERC') or UK Research and Innovation ('UKRI') gives any warranty, condition or representation as to the quality, accuracy or completeness of the information or its suitability for any use or purpose. All implied conditions relating to the quality or suitability of the information and all liabilities arising from the supply of the information (including any liability arising in negligence) are excluded to the fullest extent permitted by law. No advice or information given by BGS, NERC, UKRI or their respective employees or authorised agents shall create a warranty, condition or representation as to the quality, accuracy or completeness of the information or its suitability for any use or purpose.

6 Frequently asked questions

Q: Why are there mismatches between polygon boundaries?

A: There are known boundary mismatches between the previous map sheet areas that remain in the dataset. The map compilation is not informed by new data or analyses and no attempt was made to smooth or 'correct' the boundary issues. This was to avoid offering a false sense of accuracy that is not based on updated systematic analysis.

Q: How accurate is this map?

A: It is intended for this dataset to be viewed and used at 1:250 000 scale. Users should be aware that geological maps are a compilation of inferred features. It is not possible to provide a consistent level of accuracy for all objects in a geological map. Further details about the accuracy of this dataset are provided in the 'Limitations' section (Section 5) of this report.

Q: Where can I get digital data?

A: This digital map is made publicly accessible by BGS via Open Government Licence (OGL), subject to certain standard terms and conditions. The data is available for download from the BGS website and will be available via the BGS Offshore GeoIndex.

Q: In what formats can the data be provided?

A: The dataset is provided as an ESRI® shapefile and two layerfiles. A geopackage with these files is also provided. More specialised formats may be available but may incur additional processing costs. Please email BGS Enquiries (enquiries@bgs.ac.uk) to request further information.

Q: I don't have a GIS. Can I still view the data?

A: Yes! The Offshore GeoIndex is a good place to start. It is an online data and GIS service that covers a wide range of marine geoscience research.

Q: Where can I learn more about a particular formation?

A: A BGS Lexicon code is provided for each formation. It is recommended that users visit the BGS Lexicon home page, where they can search for a particular code and view more information about its corresponding formation. A list of literature is provided with each code, which users can use to learn more about a specific formation.

Q: What does 'Quaternary undifferentiated' mean?

A: In the original mapping, areas where there was insufficient data available to assign formations may have been described as 'undifferentiated'.

Q: Why are there some abrupt changes in geology between map sheets?

A: Several mismatched boundaries between neighbouring map sheets are clear when viewing the data together in its new format. These boundary inconsistencies relate back to when the original map sheets were created. This is because neighbouring maps would have been created at different times, with different underlying data and, potentially, different authors. The nomenclature assigned to formations on maps may also abruptly change across sheets. This is due to differences in the naming of formations across neighbouring regions.

Q: How often will this map be updated?

A: There are currently no plans to release an update of this specific dataset. We will, however, continue to release separate datasets and reports that provide important knowledge about the Quaternary geology of the UK offshore.

Q: Can I use this map as part of a commercial application?

A: Please refer to the licencing terms supplied alongside the dataset. For further queries regarding the licencing terms of our products, please contact BGS Digital Data (digitaldata@bgs.ac.uk).

Q: I think the geology map might be wrong. What can I do?

A: We have made every effort to ensure this dataset reflects the information displayed on the original 1:250 000 offshore Quaternary geology map sheets. If you think you have spotted a problem with our datasets, please let us know (digitaldata@bgs.ac.uk).

Glossary

Jargon	Explanation
Attribute	Named property of an entity. Descriptive information about features or elements of a database. For a database feature like census tract, attributes might include many demographic facts including total population, average income and age. In statistical parlance, an attribute is a variable, whereas the database feature represents an observation of the variable.
Bedrock	The main mass of rocks forming the Earth, laid down prior to 2.588 million years ago. Present everywhere, whether exposed at the surface in rocky outcrops or concealed beneath superficial deposits, artificial ground or water. Formerly called 'solid'.
Biostratigraphical data	Data that can provide information about the age of a rock or sediment by analysing fossils.
Epoch	Geological unit of time during which a rock series is deposited. It is a subdivision of a geological period.
ESRI	Environmental Systems Research Institute (ESRI) is an international supplier of geographic information system (GIS) software, web GIS and geodatabase management applications.
Formation	A mappable body or unit of rock or sediment that has a distinct lithology.
Geophysical data	Data that has been acquired by recording and analysing measurements of the Earth's physical properties, such as electrical, gravity, magnetic, radioactivity and seismic properties.
Georeference	Digitally placing a piece of data, such as a map image, into its correct location on the Earth's surface
Geospatial data	Data that has a geographical component to it. This means that the records in a dataset have location information directly linked to them, such as geographical coordinates, address, city or postcode.
Lexicon	Vocabulary defining rock names, the BGS Lexicon of Named Rock Units (https://www.bgs.ac.uk/lexicon/home.html) database provides BGS definitions of terms that appear on our maps and in our publications.
Lithology	Rocks maybe defined in terms of their general characteristics of appearance: for example, colour, texture and composition. Some lithologies may require a microscopic or chemical analysis for the latter to be fully determined.

Jargon	Explanation
Lithostratigraphy	Age and lithology. Many rocks are deposited in layers (‘strata’) and the sequence of these strata can be correlated from place to place. These sequences of different rock types are used to establish the changing geological conditions or the geological history of the area over time. The description, definition and naming of these layered or stratified rock sequences is termed lithostratigraphy (rock stratigraphy). Lithostratigraphy is fundamental to most geological studies. Rock units are described using their gross compositional or lithological characteristics and named according to their perceived rank (order) in a formal hierarchy: Bed (lowest) > Member > Formation > Subgroup > Group > Supergroup (highest). The units are usually named after a geographical locality, typically the place where exposures were first described.
Marine isotope stage	Warm or cold periods in the Earth’s history that are identified using chemical isotopes within marine sediments and fossils. Each stage is numbered, starting with 1 as the most recent. Odd numbers represent warm periods and even numbers represent cold periods.
Period	Geological unit of time during which a rock series is deposited. It is a subdivision of a geological era.
Polygon	Polygons are a representation of areas. A polygon is defined as a closed line or perimeter completely enclosing a contiguous space and is made up of one or more links.
Quaternary	The name of the geological time period covering the most recent 2.5 million years (approximately) of the Earth’s history.
Scale	The relationship between the dimensions of features on a map and the geographical objects they represent on the Earth, commonly expressed as a fraction or a ratio. A map scale of 1/250 000 or 1:250 000 means that one unit of measure on the map equals 250 000 units on the surface of the Earth.
Sediments	Mud, sand, gravel, boulders, bioclastic material (shells; plants) and other matter carried and deposited by water, wind or ice.
Seismic data	A geophysical data type that uses generated sound waves that penetrate deep into the Earth. These are reflected back from geological layers and are recorded by receivers. The time it takes for a reflected wave to be recorded is related to the depth of the layer that reflected it back to the surface.
Seismic-to-borehole tie	A process where seismic data that is recorded in time units (for example, seconds) is matched to data from boreholes that is recorded in depth units (for example, metres). Information about the speed at which sound waves have passed through the Earth is required to complete this process. Once completed, information from the borehole can be correlated across the subsurface using the seismic data.

Jargon	Explanation
Shapefile	A geospatial vector data format for geographical information system software. It is developed and regulated by ESRI® as a mostly open specification for data interoperability among ESRI® and other GIS software products.
Stage	Geological unit of time during which a rock series is deposited. It is a subdivision of a geological epoch.
Vector	A representation of the spatial extent of geographical features using geometric elements (such as point, curve or surface) in a coordinate space.
Velocity	The speed at which sound waves travel through the Earth's subsurface.

References

BGS holds most of the listed references and copies may be obtained via the library service, subject to copyright legislation (contact libuser@bgs.ac.uk for details). The library catalogue is available at https://ukrinerc.on.worldcat.org/discovery

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Appendix 1 – GIS Colour Symbology

Lex Code	Red	Green	Blue	HEX	Looks Like
AIS	201	255	0	#C9FF00	
ALK	224	148	117	#E09475	
ANG	176	84	117	#B05475	
ANNE	255	255	148	#FFFF94	
AUR	224	117	255	#E075FF	
BANKS	201	224	237	#C9E0ED	
BARA	237	255	201	#EDFFC9	
BARD	224	176	255	#E0B0FF	
BATV	255	148	0	#FF9400	
BNB	148	201	255	#94C9FF	
BOCT	255	237	54	#FFED36	
BSBK	201	255	255	#C9FFFF	
CAER	176	84	148	#B05494	
CANA	255	201	201	#FFC9C9	
CAOL	237	224	176	#EDE0B0	
CATR	255	255	224	#FFFFE0	
CBAY	54	176	176	#36B0B0	
CLBK	148	201	201	#94C9C9	
CONA	224	176	54	#E0B036	
CONCH	224	148	54	#E09436	
COP	201	224	255	#C9E0FF	
CSO	117	237	255	#75EDFF	
DBNK	176	201	176	#B0C9B0	
EE	255	224	201	#FFE0C9	
EG	237	176	84	#EDB054	
ELSP	117	176	54	#75B036	
FD	237	237	224	#EDEDE0	
FH	255	255	117	#FFFF75	
FHA	255	255	176	#FFFFB0	
FHG	255	255	84	#FFFF54	
FION	117	176	84	#75B054	
FIS	237	176	255	#EDB0FF	
FLG	255	176	84	#FFB054	
FLOR	148	176	117	#94B075	
FONA	117	255	176	#75FFB0	
FSC	237	201	255	#EDC9FF	
GWA	237	201	148	#EDC994	
HIDO	255	176	54	#FFB036	
IJ	224	224	148	#E0E094	
IVR	255	176	117	#FFB075	
JEA	176	237	176	#B0EDB0	
JUR	237	237	84	#EDED54	
KR	117	148	176	#7594B0	

Lex Code	Red	Green	Blue	HEX	Looks Like
KSE	237	255	84	#EDFF54	
MACA	255	224	176	#FFE0B0	
MALN	54	201	201	#36C9C9	
MAR	224	255	201	#E0FFC9	
MDON	255	224	84	#FFE054	
MKMH	255	148	148	#FF9494	
MKY	237	224	201	#EDE0C9	
MORAG	237	255	148	#EDFF94	
MRN	201	117	176	#C975B0	
MRY	84	201	54	#54C936	
N/A	255	237	237	#FFEDED	
NT	201	224	176	#C9E0B0	
OIS	176	255	224	#B0FFE0	
OSP	237	148	176	#ED94B0	
OTBK	201	237	117	#C9ED75	
PE	201	237	176	#C9EDB0	
PQU	201	201	201	#C9C9C9	
Q1DU	255	117	84	#FF7554	
RCG	224	0	237	#E000ED	
SBB	176	201	148	#B0C994	
SHEE	255	237	201	#FFEDC9	
SHLE	255	117	54	#FF7536	
SHN	201	201	237	#C9C9ED	
SK	237	201	117	#EDC975	
SPE	148	176	201	#94B0C9	
STAN	117	201	237	#75C9ED	
STBK	237	148	0	#ED9400	
STGE	201	255	201	#C9FFC9	
SURF	255	255	201	#FFFFC9	
SWBK	224	224	84	#E0E054	
SWT	201	237	201	#C9EDC9	
TAM	201	255	176	#C9FFB0	
TN	224	237	224	#E0EDE0	
ULOD	255	148	117	#FF9475	
UMOR	224	148	176	#E094B0	
UUP	237	237	201	#EDEDC9	
VKB	255	148	84	#FF9454	
VOLAN	148	201	176	#94C9B0	
WBA	148	224	176	#94E0B0	
WELG	224	176	201	#E0B0C9	
WGD	201	201	84	#C9C954	
WIRS	176	54	0	#B03600	
WK	224	148	0	#E09400	
WN	255	176	176	#FFB0B0	
WTR	201	148	84	#C99454	
YM	255	148	176	#FF94B0	