British Geological Survey

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BGS Information Note

Mining Hazard hex-grid data

Introduction to hexagon grids

Hex-grids are an alternative method of displaying and visualising spatial data and allow a statistical analysis of often complex datasets. BGS have developed a series of hex-gridded datasets based on their geohazard and geological property data to provide users with an easy to view visualisation, available under an open government licence. The hexagon grids are intended to provide a generalised regional to national scale overview of information. They enable to user to perform a quick assessment before more detailed studies or investigations are planned. Hex-grid versions are currently available for the following datasets:

- Mining hazard (not including coal)
- GeoSure, including:
  - Slope stability (landslides)
  - Shrink swell potential
  - Running sand
  - Soluble ground (dissolution)
  - Compressible deposits
  - Collapsible deposits

What the data shows

This dataset provides a generalised overview of the likelihood for mining to have occurred. It provides a national-scale summary of the presence of mining and an indication of the level of hazard associated with old workings. The data has been generalised from the BGS Mining Hazard (not including coal) dataset. This additional detailed dataset (see www.bgs.ac.uk/datasets/mining-hazard-not-including-coal-coverage/) is also available to licence and provides further detail (see example below) as well as information on the type of commodity extracted, mine names, and any additional details, where available at a scale of 1:50 000.

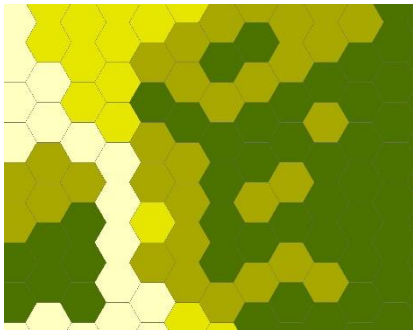
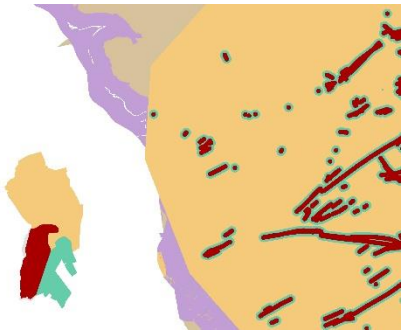
a)  b) 

Figure 1: a) generalised hexagon-gridded data; b) full detailed dataset available to licence

The data has been generalised into a vector map of interlocking hexagon cells, side length 1km, area approximately 2.6 Km^2.

There are 4 classes included within the data, as described in the table below.

Class	Legend
Significant	Underground mining is known or considered likely to have occurred in the area.
Moderate	Small scale underground mining may have occurred in the area.
Low	Localised small-scale mining may have occurred in the area.
NA	No known record of mining activity.

How the data was generalised

The data are derived by spatially summarizing the information held in the 1: 50 000 scale mining hazard (not including coal) dataset. The original five classes have been rationalised to three ensuring that small scale mining features are not underestimated in the generalisation process.

Spatial statistics are used to determine the highest class present in the hexagon area. Each hexagon cell was then attributed with the highest class identified within the cell.

Limitations

- Data has been generalised to 1km^2 hexagon grid, it must not therefore be used at larger scales.
- Observations made in the production of the underlying source data are according to the prevailing understanding of the subject at the time. Subsequent advances in knowledge, improved interpretation methods and new information sources have not been included.
- Summarising via spatial statistics may lead to under or over estimation of the extent of a hazard.
- Conversion to a hexagon grid generalises the data altering perception of the spatial distribution. Results of any analysis and subsequent interpretation should be viewed with care.
- Comparison with the underlying source data will reveal variations due to the

generalisation process applied.

Licencing

To encourage the use and re-use of this data we have made it available under the Open Government Licence www.nationalarchives.gov.uk/doc/open-government-licence/version/3/, subject to the following acknowledgement accompanying the reproduced BGS materials: "Contains British Geological Survey materials ©NERC [year]".

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- Map viewers
- Apps
- Map data downloads
- Web services
- Photos and images
- Publications
- Scanned records
- Data collections
- Software

Please refer to OpenGeoscience, see www.bgs.ac.uk/Opengeoscience for more information and a full listing of datasets and services available under this service.

Further information

For more information about mining hazards (not including coal) please see the BGS webpages: www.bgs.ac.uk/datasets/mining-hazard-not-including-coal-coverage/

Technical Information

The Mining Hazard Hex-grid dataset produced for use at approximately 1:1 000 000 scale providing 1km ground resolution.

Coverage

Data is provided for Great Britain.

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