



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



www.bgs.ac.uk

WELCOME TO BGS MURCHISON HOUSE





Dr Martin Smith, Chief Geologist, Scotland

Introduction: aims

- **raise awareness of BGS activities based in Scotland**
- **to highlight why geoscience data inputs to strategic planning and policy**



What is BGS?

- **Public Sector Research Establishment under the parent body NERC, created by Geological Survey Act of 1845**
- **Mission: to advance geoscientific knowledge by survey and research**
 - to provide professional, expert and impartial advice**
 - to disseminate information**
- **BGS is a Public Records Office and National Archive (fossil & mineral collections, boreholes, records, maps, etc)**
- **Offices: Nottingham (HQ), Edinburgh, Belfast, Cardiff, (Exeter)**
- **BGS in Scotland staff complement = 207, of which 131 are scientific (incl. IT, records etc)**

Accreditations: BSI ISO9001, ISO14001; IIP; IFT; (ERMS)



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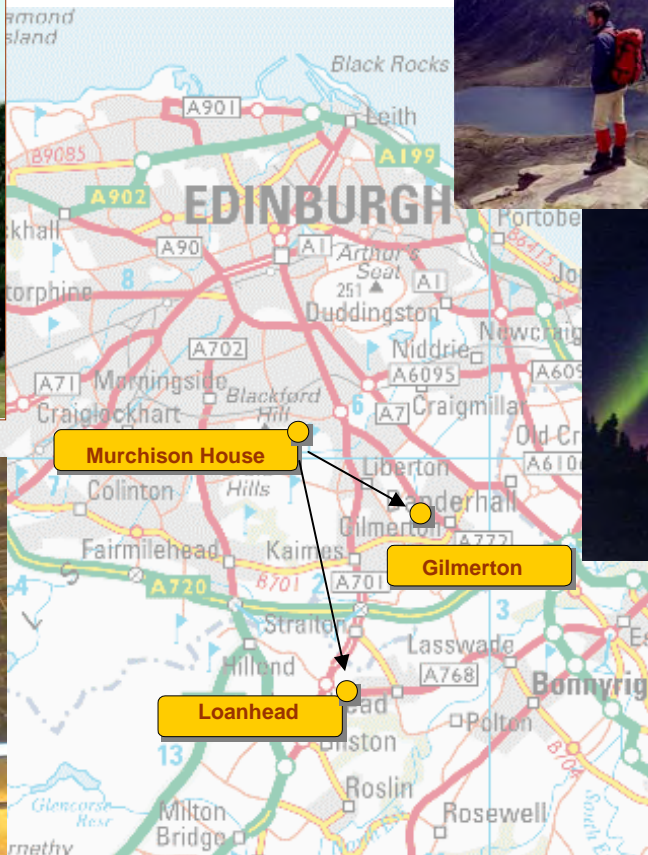


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BGS in Scotland



Murchison House

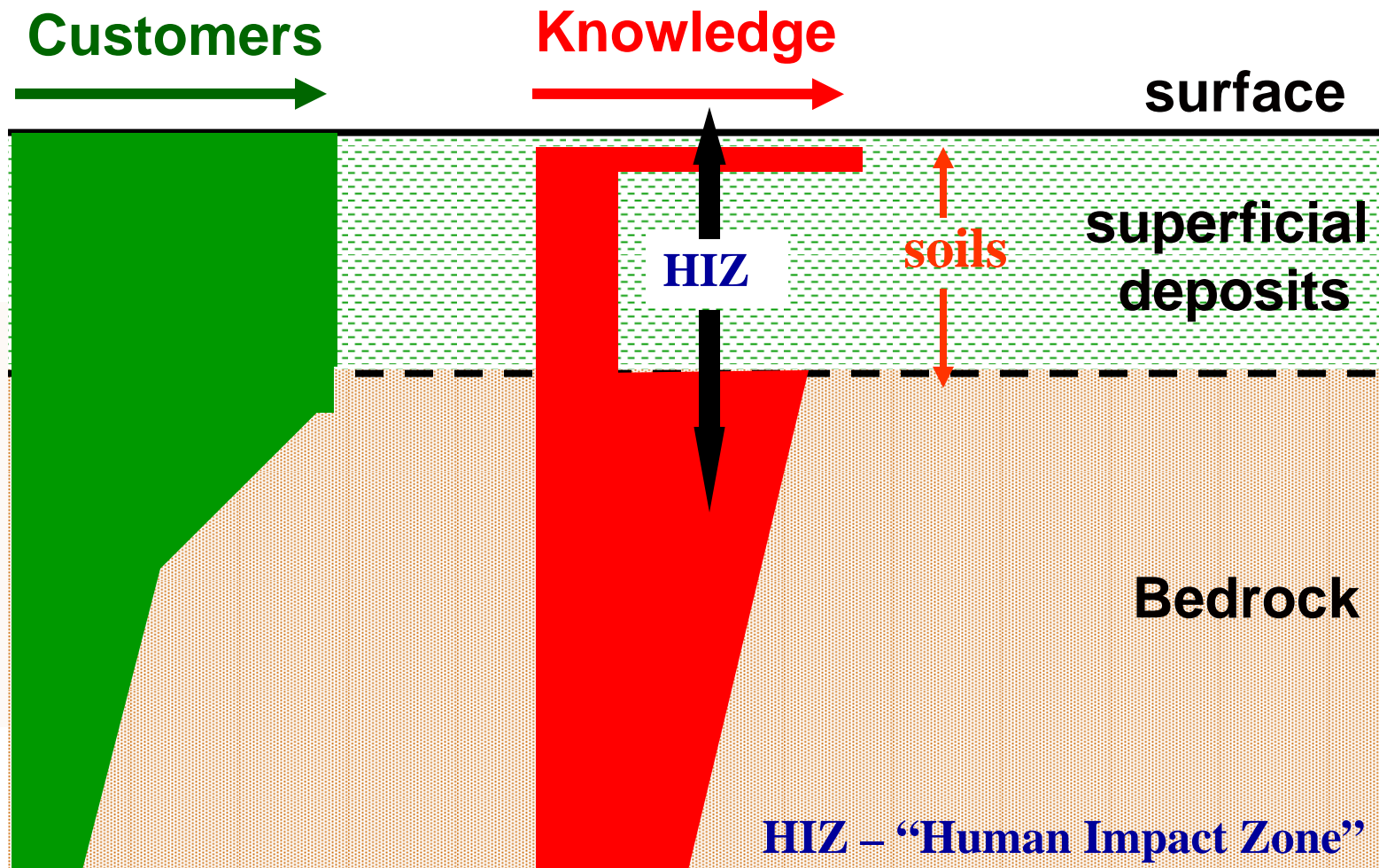


Gilmerton





2005-2010 Programme: filling the 'knowledge gap'





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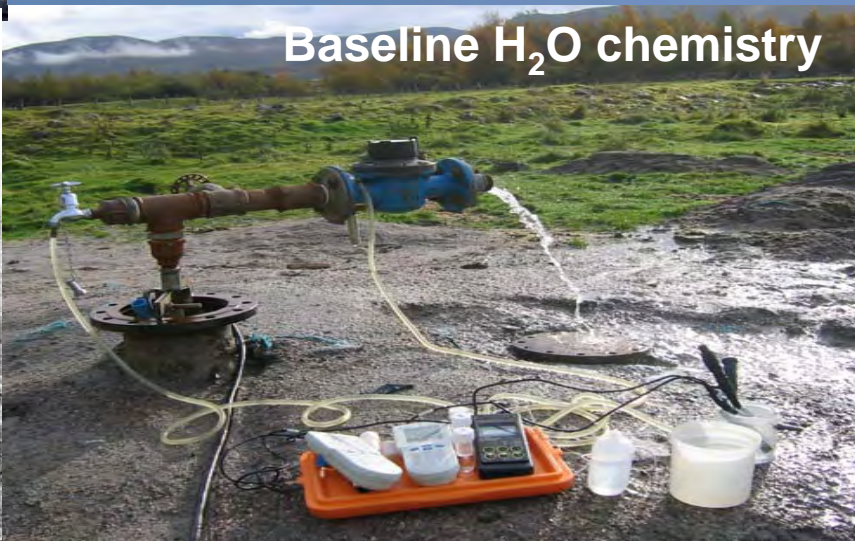
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Brownfield assessment

UKAEA Dounreay

Environmental surveys



Glasgow, mining

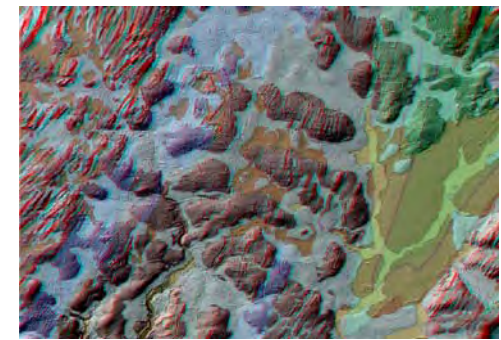
Baseline H₂O chemistry



Digital 'mapping' GIS-based workflow

Pre-fieldwork desk study *Existing geological mapping is digitised and overlain onto Digital Terrain Models and aerial photography. New interpretations are added and targets for field checking are identified*

Geological map draped on Digital Terrain Model, Central Wales



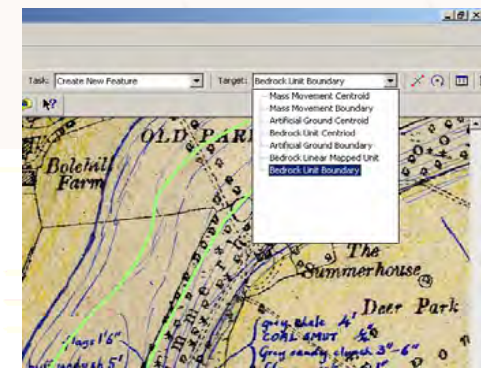
Digital field data collection *New field data is captured digitally using 'ruggedized' tablet computers, including refinements to the maps and more information on environmental hazards and resources*

Digital data capture in the field on tablet PC



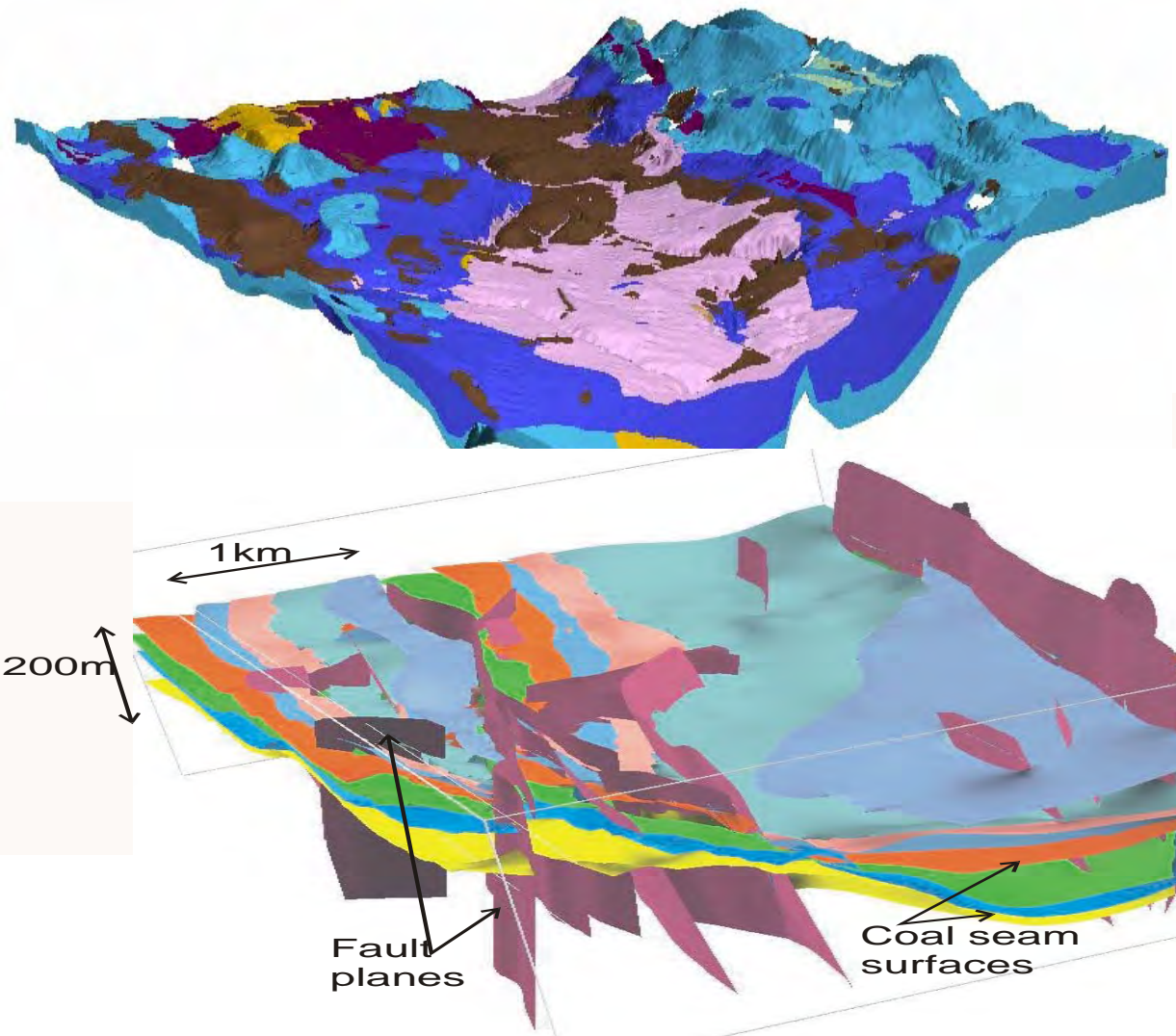
GIS compilation *The new geological interpretation is completed and validated using GIS software on desktop PCs. Printed maps and digital data showing hazard and resource-related themes are generated on demand from the GIS*

Digital geological map compilation, Sheffield





“LithoFrame UK” - the new ‘3D map’

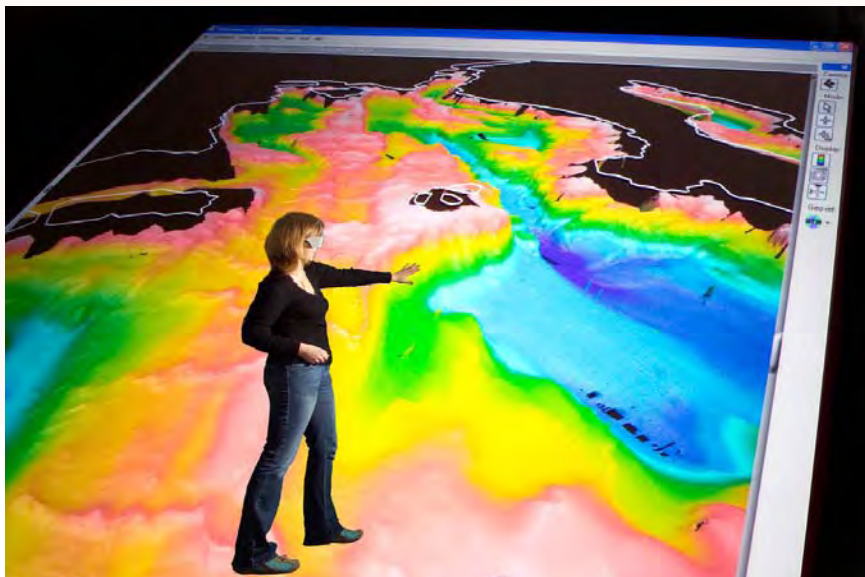


- New 3D geological models at local, regional & national scales
- Attributed with physical & chemical properties, environmental & resource information
- Will replace the paper geological map as the primary knowledge base for UK geology
- GIS-based multi-parameter data sets of land surface



3D visualisation

- Virtualis StereoWorks visualisation system one of the first in Europe
- 3D subsurface data models
 - tool for geoscience communication
 - for scientists, council planners, utility providers, landfill managers, minerals & energy industries





BGS interaction with Scottish Government

- **SEERAD: FMD, Nitrates, WFD, soils, geodiversity**
- **Tourism, Culture & Sport: Built Heritage**
- **Transport: Geohazards (landslides), geotechnics**
- **Planning: Minerals, National Planning Framework**
- **SE Agencies: SEPA, SNH, Historic Scotland, MLURI**
- **Local government: numerous, GCC**

Work mostly carried out on a contractual or co-funded basis as BGS receives no direct funding from SE