British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

The collaborative Soil App and advances in augmented reality visualization

Barry Rawlins, Wayne Shelley,

Rob Pedley & Russell Lawley

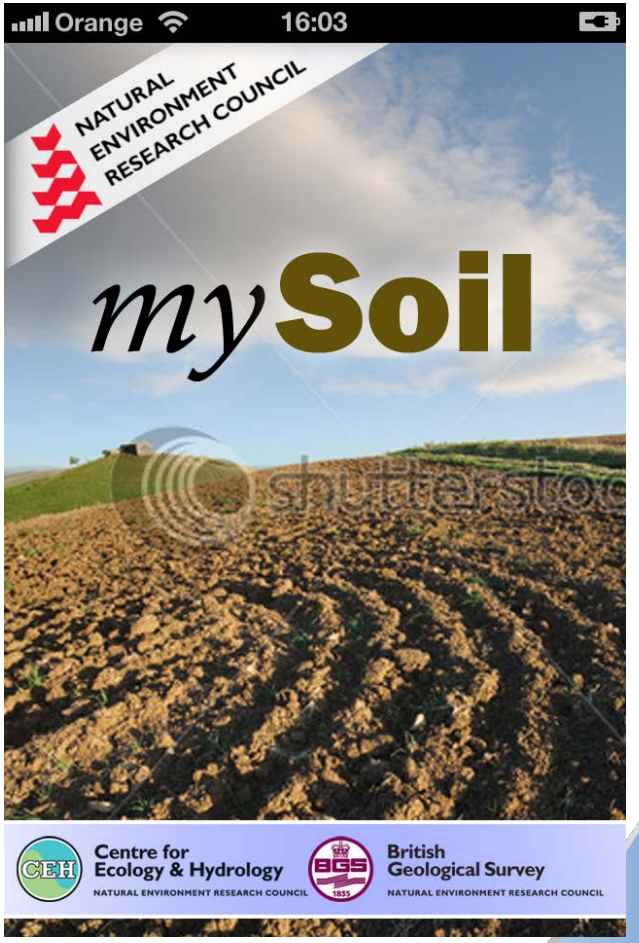
Soil Science, British Geological Survey

email: bgr@bgs.ac.uk

GSP Workshop, FAO Rome, 20-23 March 2012

Why develop a Soil App?

- Increased, portable access to soil data (land managers, researchers, policymakers)
- Large data providers: increased use of data
- Users easily add their own data
- Time-saving: identify questions based on local information
- Augmented reality – “paint a map onto the landscape”



Outline: Developing the Soil App

1. History: openGeoscience and the iGeology App
2. Developing a UK Soil App (NERC) - MySoil
3. An EU-wide Soil App (JRC)
4. A collaborative, global Soil App?
5. Augmented reality approaches

OpenGeoscience Initiative

- Free, open-access **web portal** providing geological information for personal use, research, education and restricted commercial uses
- Resources:
  - geological maps of Great Britain
  - > 50,000 geological images
  - access to databases, metadata, search tools
  - open research archive (papers and reports)
  - software
  - educational resources

How to enhance delivery? The iGeology App

iGeology App

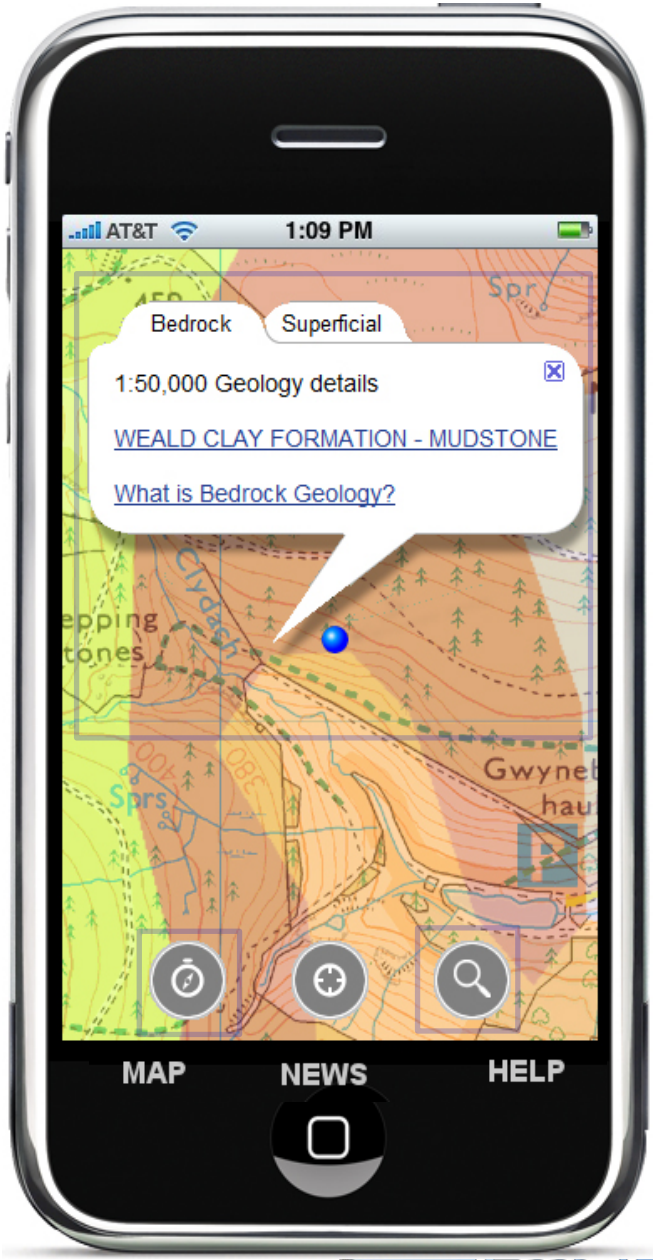
Geological survey: map dissemination via the web

2011: versatile GIS application, geology data direct to smartphones

"*Users explore rocks where they stand* " – tap to interrogate

Driven by interoperable web services. Self-service, web-based delivery mechanism

Formats: Android, iPhone, iPad

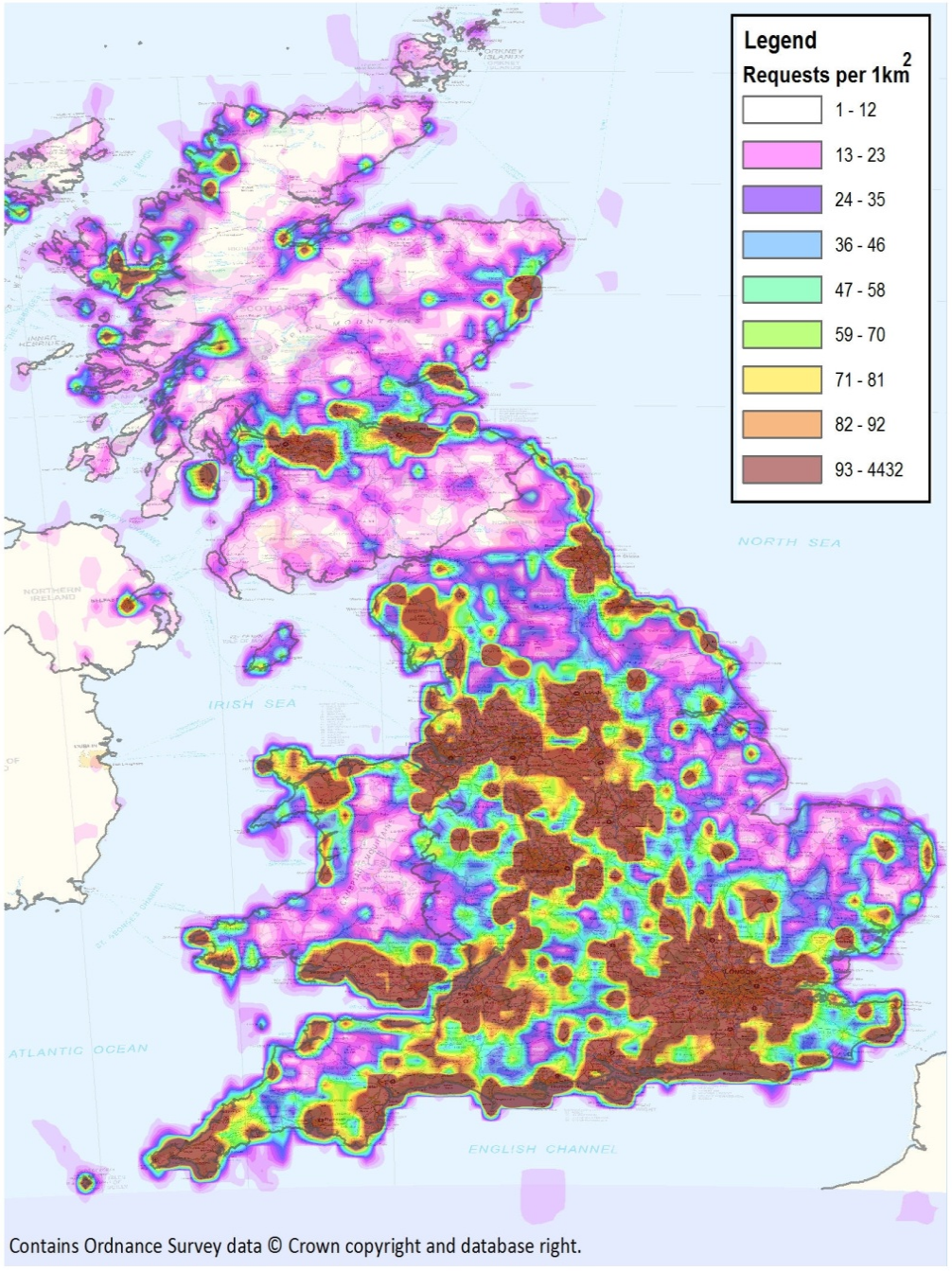


iGeology downloads:
70 000 in 2011,
56 countries

Allows providers to map user downloads

iGeology best Community Favourite Mobile App at ESRI International Conf (July 2011)

Users feedback



Access to NERC data – via the SoilApp

Two NERC institutes in the UK:
British Geological Survey
Centre for Ecology and Hydrology

Differing data on the UK landscape relating to soil properties

- parent material, soil geochemistry, soil texture
- Countryside survey (monitoring), land cover data

Combine data in a Soil Portal → Soil App

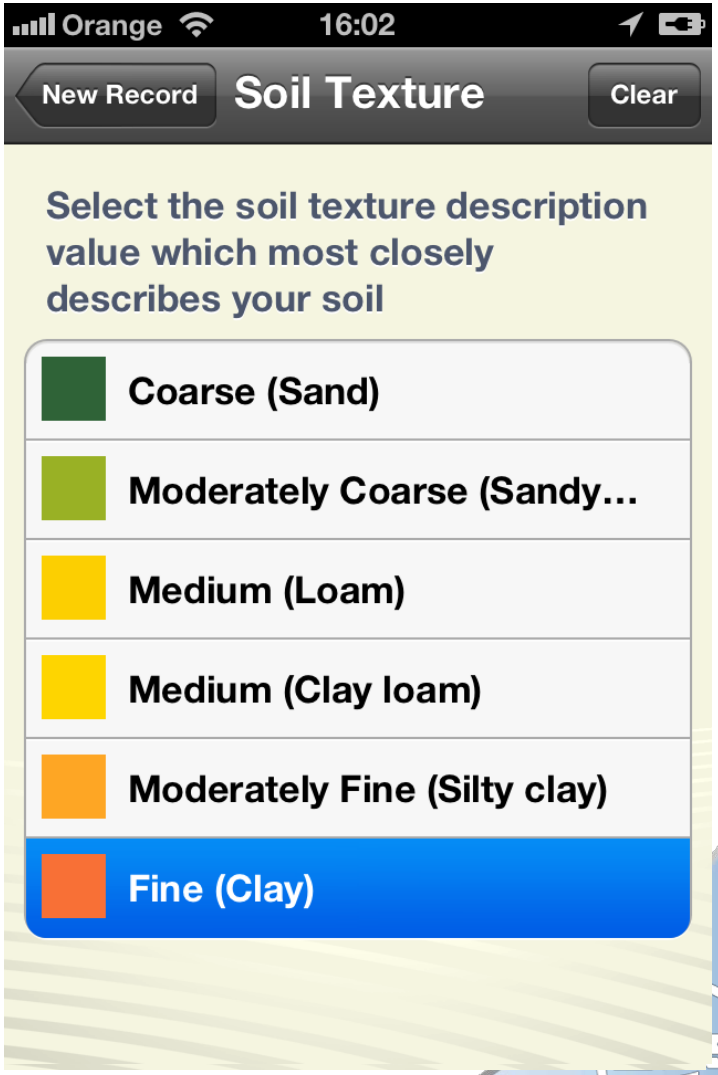
Addition of data directly by users: YourSoil an extra button on the Soil App

Major advantage of portable, GPS use

Upload data to the database

Images (soil profiles), observations (e.g. erosion) soil data (?) ...schools, land managers

Proliferation of soil information

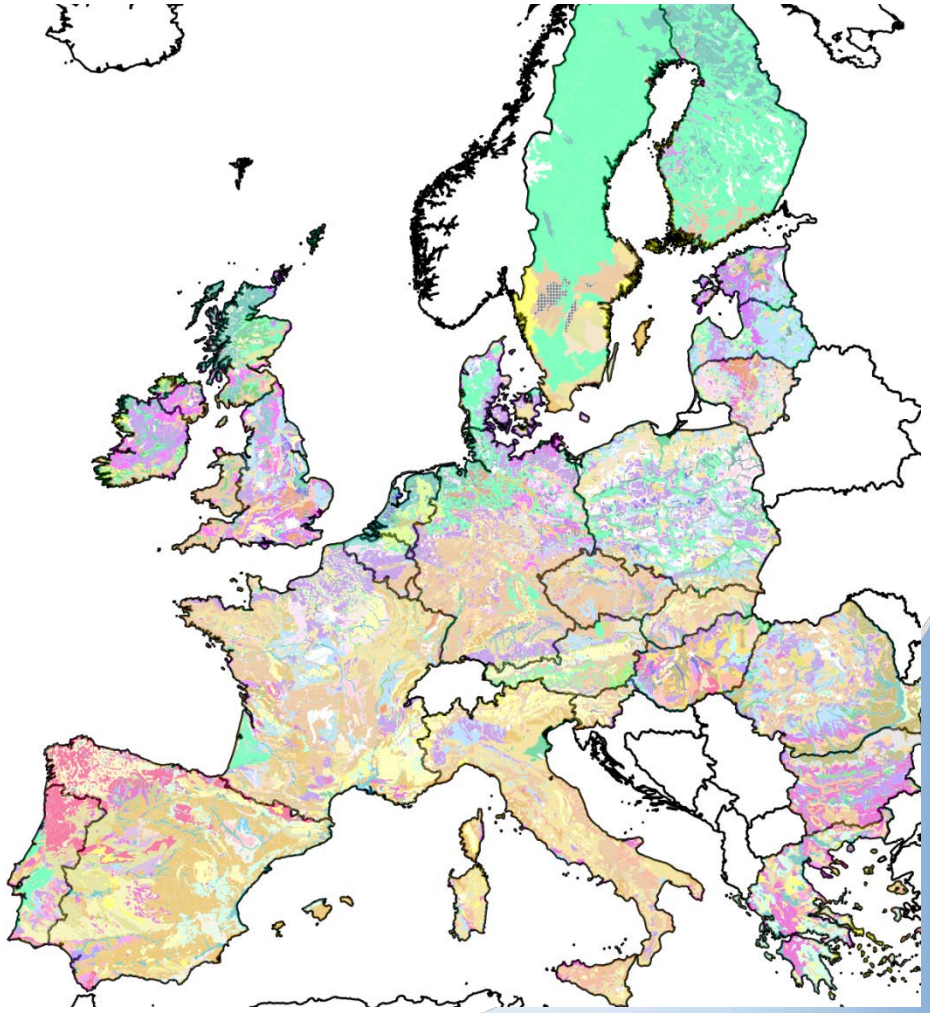


EU-wide Soil App developed with JRC

Aim: develop and deploy the App to display an interactive map of EU-wide soil data (smartphone & tablets)

Map & data resources from research centres using "web services"

iPhone and iPad initially, extend to smartphones (e.g. Android)



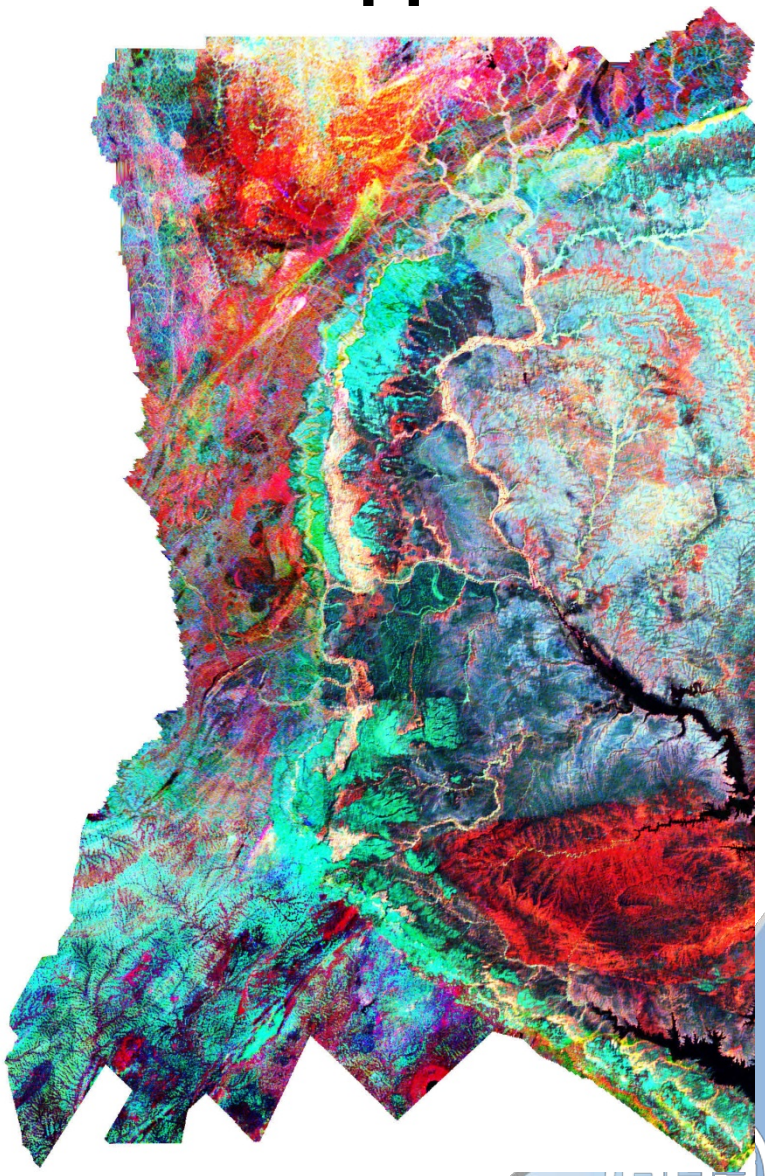
Developing a collaborative, global soil App

Objective: extend the App to deliver global soil data

Requirements: global partners

Applications: land managers /farmers have immediate access to soil-related data

Field access to data via ‘web-mapping services’ (e.g. radiometric data)



3-component airborne radiometric data of Ghana

‘Augmented reality’ for soil datasets

“hold up your smartphone device ....the soil map is painted onto the landscape in the viewfinder”
Immerse yourself in the data.

• being developed

•to be released iGeology App

• addition to the soil App

Summary

1. **Rapid development** - soil data more accessible
2. Development cost falling & **uptake increasing**
3. Immensely useful for **both public and specialists**
4. **Demonstrable uptake** of information and services (via iGeology)
5. **Openess and data required** – benefit to donors
6. Globalisation via collaboration

THANK YOU