



Counting Cows and Cabbages – Web-based extraction, delivery and discovery of geo-referenced data

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EDINA context

- A JISC-Funded National Data Centre for Tertiary Education set up in 1995
 - Based at the University of Edinburgh, Scotland
 - Offers the UK tertiary education and research community networked access to a library of data, information and research resources

EDINA context cont'd..

- Range of bibliographic resources
- Multimedia and image services
- Geo-spatial data and geo-referenced information:
 - **UKBORDERS** digitised boundary outlines
 - **Digimap** online OS mapping products
 - **agcensus** – online Agricultural census data
- Geo-related development projects - Go-Geo!, geoXwalk, e-MapScholar...

Agricultural Census background

- Conducted in June of each year in the UK since 1866
- Provides information on distribution and extent of crop & horticultural production and rearing of livestock.
- Indicator of regional change in agricultural activity over time.

Data collection

- Each farmer declares the agricultural activity on the land in June each year via a postal questionnaire
- DEFRA, SEERAD (& Welsh Assembly since 1999) collect > 150 items of data and publish information relating to farm holdings for recognised geographies

Problems with published data

- Data potentially disclosive
- Parishes vary considerably in shape & size
- Landuse & capability vary across parish
- Under- & over-reporting of agriculture in parish
- Livestock may be elsewhere
- “Snapshot” of activity on 1st June

Parish to grid

- Conversion algorithms developed by EUDL for grid square estimates
- Parish Framework defines each parish in terms of 1km grid squares
- Land-use Framework classifies 1km grid squares to land-use category
- 1km data still confidential – aggregation to 2km, 5km & 10km grid square estimates

Data uses

- Epidemiology / Public health
 - Pesticide effects on congenital 'small eye' syndrome
- Market research
- GIS modelling
- Environmental
 - Impact of sheep on heather coverage
 - Wind farm placement

Existing service....

- No online access
- Algorithms written in main frame era
- Fetching & delivering of data
 - Command-driven
 - 'manual'
 - reference interview via telephone/email
 - time consuming
- User expectations not matched

New EDINA agcensus

- EDINA online agcensus service offers agricultural census data to 3 client communities:
- Academic - subscription
- Commercial – price on request
- Policy makers – price on request

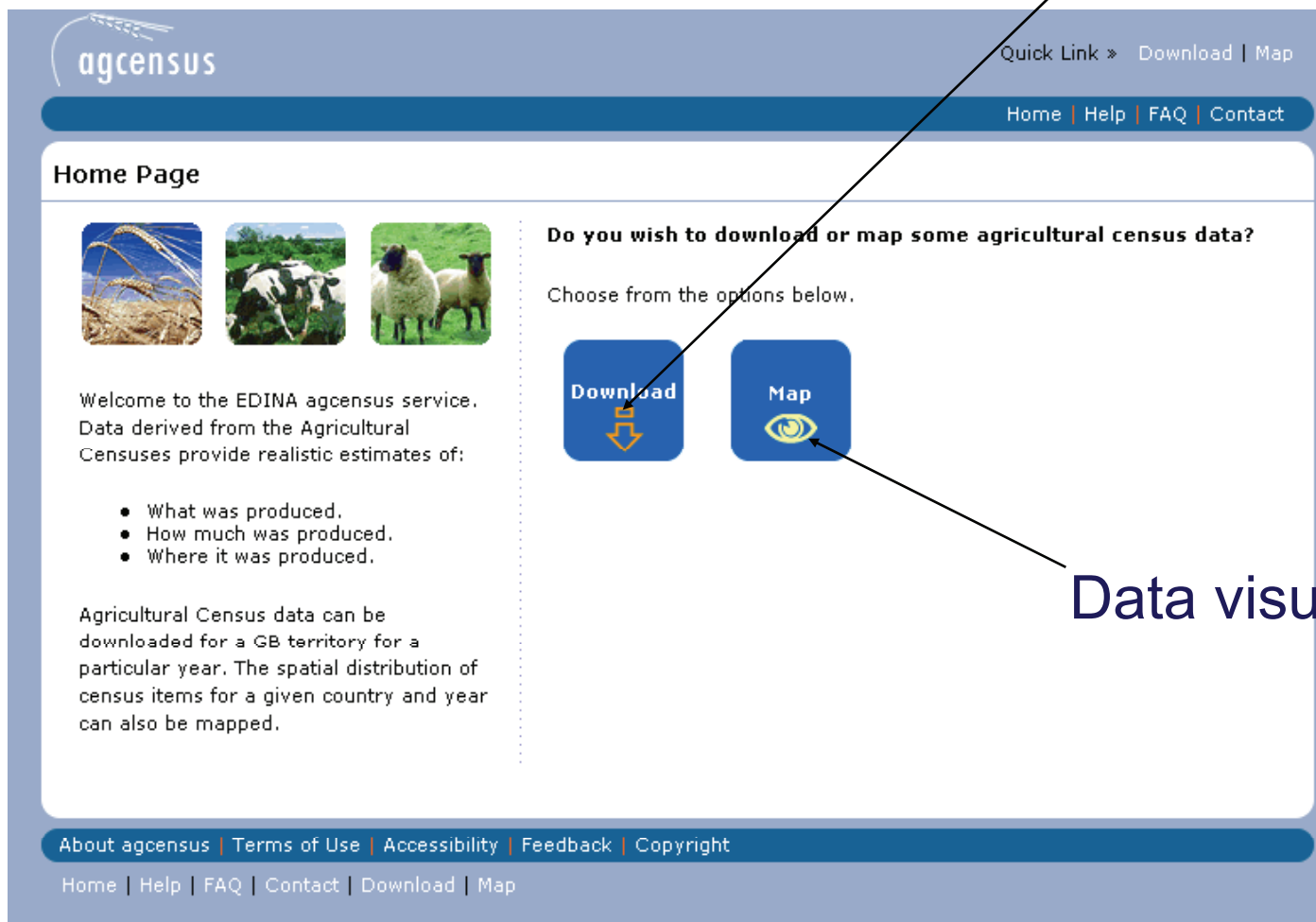
Technology

- Java-based interface and data processing algorithms
- Backend data stored in MYSQL database
- Data visualisation uses image generation Servlets

Problems encountered

- Alternate visualisation for maps (area selection)
- Accessibility issues
 - allowing both javascript & non-javascript equivalent functionality
- Fast access to data
 - storage versus 'on the fly' delivery

Data download






The screenshot shows the agcensus website home page. At the top left is the agcensus logo. At the top right, there are navigation links: "Quick Link » Download | Map", "Home | Help | FAQ | Contact". Below the navigation is a "Home Page" section. On the left, there are three small images: wheat, cows, and sheep. Below these images is a welcome message: "Welcome to the EDINA agcensus service. Data derived from the Agricultural Censuses provide realistic estimates of:" followed by a bulleted list: "• What was produced.", "• How much was produced.", "• Where it was produced." Below the list, it says: "Agricultural Census data can be downloaded for a GB territory for a particular year. The spatial distribution of census items for a given country and year can also be mapped." On the right side of the page, there is a section titled "Do you wish to download or map some agricultural census data?" with the instruction "Choose from the options below." Below this are two buttons: "Download" (with a download icon) and "Map" (with a map icon). At the bottom of the page, there are footer links: "About agcensus | Terms of Use | Accessibility | Feedback | Copyright" and "Home | Help | FAQ | Contact | Download | Map".

agcensus

Quick Link » Download | Map

Home | Help | FAQ | Contact

Home Page



Welcome to the EDINA agcensus service. Data derived from the Agricultural Censuses provide realistic estimates of:

- What was produced.
- How much was produced.
- Where it was produced.

Agricultural Census data can be downloaded for a GB territory for a particular year. The spatial distribution of census items for a given country and year can also be mapped.

Do you wish to download or map some agricultural census data?

Choose from the options below.

Download

Map

About agcensus | Terms of Use | Accessibility | Feedback | Copyright

Home | Help | FAQ | Contact | Download | Map

Data visualisation

7 Step data access procedure:

- Select country (Sco, Eng, Wal)
- Select year
- Select census item(s)
- Select grid size: 2km, 5km, 10km
- Selecting extent of data coverage
- Data selection summary
- Download or visualise selected data

Selecting extent of data coverage

Download: Step 5 of 7 [Country](#) » [Year\(s\)](#) » [Census Items](#) » [Grid Size](#) » **Extent** » [Summary](#) » [Download](#)

5. The values are set by default to the maximum extent of the country you have selected. If you only require a smaller area, set the coordinates by dragging a box on the map and continue.

Min X :

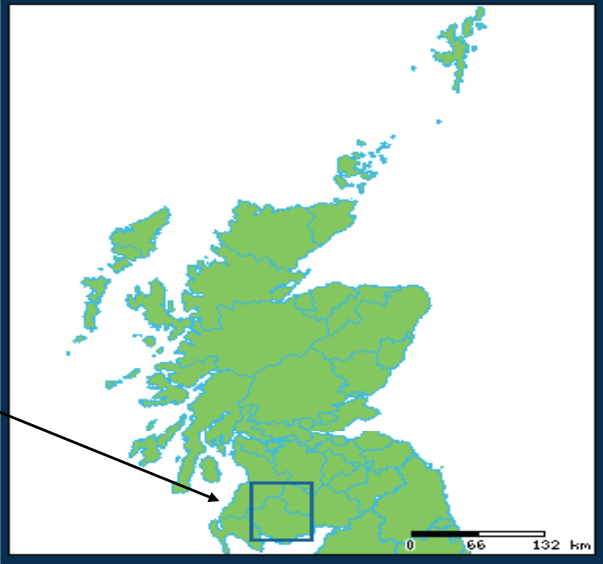
Min Y :

Max X :

Max Y :

Grid (20k):
 On
 Off

drag out a box and click continue



You have selected:

Country : Scotland
Year : 2000
Census Items : 4
Grid Size : 2k
Extent : -

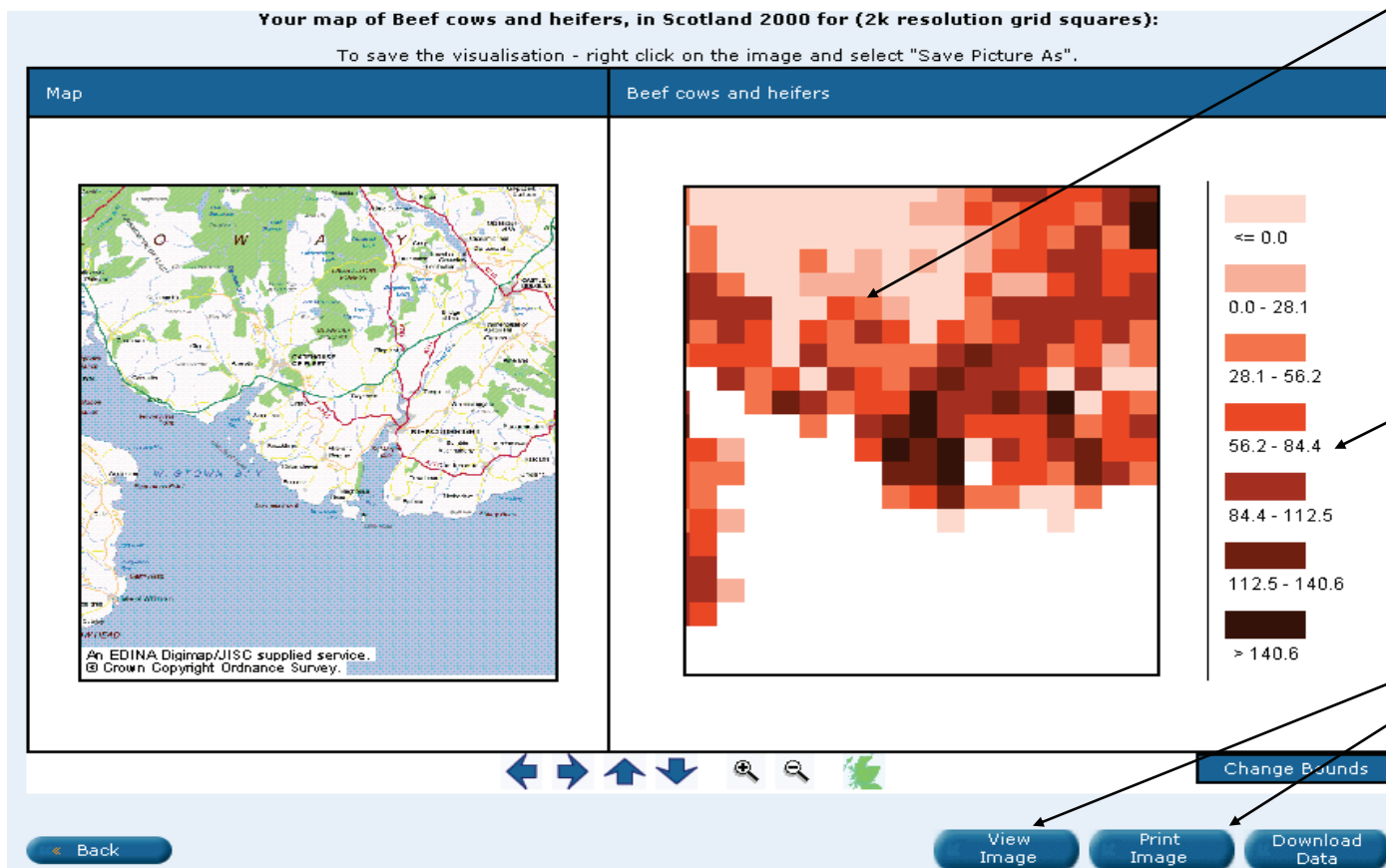
[Zoom](#) [Back](#) [Reset](#)

[Back](#) [Continue](#)

Extent tool for small area analysis

Step 7. Visualisation of data distribution at chosen resolution

Right-click to save image file



User defined legend

View or print image

Service issues

- Authentication (ATHENS)
- Documentation (QRGs, poster, handouts)
- Field Trialing (usability, feedback)
- Help/Metadata
- Subscription model
- Training/outreach
- User support

Future developments

- Visualising change over time
- Statistical reporting
- Ability to add 2 or more items together
- Teaching dataset
- Other visualisations (e.g. histograms, pie charts etc)

The bigger picture ...

How can UK academic geo-data users:

- find out about the **agcensus** data?
- find out what other geo-data exists within (and outwith) UK academia?
- ascertain quality and suitability?
- access data & find out how to use it?

Go-Geo! – Geographic Information Portal

- JISC-funded project - EDINA & UK Data Archive as partners
- to promote greater awareness of geo-spatial data created by UK academia within and without the wider UK GI community
 - part of the **UK GIgateway service** hosted at EDINA
- Goes beyond discovery to provide access to data

Metadata

- Central to such a service is metadata describing geo- referenced data
- Metadata originally used was modified NGDF standard
 - moved to ISO 19115 March 2003 which maps to Dublin Core



Metadata creator - Online Java-based metadata tool

Go-Geo!
Home > Metadata Creator

« Back | Main | New Record | Edit Record | View Profile | FAQ | Help | About | Nodes

What Where When Custodian Access

What

Title: *
Alternative Title: Go-Geo!
Creator: *
Identifier:
Edition: *
Topics: *
Keyword Source: *
Controlled Keyword:
Other Keyword:
Source Scale Denominator: *

Where

Spatial Reference System used for Bounding Rectangle

Co-ordinate System: *
Spatial Extent of a Dataset's Study Area based on Bounding Rectangle

North: * East: *
South: * West: *

Spatial Extent of a Dataset's Study Area based on Nation

Nation: Administrative Area

United Kingdom
England
Scotland
Wales

Postcode Districts:

All
AB, Aberdeen
AL, St Albans, Hertford
B, Birmingham

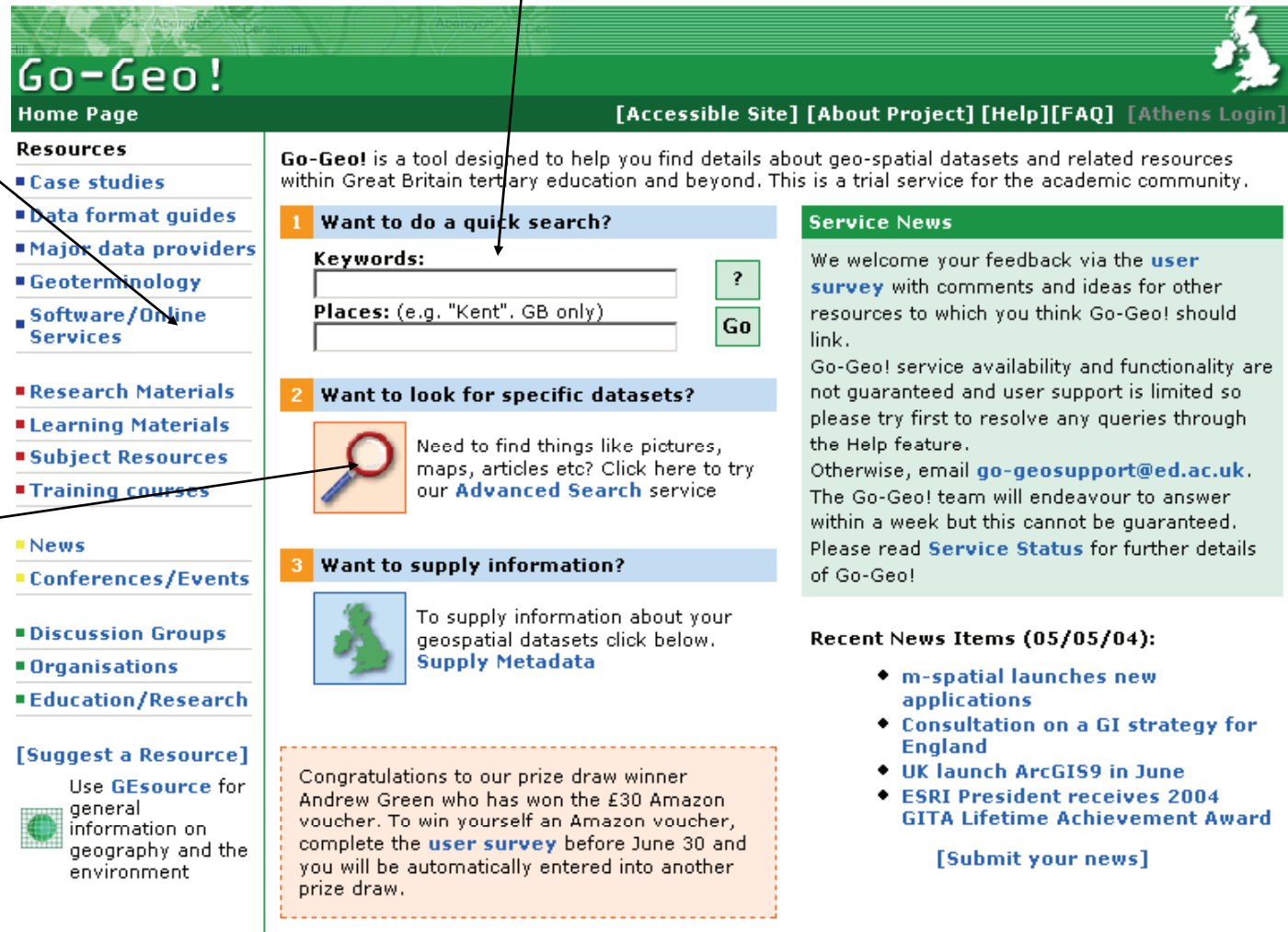
Spatial Reference System Using The Vertical Extent

Minimum Value: *
Maximum Value: *
Unit of Measure: *

```
<GooGeoMetadata>
<Title>Agricultural and Horticultural Census for England - Grid Square data</Title>
<AlternativeTitle>Agricultural Census of England</AlternativeTitle>
<Creator>Department of Environment, Food and Rural Affairs (DEFRA), formerly the Ministry of Agriculture, Fisheries and Food (MAFF)
</Creator>
<Identifier>EUDL_GRID_ageng</Identifier>
<Edition />
<Description>The Agricultural Census is collected in June each year in England (and in Scotland and Wales by the respective government
bodies). It provides information on the distribution and extent of crop production, rearing of livestock, and nature of farms. It can also be
used to give an indication on the regional change in agricultural activity over time. Data for England is released by DEFRA in aggregated grid
square format treated for disclosure where deemed necessary then converted to grid square format by Edinburgh University Data
Library using land use framework.</Description>
<Quality>Grid square data for England is based primarily on grid square data (received from the governmental department dealing with rural
activities) and treated for confidentiality. Agricultural Census items are distributed over 1km grid squares of suitable land use by
Edinburgh University Data Library. The use of 5km and 10km grid estimates are recommended if possible to minimise anomalies of using
1km data.</Quality>
<Language>English</Language>
<FurtherInformation>http://datalib.ed.ac.uk/EUDL/agriculture/</FurtherInformation>
<FurtherInformation>http://statistics.defra.gov.uk/esg/</FurtherInformation>
<FurtherInformation>http://www.scotland.gov.uk/about/ERAD/ESI/00015631/page407506847.aspx</FurtherInformation>
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<RelatedDataset>Agricultural and Horticultural Census for Scotland - Grid Square data</RelatedDataset>
<RelatedDataset>Agricultural and Horticultural Census for Wales - Grid Square data</RelatedDataset>
<SpatialReferenceSystemOfDatasetbyCoordinates>British National Grid</SpatialReferenceSystemOfDatasetbyCoordinates>
<LevelOfSpatialDetail>Grid data available at 2km, 5km, 10km and 50km level of aggregation</LevelOfSpatialDetail>
<StatusoftheStartingDateforDataCapture>Known</StatusoftheStartingDateforDataCapture>
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<NameofCustodian>EDINA agcensus</NameofCustodian>
<PostalStreetAddressofCustodian>Edinburgh University Data Library, Main Library Building, George Square,
Edinburgh</PostalStreetAddressofCustodian>
<PostalCodeofCustodian>EH8 9LJ</PostalCodeofCustodian>
<TelephoneNumberOfCustodian>0131 650 3302</TelephoneNumberOfCustodian>
<FacsimileNumberOfCustodian>0131 650 3308</FacsimileNumberOfCustodian>
```

Resources

Simple search



Go-Geo!
Home Page [Accessible Site] [About Project] [Help][FAQ] [Athens Login]

Resources

- Case studies
- Data format guides
- Major data providers
- Geotermiology
- Software/Online Services

Research Materials

- Learning Materials
- Subject Resources
- Training courses

News

- Conferences/Events

Discussion Groups

- Organisations
- Education/Research

[Suggest a Resource]
Use **GEsource** for general information on geography and the environment


Go-Geo! is a tool designed to help you find details about geo-spatial datasets and related resources within Great Britain tertiary education and beyond. This is a trial service for the academic community.

1 Want to do a quick search?


Keywords: ?

Places: (e.g. "Kent", GB only) Go

2 Want to look for specific datasets?

 Need to find things like pictures, maps, articles etc? Click here to try our **Advanced Search** service

3 Want to supply information?

 To supply information about your geospatial datasets click below.
Supply Metadata

Service News

We welcome your feedback via the **user survey** with comments and ideas for other resources to which you think Go-Geo! should link.

Go-Geo! service availability and functionality are not guaranteed and user support is limited so please try first to resolve any queries through the Help feature.

Otherwise, email go-geosupport@ed.ac.uk. The Go-Geo! team will endeavour to answer within a week but this cannot be guaranteed. Please read **Service Status** for further details of Go-Geo!

Recent News Items (05/05/04):

- ◆ **m-spatial launches new applications**
- ◆ **Consultation on a GI strategy for England**
- ◆ **UK launch ArcGIS9 in June**
- ◆ **ESRI President receives 2004 GITA Lifetime Achievement Award**

[Submit your news]

Congratulations to our prize draw winner Andrew Green who has won the £30 Amazon voucher. To win yourself an Amazon voucher, complete the **user survey before June 30 and you will be automatically entered into another prize draw.**

Advanced search

Advanced searching

- Data type
- Location
- Text
- Date range
- Summary

Map browser

Advanced Search [Home Page] [Back] [Help]

Data Type | Location | Text | Date Range | **Summary**

[Advanced search help here.](#)
Supply a placename or coordinates to search for in this section.

Do NOT search based on location

Limit search by Place name
Find: [Geographically expand?](#)


Limit search by Geographic Area

Geographic Location:
 England
 Scotland
 Wales

County and/or Unitary Authority:

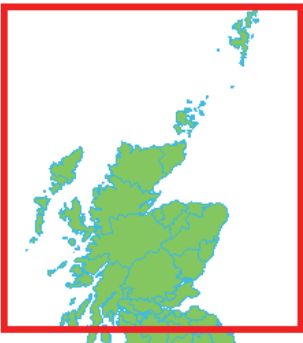

Limit search by National Grid coordinates

Easting: Northing:

 [Map Browser](#)

Sample record

Record 1 of 35

What	When	Where	Who	Access	Record Creator
<p>GI Gateway Catalogue Agricultural Census</p> <p><i>What</i></p> <p>Title: Agricultural Census</p> <p>Alternative Title:</p> <p>Creator: Scottish Executive</p> <p>Identifier:</p> <p>Edition:</p> <p>Topic:</p> <p>Controlled Vocabulary: NGDF Keywords</p> <p>Controlled Keywords: Agriculture/Farming</p> <p>Other Keywords:</p> <p>Controlled Place Name Vocabulary: NGDF Placenames</p> <p>Controlled Place Name Keywords: Scotland</p> <p>Description: Yearly Census of Agricultural Activity</p> <p>Quality:</p> <p>Language:</p> <p>Further Information:</p> <p>Related Datasets:</p> <p>Spatial Reference System:</p> <p>Co-ordinate System: British National Grid</p> <p>Geographic Identifiers:</p> <p>Level of Spatial Detail:</p>					
<p>Agricultural Census</p> <p><i>Where</i></p> <p>Spatial Referencing Using Geographic Co-ordinates:</p> <p>System of Spatial Referencing by Co-ordinates: British National Grid</p> <p>West Bounding Co-ordinate: NG: 15075 Lat/Long: -8.0977</p> <p>East Bounding Co-ordinate: NG: 470336 Lat/Long: -0.7052</p> <p>North Bounding Co-ordinate: NG: 1220423 Lat/Long: 60.8599</p> <p>South Bounding Co-ordinate: NG: 639997 Lat/Long: 55.5010</p> <p>Spatial Referencing Using the Co-ordinates of a Bounding Polygon:</p> <p>Spatial Referencing by Geographic Identifiers:</p> <p>Nations:</p> <p>Administrative Areas: Scotland</p> <p>Postcode Districts:</p> <p><i>Map</i></p>  					

Geo-X-Walk gazetteer project

- Z39.50 compliant digital GB & Irish gazetteer service
 - Support geo-searching within the JISC-IE
 - Provide researchers & teachers with online reference tool
- Gazetteer will contain more than just placenames, grid references etc – will also classify features into types:
 - Settlements as areas, rivers as lines etc
 - Stores geo-spatial 'footprint' against each feature
 - Geo-searching transparent by 'cross-walking' different geography types – introducing proximity/distance into search strategies

Geo-X-Walk cont'd..

- Geo-parser – software that ‘reads’ a document/resource that contains placenames & automatically identifies their occurrence
- Identified placename can be compared against gazetteer entries which means access to ‘alternate’ geographies
 - Provides means to assign geo-tag (e.g. grid ref.) to implicit geo-referenced material (e.g. placename)
- Combination of parser & digital gazetteer has potential for powerful geographic-based searching across a range of otherwise disparate resources

E-MapScholar

- A learning and teaching project to develop tools that enhance and support the use of geo-spatial data
 - Case studies
 - Online L&T materials
 - Teaching content management system
 - Virtual work placement

Summary

- The new EDINA agcensus service provides online access to grid square estimated agricultural census data at various resolutions, for three UK territories, from 1969 to the present day.
- Such a resource forms part of a 'common geographic framework' which allows diverse geo-referenced data and resources to be 'cross-walked' and ultimately utilised.



agcensus:

<http://edina.ed.ac.uk/agcensus>

Go-Geo!:

<http://www.gogeo.ac.uk/>

E-MapScholar:

<http://edina.ed.ac.uk/projects/mapscholar/index.html>

Geo-X-walk:

<http://hds.essex.ac.uk/geo-X-walk/>