Scotland’s People in Time and Space

Geography and the work of the General Register Office for Scotland

Duncan Macniven
Registrar General for Scotland
The work of GROS

• Registering births, deaths, marriages etc
• Taking the decennial census
• Using these and other sources to publish demographic statistics
• Using these and other sources for family history
An Act to provide for the better Registration of Births, Deaths and Marriages in Scotland, 1854

WHERAS it is expedient that a complete and uniform System of Registration of Births, Deaths, and Marriages should be established and maintained in Scotland: Be it enacted by the Queen's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, as follows:
Sir,

In conformity with your Instructions, I beg to submit the following Report:—

Scotland is of an extremely irregular figure, and its Mainland is so broken up by promontories, and indented by bays or friths, that, even at its most solid part, there are very few points which are above 40 miles distant from some part of the sea, and a much greater portion of the solid land lies within 30 miles of salt water. The surface also of Scotland, unlike that of England, is, generally speaking, rugged and mountainous, and most of it so unfitted for the purposes of agriculture, that it may be questioned whether more than a third of its surface could be rendered arable. Scotland, however, is surrounded by Islands on its northern and western sides, a considerable number of which are inhabited; while the remainder are so precipitous and inhospitable, that they only afford pasture to a few sheep during summer, or are altogether abandoned to the wild sea-fowl, which build their nests in great numbers among the inaccessible cliffs.
For the purposes of Registration, Scotland was, in 1855, divided into 1027 Districts; and all the subjoined Tables are prepared from the facts entered in the Register Books of these Districts. No old records exist sufficiently perfect to afford any means of comparing the varying proportion of Births, Deaths, or Marriages in Scotland for previous years; but, as the peculiar manner in which Scotland is broken up into insular and mainland portions seemed to afford peculiar facilities for studying the influence of soil, climate, season, etc., on the forms and proportions of the fatal diseases which prevail among the inhabitants of each of these localities, after considering Scotland as a whole, the various influence which an Insular, a Mainland, and, as contrasted with both, a strictly Town situation, bears on the proportion of Births, of Deaths, and Marriages, will be pointed out, but more especially the influence of these three localities on the prevalence and fatality of different diseases.

In 1855, the population of Scotland, estimated to the middle of the year, amounted to 3,005,958 persons, of whom 1,433,863 were males, and 1,572,095 females. For convenience of comparison, this population is divided into three great Divisions—Insular, Mainland, and Town popula-
First Annual Report

<table>
<thead>
<tr>
<th></th>
<th>POPULATION</th>
<th>BIRTHS</th>
<th>Illegitimate Births</th>
<th>DEATHS</th>
<th>MARRIAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Census 1851</td>
<td>Estimated 1856</td>
<td>No.</td>
<td>Per cent. to Pop.</td>
<td>No.</td>
</tr>
<tr>
<td>Insular</td>
<td>166,487</td>
<td>166,487</td>
<td>8,785</td>
<td>2-24</td>
<td>162</td>
</tr>
<tr>
<td>Mainland</td>
<td>1,714,528</td>
<td>1,764,978</td>
<td>50,947</td>
<td>2-92</td>
<td>4,589</td>
</tr>
<tr>
<td>Towns</td>
<td>1,007,753</td>
<td>1,075,096</td>
<td>80,260</td>
<td>3-87</td>
<td>2,606</td>
</tr>
<tr>
<td>SCOTLAND</td>
<td>2,888,742</td>
<td>3,005,958</td>
<td>98,849</td>
<td>3-10</td>
<td>7,857</td>
</tr>
</tbody>
</table>
Registration Districts in 1855
Since the Census of 1851 was taken, an Act has been in operation for a period of about 6½ years whereby all the Births, Deaths, and Marriages in Scotland are entered on Public Registers. To the Registrar-General under that Act the whole arrangements for taking the Census of Scotland in 1861 were entrusted, and the machinery employed for this purpose was of course mainly that employed in the Registration of the Births, Deaths, and Marriages, assisted by Enumerators appointed under them, and superintended by the Sheriffs in Counties and by the Chief Magistrates in Burghs.
Greater delay has occurred in bringing out these preliminary Tables than was contemplated; first, from causes not foreseen in time relative to a sufficient staff of clerks at the Head Office; and secondly, from the returns having been taken up for the Registration Counties, which differ somewhat from the Civil Counties, and required the necessary corrections to be made in order that the Tables might give a distinct idea of the progress of the population in each County from the year 1801, when the first Census of Scotland was taken.
Geography’s role today

- Family history
- Demography
To genealogists, place is important
To genealogists, place is important

Historic view of Dundee High Street, 1878 - RCAHMS

*Water Wynd and Meadow Place, from Meadowside, 1873,* from 'Dundee Old and New,' The Dundee Improvement Committee Album - Scottish National Photography Collection - SNPG
To genealogists, place is important

Detail of Forfarshire
1st edition Ordnance Survey map of Dundee - RCAHMS

Aerial view of Dundee, 2005 - RCAHMS

Melville Terrace, 1890 - ROS
To genealogists, place is important

(7179) Sept. 2, 1890.
Disch. by Trustees of the deceased ROBERT HENRY WYBRANTS, Mill Spinner and Merchant, Dundee,—dis-
burdening of Bond (dated 31st Aug., and recorded in this Register 2nd Sept. 1881) for £500, by Alexander Henderson, Silk Mercer, Dundee,—16 Poles 23 yards of ground on the north side of the Turnpike Road from Dundee to Perth and bounded on the north by a Road or Street 20 Feet wide formed or to be formed, with Dwelling House, &c. thereon now forming No. 2 CLARENDON TERRACE, DUNDEE, said ground being the Stance next the westmost of the Stances into which the ground after mentioned was divided, being part of 202 Poles of ground part of the lands and Estate of BLACKNESS. Dated Aug. 27 and 28, 1890; with Warrant of Regis-
tration thereon, on behalf of said Alexander Henderson.

649. 21.

(7180) Sept. 2, 1890.
Disp. by ALEXANDER HENDERSON, Silk Mercer, Dundee, to David Scott, Spinner and Manufacturer, Dundee,—of the subjects in the immediately preceding Minute. Dated Aug. 28, 1890; with Warrant of Registration thereon, on behalf of said Grantee.

649. 24.
To genealogists, place is important

Map extremities for Dundee 1857-58 - NLS

Map reference zoomed in
Scotland offers a world-leading service to family historians
Statistical geography

• GROS holds much geographically – referenced information about Scotland’s population
• GROS pioneered use of postcode mapping for statistical purposes
• GROS maintains maps and indexes relating postcodes to higher geographies
Statistical geography index
Statistical geography - settlements
# Statistical geography - settlements

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Council area</th>
<th>Estimated population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aberchirder</td>
<td>Aberdeenshire</td>
<td>1,200</td>
</tr>
<tr>
<td>Aberdeen</td>
<td>Aberdeen City</td>
<td>199,790</td>
</tr>
<tr>
<td>Aberdour</td>
<td>Fife</td>
<td>1,750</td>
</tr>
<tr>
<td>Aberfeldy</td>
<td>Perth &amp; Kinross</td>
<td>1,900</td>
</tr>
<tr>
<td>Aberfoyle</td>
<td>Stirling</td>
<td>660</td>
</tr>
<tr>
<td>Aberlady</td>
<td>East Lothian</td>
<td>900</td>
</tr>
<tr>
<td>Aberlour</td>
<td>Moray</td>
<td>790</td>
</tr>
<tr>
<td>Abernethy</td>
<td>Perth &amp; Kinross</td>
<td>920</td>
</tr>
<tr>
<td>Aboyne</td>
<td>Aberdeenshire</td>
<td>2,270</td>
</tr>
<tr>
<td>Airth</td>
<td>Falkirk</td>
<td>1,210</td>
</tr>
<tr>
<td>Alford</td>
<td>Aberdeenshire</td>
<td>2,120</td>
</tr>
</tbody>
</table>
Census Outputs

- Output Area the building brick
- Group of neighbouring postcodes nesting in higher geographies (especially council areas)
- Average 20 households/50 people
- 42,604 output areas in 2001
2011 Enumeration District planning

- Key to collection of data
- Groups of contiguous whole postcodes taking into account natural and man made boundaries
- 6,500 in Scotland, responsibility of enumerator
- New EDP system in ARC GIS
- Enumerator provided with map and address list
Plans for 2011 Census outputs

• Output Areas with minimum change from 2001
• Revisions normally splitting or merging existing output areas
• Will include Data Zones
Data Zones

- Output Areas too small for many uses
- Data Zones: stable aggregations of OAs
- Compact, homogenous
- Median population 760
- 6505 in Scotland
- Aggregated to ‘Intermediate Geographies’ with mean population 4000 (1235 in Scotland)
Data zones:
- rural
- urban
Uses of Data Zones

• Scottish Neighbourhood Statistics
• Index of deprivation
• Council and NHS board
  – service provision
  – target setting
  – performance monitoring
• Police beats
• Community Planning Partnerships
• Charities bidding for funding
• etc
Selected Indicator
Hospital admissions for alcohol misuse - rate per 100000 population: 2001-2004

Quintile Range
Selected Areas

Legend Range

- ≤ 779.93 and ≤ 1560.44
- >1560.44 and ≤ 1931.76
- 1959.06
- >2467.28 and ≤ 2830.25
- >2830.25 and ≤ 3371.14
Registrar General for Scotland
Registrar General for Scotland

Chairman
Scottish Government’s Geography Steering Group
Geographic information used widely

- **Scottish Government**
  - Agriculture support
  - Drinking Water Quality Regulation
- **Registers of Scotland**
  - Land and Property Registration
- **SEPA**
  - Flood warning system
- **SNH**
  - Site Designation and Management
  - Species Protection
- **Transport Scotland**
  - Trunk Road network Management
- **RCAHMS**
  - CanMore/CanMap public information
- **Historic Scotland**
  - Ancient Monument Scheduling/Protection
- **Emergency Services**
  - Command and Control Systems
- **Local Authorities**
  - Planning, Education, Social Work, Environmental Health systems
- **NHS**
  - Statistics and demographic analysis;
  - Property Management
- **etc**
The Government's map base

Ordnance Survey data is usually the basic layer.

Other layers are added "on top".

Geographic information used widely
Geographic information used widely

Your spatial reference is a key part of your identity

Place of birth = Nationality

Address contributes to establishment of identity

Address allows access to services
Geographic information used widely

Address is the key to information - about you and about Scotland

Your address is key part of the information held about you

Address is key to aggregating information to provide Scotland’s Spatial Statistics
Geographic information used widely
Geographic information used widely

Place names unlock the Archives and Libraries

Place names are not usually considered part of a GIS

But they open up different types of spatial information
...... and a lot of money spent on it

- Rural GIS infrastructure project - £1 million
- Other public sector infrastructure costs - £?
- Ordnance Survey data - £5 million annually
- Height data for flood warning - £1.5 million
- Other public sector data costs - £?
- National Address Gazetteer - £9 million
- e-Planning - £10 million
- etc
So .......
‘One Scotland – One Geography’
‘One Scotland – One Geography’

- First GI strategy for Scotland
- Consultation
- Published November 2005
- Ministerial backing
- Aims to overcome the barriers to maximising the use and value of geographic information, for the benefit of Scotland
‘One Scotland – One Geography’

• Vision and leadership
• Availability of information
• Sharing of information
• Promotion of use of information
• Technical standards
‘One Scotland – One Geography’

- Not a giant IT project with data warehouse at its core
- Sharing of up to date geographic information
- Agreement to share key geographies
- Infrastructure which allows sharing
‘One Scotland – One Geography’

2006

- Individual organisations
- Individual development
- Individual priorities
- Duplication of effort
- Gaps in data/information
- Inefficient service provision

2011

- Co-ordinated organisations
- Co-ordinated development
- Scottish priorities
- Integrated approach
- Shared infrastructure
- Cost/efficiency savings

SDI

Data For the user

Information For the citizen

General Register Office for Scotland

information about Scotland’s people
Good work is being done

Proof of Concept – 1
Single Rural Development Payment

- SG Rural
- SNH
- FCS

- Develop mechanism to share boundary data

Proof of Concept – 2
Emergency Response System

- SEPA
- Met Office
- Transport Scotland
- Local Authority
- GML
- Fire & Rescue
- SG

- Define key datasets for emergency response
- Develop mechanism to share key data
- Link emergency response system to police Alert system
Good work is being done

- Data held by 32 local authorities

Data collated by National Address Gazetteer

- Development cost = £10 million
- Sustainable data creation and management
- Policy that public sector will use the National Gazetteer
- Phased adoption 2008 - 2011

Data served to Scottish public sector bodies
Good work is being done

- NAG data as core address in other national address datasets
Good work is being done

- Procurement of key spatial data
Good work is being done
Good work is being done

• Forth Valley GIS
• Building on established shared service
• Professional and imaginative
• Good customer links: councils and public
• Scope for wider access
• Not only transforming Forth Valley’s geography
• But also Scotland’s
Good work is being done
Good work is being done

South Ayrshire Council

Maps and Geographical Information Systems (GIS)

South Ayrshire Council offers a number of online GIS facilities which are integrated throughout this web site. A GIS creates maps from data pulled from databases and both static maps and interactive maps are provided for a variety of applications. You can find out more about GIS and geographic information from the Ordnance Survey website.

Please note that while South Ayrshire Council has designed these applications for users on a standard internet connection, the maps are generated as images using the Council's interactive mapping system and it may still take several seconds to download each map image.

General Interactive Maps

- About My Property
  Access key Council related information about where you live
Good work is being done
Scope to do a lot more

Technology will continue to improve

People will use spatial information without thinking about it

People will expect the public sector to provide information in the way they can get it at home
Scope to do a lot more

*Expectations will continue to increase*

High quality spatial information is increasingly available in the media

People will expect the public sector to meet the same standards
Scope to do a lot more
Scope to do a lot more

LOOK AT INFORMATION ABOUT SCOTLAND

DOWNLOAD DATA ABOUT SCOTLAND

USE A SCOTTISH PUBLIC SERVICE

Local Primary School

<table>
<thead>
<tr>
<th>Rec</th>
<th>NAME</th>
<th>ADDRESS1</th>
<th>ADDRESS2</th>
<th>ADDRESS3</th>
<th>POSTCODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grangemouth Day Nursery</td>
<td>Abbots Road</td>
<td>Grangemouth</td>
<td>FK3 8JB</td>
<td></td>
</tr>
</tbody>
</table>

Risk of Flooding

School Performance

Council Tax Details

Trends – Alcohol/Drugs

Quality of Life Deprivation Index

Culture

Education

Environment

Rural Scotland

Health

Leisure

Public Safety

Emergencies

Business

Transport

Land & Property

Utilities

General Register Office for SCOTLAND

information about Scotland’s people
Scope to do a lot more

National Land & Property Register

Benefits:
• Advances RoS Registration
• Avoids duplication of Land & property data
• Creates opportunity for shared service

A Shared Service?

- Registers of Scotland Property Registration
- 32 Local Authority Land Terriers
- Scottish Government landholdings
- NTS Estate
- NHS Properties
- Crofters Commission
- Forestry Commission
- Historic Scotland
- Scottish Natural Heritage
- Housing Associations etc

• Data Standards
• Data sharing
• Discovery service
• View Services
• Download Services

General Register Office for Scotland
information about Scotland’s people
Scope to do a lot more

This means data sharing/standards/web services

Data sharing between Rural Agencies/NDPBs

We know the theory

SEPA

SG

FCS

GML

SNH

Local Authority

Others

But do our people know how to do it?
And still significant challenges

- Organisations act independently
- Duplication of effort
  - Multiple acquisition of data/software
  - Replicated storage of the same data.
- Gaps in data coverage
- Ineffective use of resources
  - Multiple “data warehouses” to manage same datasets
  - Replicated system development and management costs
- Barriers to data sharing
- Gaps in information delivery
- Inefficient service provision
The European dimension

- INSPIRE
- European Framework Directive
- General rules to establish *Infrastructure for Spatial Information in Europe*
INSPIRE components

• Metadata
• Interoperability of spatial datasets and services
• Network services – Discovery, View, Download, Invoke
• Data and service sharing
• Co-ordination, monitoring & reporting
INSPIRE priority data sets

ANNEX I

• Co-ordinate Reference Systems
• Geographical Grid Systems
• Geographical names
• Administrative Units
• Addresses
• Cadastral Parcels
• Transport Networks
• Hydrography
• Protected Sites

ANNEX II

• Elevation
• Land Cover
• Ortho-Imagery
• Geology
ANNEX III

- Statistical Units
- Buildings
- Soil
- Land Use
- Human Health & Safety
- Utility & Government Services
- Environmental Monitoring Facilities
- Production & Industrial Facilities
- Agriculture & Industrial Facilities
- Population Distribution - Demography

- Area Management, Restriction, Regulation Zones & Reporting Units
- Natural Risk Zones
- Atmospheric Conditions
- Meteorological Geographical Units
- Oceanographic Geographical Features
- Sea Regions
- Bio-Geographical Units
- Habitats & Biotopes
- Species Distribution
- Energy Resources
- Mineral Resources
INSPIRE next steps

• Transpose Directive into UK legislation
  – next Spring
• Fulfil INSPIRE dataset requirements
  – 2009-2013
  – We don’t yet know what this will actually mean
  – But it will include
    • Defining metadata
    • Ensuring interoperability of spatial datasets and services
    • Developing network services – Discovery, View, Download, Invoke
• Ensuring data and service sharing
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