

**Chris Fleet**

# Creating, Managing, and Maximising the Potential of Large Online Georeferenced Map Layers



Online at: <http://tiny.cc/755x3y>

- Introduction
- Georeferencing workflows
- Open-source viewers
- Onward use and re-use
- Conclusions

## NATIONAL LIBRARY OF SCOTLAND - CAUSEWAYSIDE BUILDING



## NATIONAL LIBRARY OF SCOTLAND - MAPS READING ROOM



## NATIONAL LIBRARY OF SCOTLAND - MAP COLLECTIONS



- 2 million sheet maps
- 15,000 atlases
- 100,000 maps on microfilm
- Over 200 terabytes of digital mapping

Also gazetteers, cartographic reference books and periodicals, and planning reports...





Timothy Pont, Elgin, ca. 1583-1614









Ordnance Survey, Prestwick, 1946



GLASGOW ROAD

Poorhouse

YORK PLACE

COUNTY PL.

RINNOULL CAUSEWAY

Courty & City In

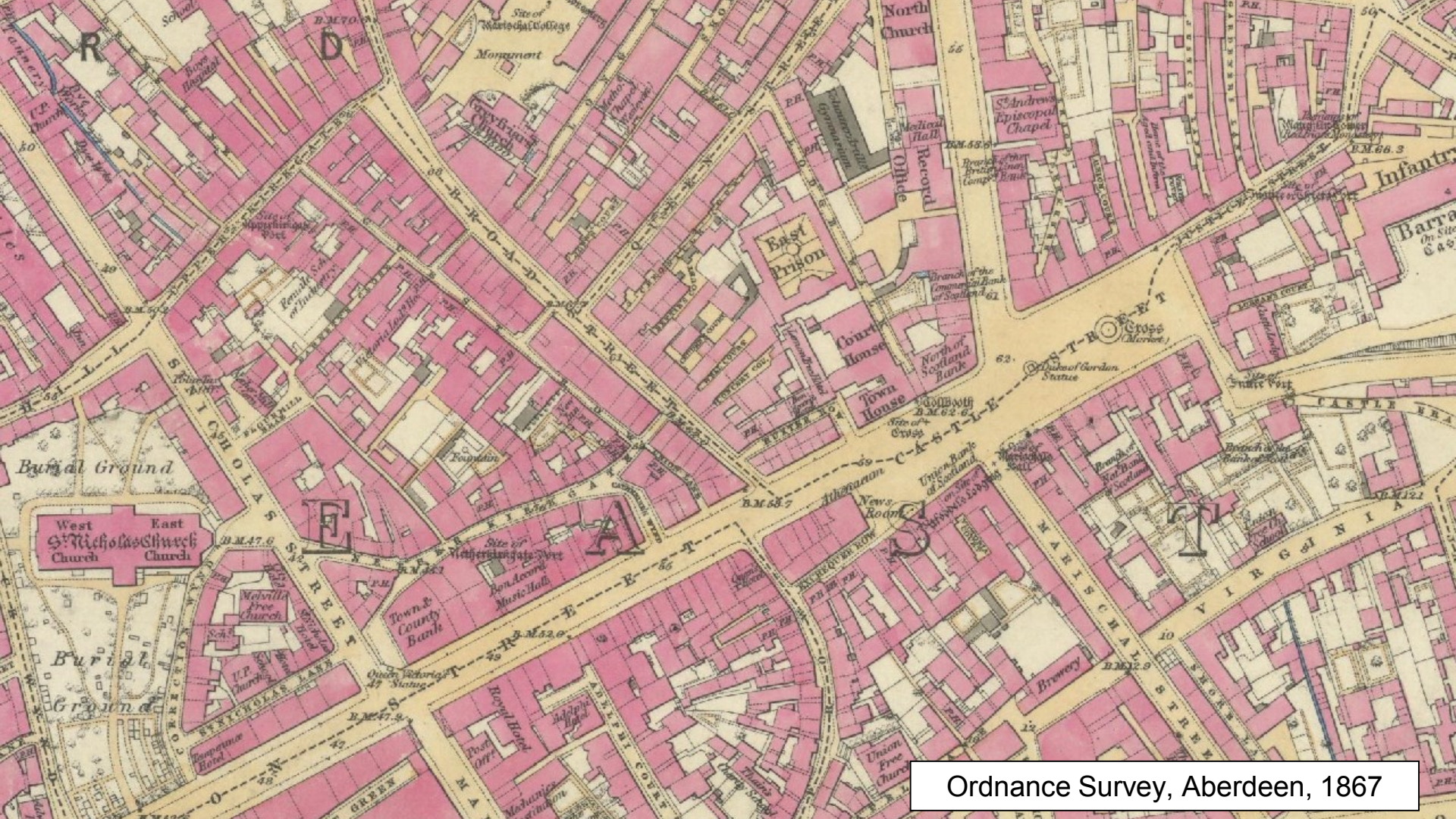
Graybank Cottage

Sur. 76.6

Perthmore Parish (det<sup>d</sup> N<sup>o</sup> 2)  
4.004 Acres

Gen<sup>l</sup> Railway Station

Ordnance Survey, Perth, 1860



Ordnance Survey, Aberdeen, 1867

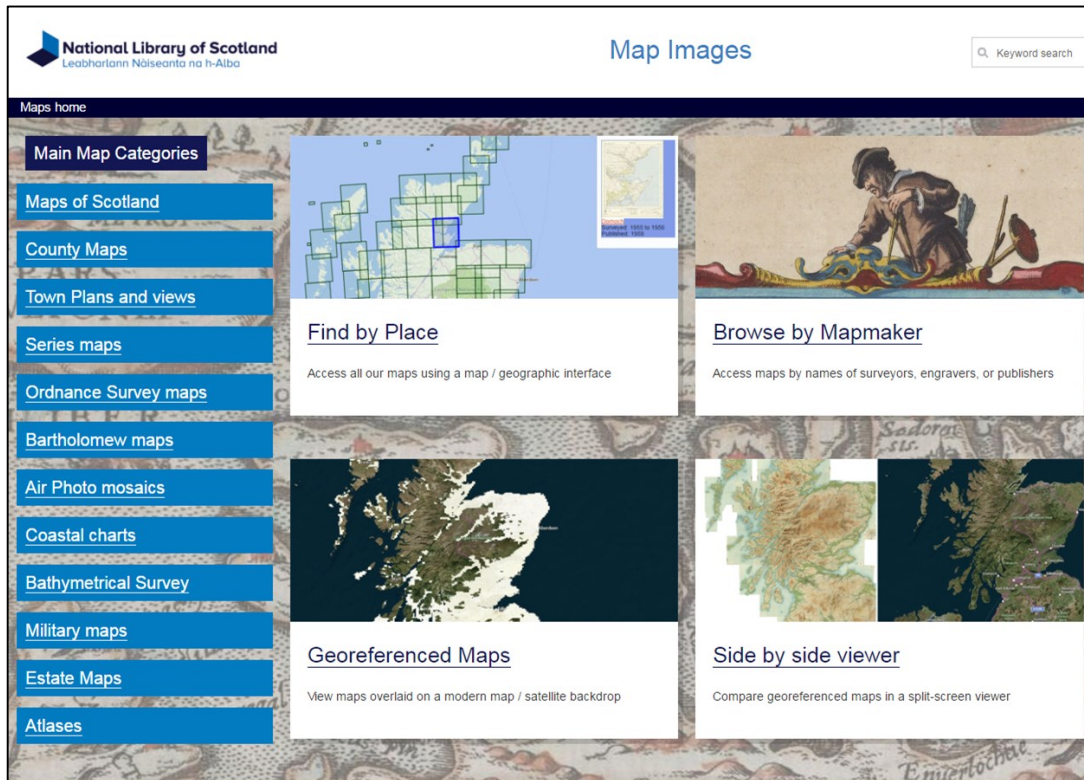
## NLS MAPS WEBSITE OVERVIEW

- NLS paper collections ca. 2 million maps
- NLS Map Images website 220,000 online maps - ca. 12% of whole collection
- ca. 600 georeferenced layers
- 2012-2018 - ca. 30,000 new maps digitised per annum

### Google Analytics - maps.nls.uk

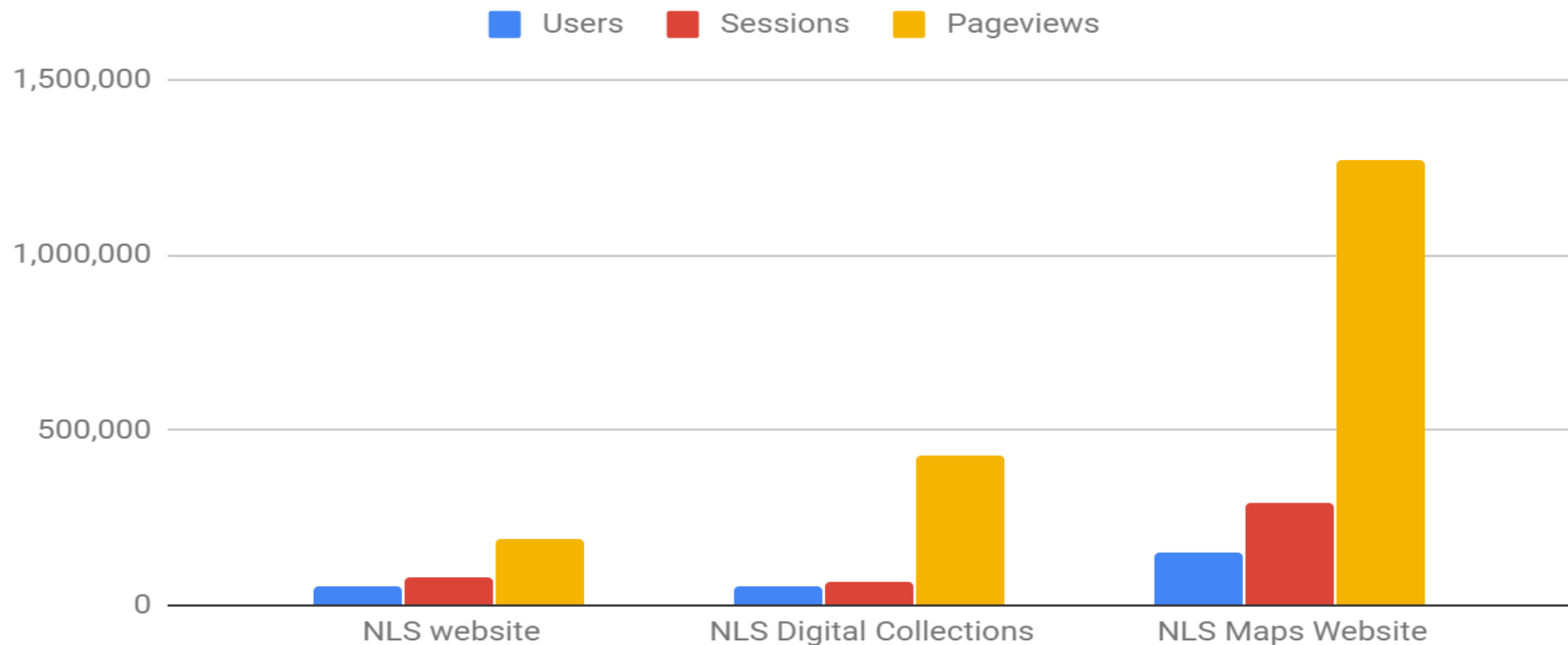
February 2019

- 151,139 users
- 293,859 sessions
- 1,271,049 page views



The screenshot shows the NLS Map Images website interface. At the top left is the NLS logo and name. The main header is "Map Images" with a search bar on the right. Below the header is a "Maps home" section. A vertical sidebar on the left lists "Main Map Categories" with links to: Maps of Scotland, County Maps, Town Plans and views, Series maps, Ordnance Survey maps, Bartholomew maps, Air Photo mosaics, Coastal charts, Bathymetrical Survey, Military maps, Estate Maps, and Atlases. The main content area features four large tiles: "Find by Place" (with a map thumbnail and description: "Access all our maps using a map / geographic interface"), "Browse by Mapmaker" (with a historical illustration and description: "Access maps by names of surveyors, engravers, or publishers"), "Georeferenced Maps" (with a satellite map thumbnail and description: "View maps overlaid on a modern map / satellite backdrop"), and "Side by side viewer" (with two map thumbnails and description: "Compare georeferenced maps in a split-screen viewer").

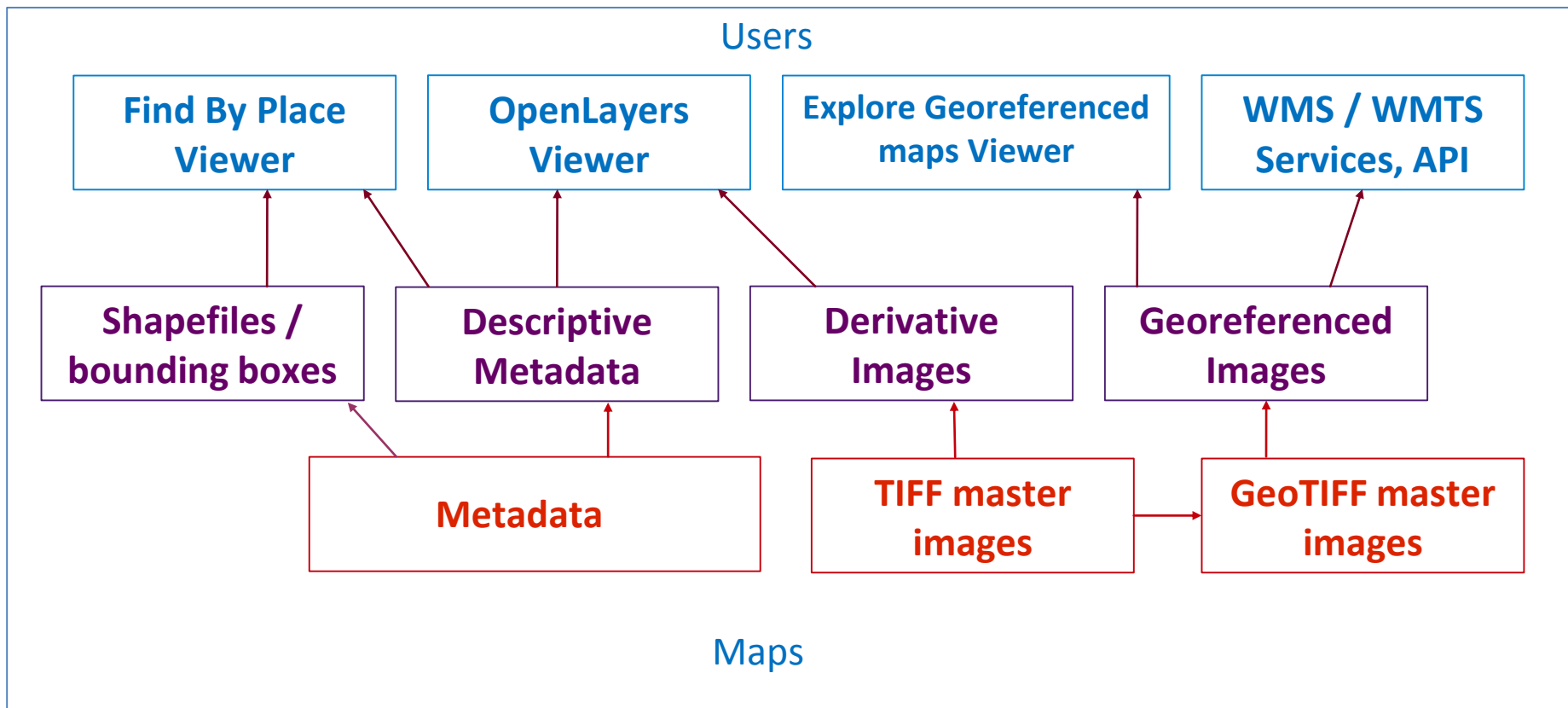
## Website usage - February 2019 - NLS website, digital collections and maps



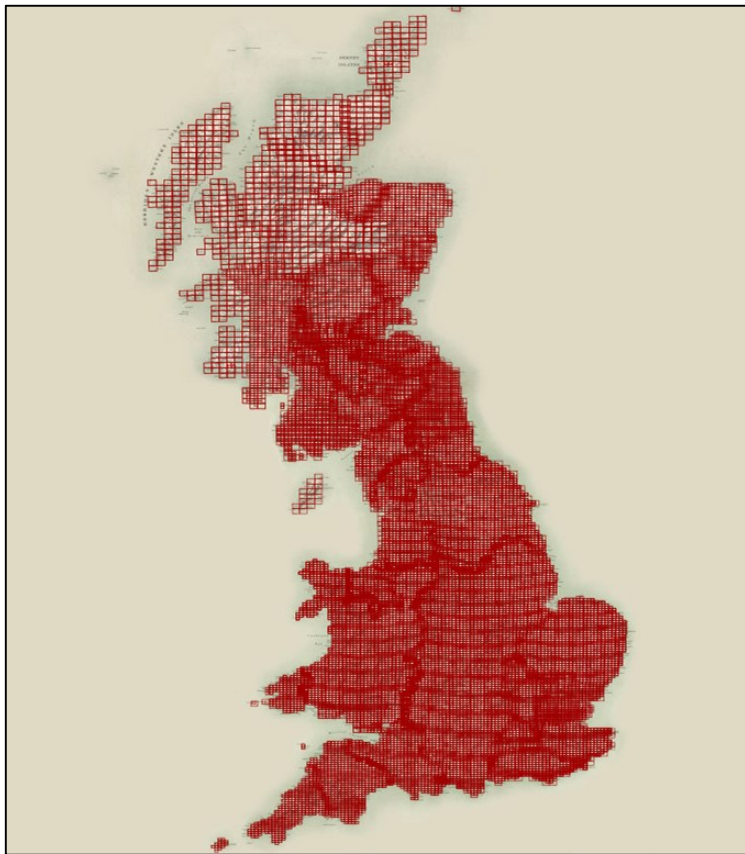
- Introduction
- **Georeferencing workflows**
- Open-source viewers
- Onward use and re-use
- Conclusions



## STRUCTURAL MODEL OF MAP WEBSITE COMPONENTS

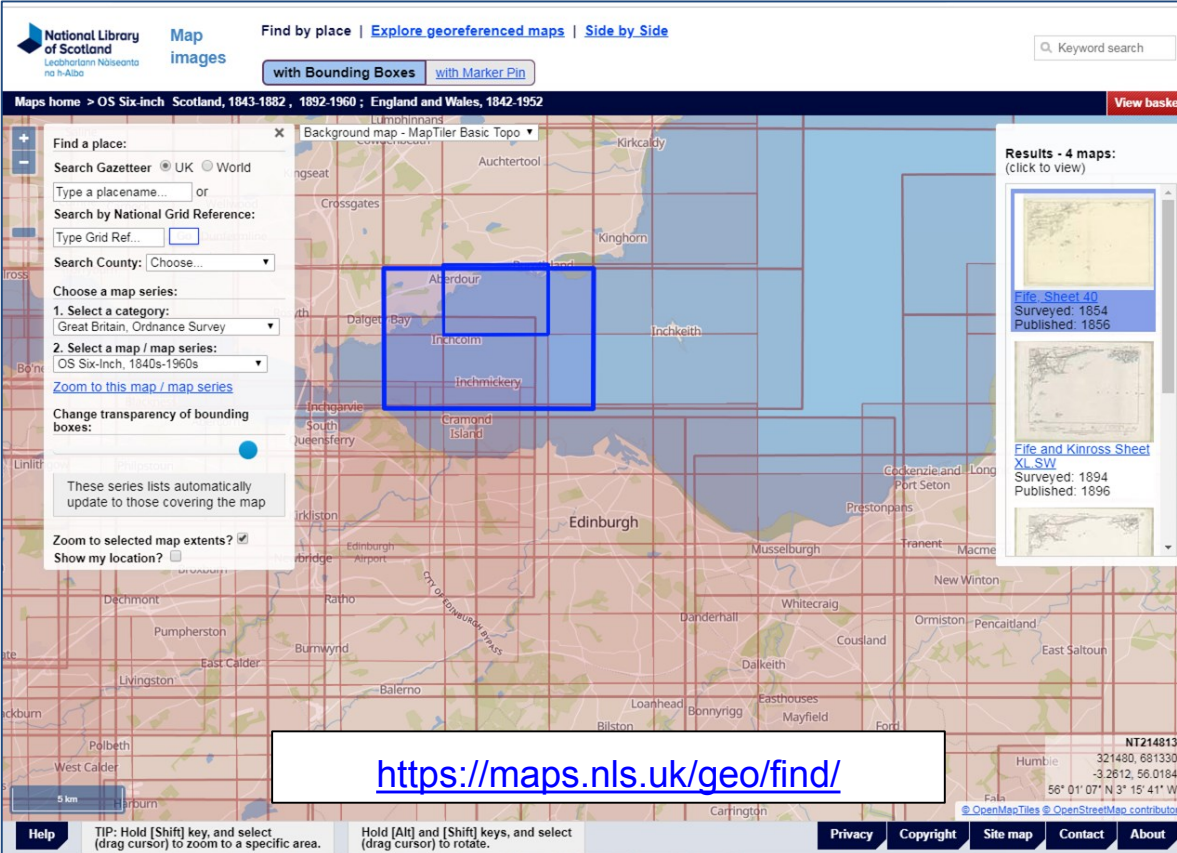


## BOUNDING BOXES FOR SIX-INCH MAPPING





## FIND BY PLACE - BOUNDING BOX SEARCH INTERFACE



**National Library of Scotland** **Map images** Find by place | [Explore georeferenced maps](#) | [Side by Side](#)

with Bounding Boxes | with Marker Pin

Keyword search

Maps home > OS Six-inch Scotland, 1843-1882, 1892-1960 ; England and Wales, 1842-1952 [View basket](#)

Background map - MapTiler Basic Topo

**Find a place:**

Search Gazetteer  UK  World

Type a placename... or

**Search by National Grid Reference:**

Type Grid Ref...

Search County: Choose...

**Choose a map series:**

1. Select a category: Great Britain, Ordnance Survey

2. Select a map / map series: OS Six-Inch, 1840s-1960s

[Zoom to this map / map series](#)

**Change transparency of bounding boxes:**

These series lists automatically update to those covering the map

**Zoom to selected map extents?**

**Show my location?**

**Results - 4 maps:** (click to view)

[Eife, Sheet 40](#)  
Surveyed: 1854  
Published: 1856

[Eife and Kinross Sheet XI, SW](#)  
Surveyed: 1894  
Published: 1896

<https://maps.nls.uk/geo/find/>

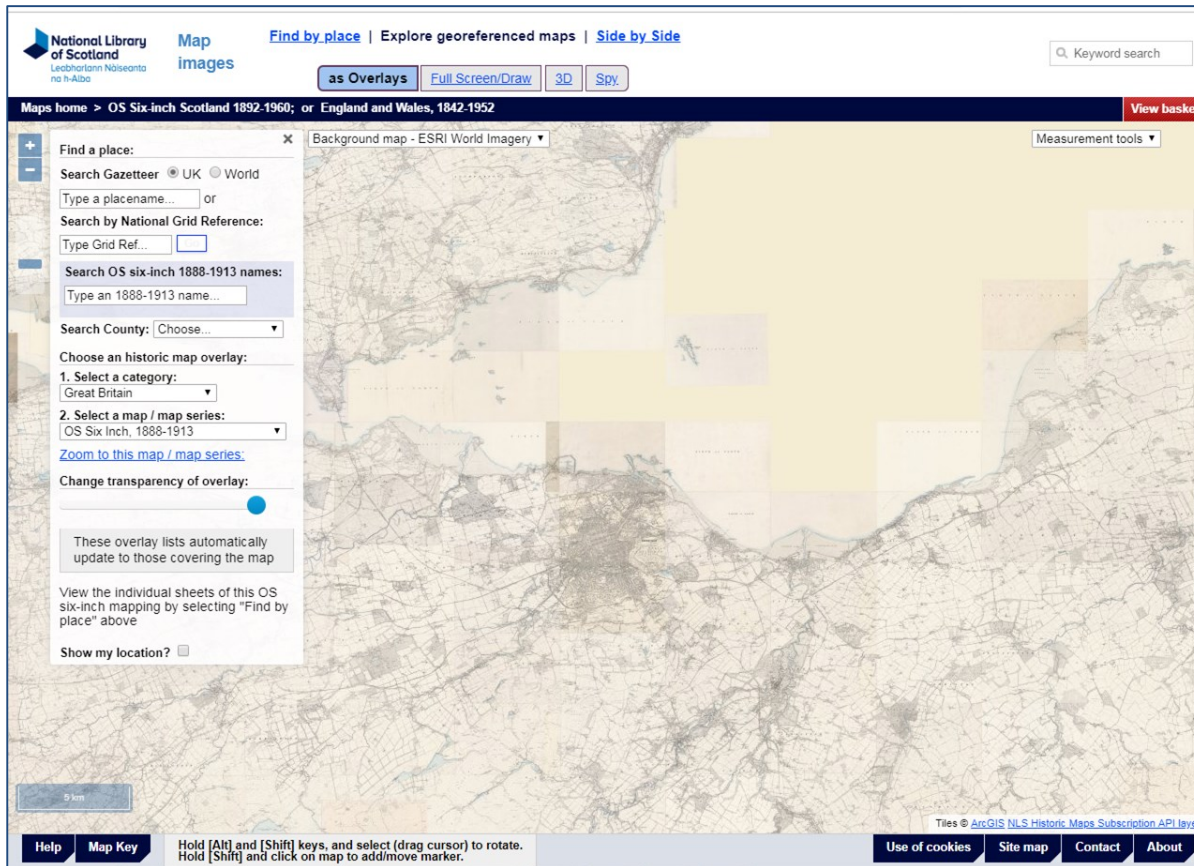
NT214813  
Humbie 321480, 681330  
-3.2612, 56.0184  
56° 01' 07" N 3° 15' 41" W

[OpenMapTiles](#) [OpenStreetMap](#) contributors

**Help** **Privacy** **Copyright** **Site map** **Contact** **About**

TIP: Hold [Shift] key, and select (drag cursor) to zoom to a specific area. Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate.

## EXPLORE GEOREFERENCED MAPS - SEAMLESS GEOREFERENCED LAYER



National Library of Scotland  
Leabharlann Nàiseanta na h-Alba

Map images

[Find by place](#) | [Explore georeferenced maps](#) | [Side by Side](#)

as Overlays Full Screen/Draw 3D Spy

Maps home > OS Six-inch Scotland 1892-1960; or England and Wales, 1842-1952 [View basket](#)

Find a place:  Background map - ESRI World Imagery  Measurement tools

Search Gazetteer  UK  World

Type a placename... or

Search by National Grid Reference:

Type Grid Ref...

Search OS six-inch 1888-1913 names:

Type an 1888-1913 name...

Search County:

Choose an historic map overlay:

1. Select a category:

2. Select a map / map series:

[Zoom to this map / map series.](#)

Change transparency of overlay:

These overlay lists automatically update to those covering the map

View the individual sheets of this OS six-inch mapping by selecting "Find by place" above


Show my location?

5 km

Tiles © ArcGIS NLS Historic Maps Subscription API Layer

Help Map Key Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate. Hold [Shift] and click on map to add/move marker. Use of cookies Site map Contact About

## HOME PAGES FOR ALL SERIES

**National Library of Scotland** Map images  
Leabharlann Nàiseanta na h-Alba

Maps home > Ordnance Survey > Six-inch 2nd and later editions, 1892-1960

View basket

### Ordnance Survey Maps - Six-inch 2nd and later editions, Scotland, 1892-1960


The most comprehensive, topographic mapping covering all of Scotland from the 1890s. Regular updates in the 20th century for urban or rapidly changing areas to the 1960s.

Browse the maps:

- [As individual sheets using a zoomable map of Scotland](#)
- [As a seamless zoomable overlay layer on modern Google and OS maps](#)
- [By county – text lists](#)


See also:

- [Guide to abbreviations](#) – alphabetical list of standard OS abbreviations
- [Guide to symbols](#) – OS Characteristics Sheet (1897)
- [Characters of writing](#) – OS Lettering Styles (1897)
- [Conventional signs and writing](#) – OS Symbols and Lettering (ca. 1923)
- [List of Scottish counties](#), with their changes of meridian, dates of survey and publication.
- Further information:
  - [Map content and revision dates](#)
  - [Projections, Meridians, Sheet extents and printing](#)



[Privacy](#) [Copyright](#) [Site map](#) [Contact](#) [About](#)

## KLOKAN TECHNOLOGIES' GEOREFERENCER - 2011-17

 National Library of Scotland  
Leabharlann Nàiseanta na h-Alba

Map images

🔍 Keyword search

Maps home > Projects > NLS Map Georeferencer

Find by place

Browse by category

### NLS Map Georeferencer home page - online map georeferencing pilot programme


The Georeferencer application is a collaborative online project, where anyone with access to Internet can help with georeferencing of various historical maps from our collection.

[Why georeference maps?](#) | [About georeferencer](#) | [Help](#)

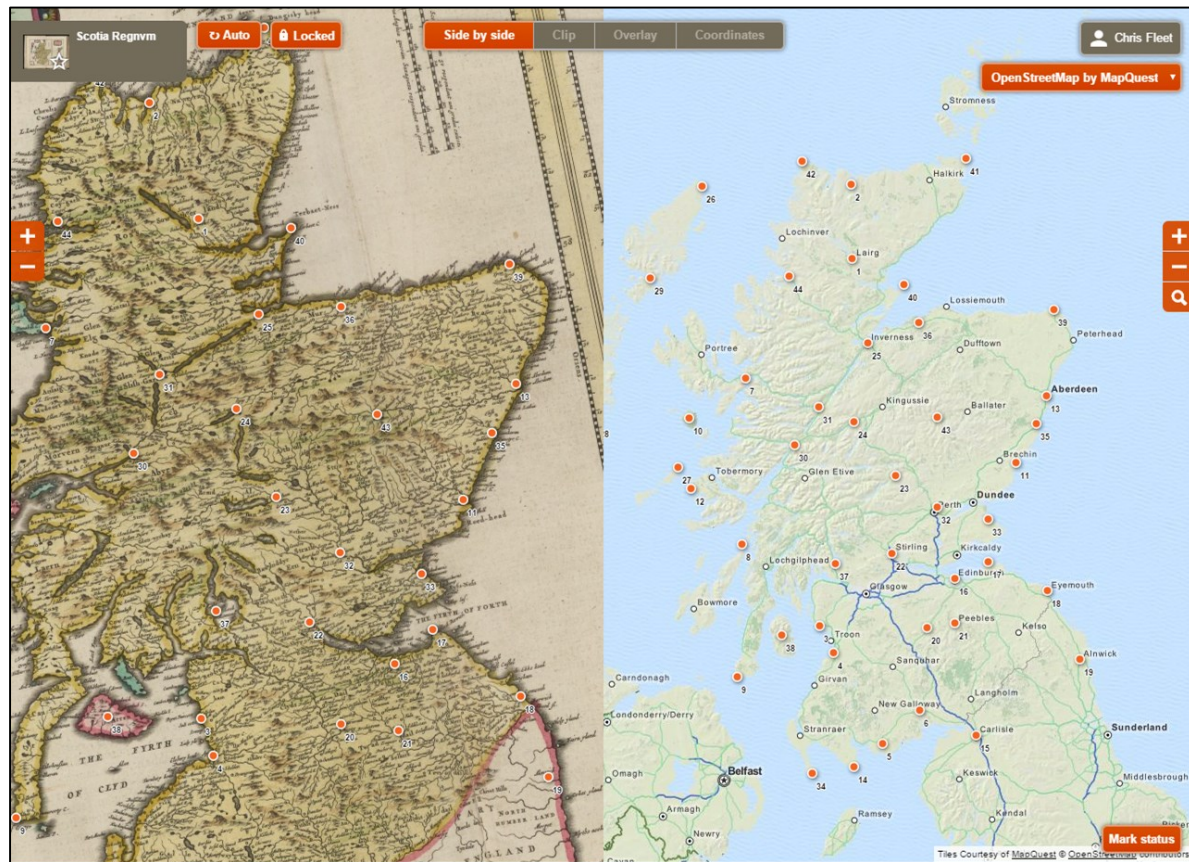
Please help the National Library of Scotland to georeference our scanned historical maps.

[Select a map at random](#) you would like to georeference.

View maps already georeferenced:



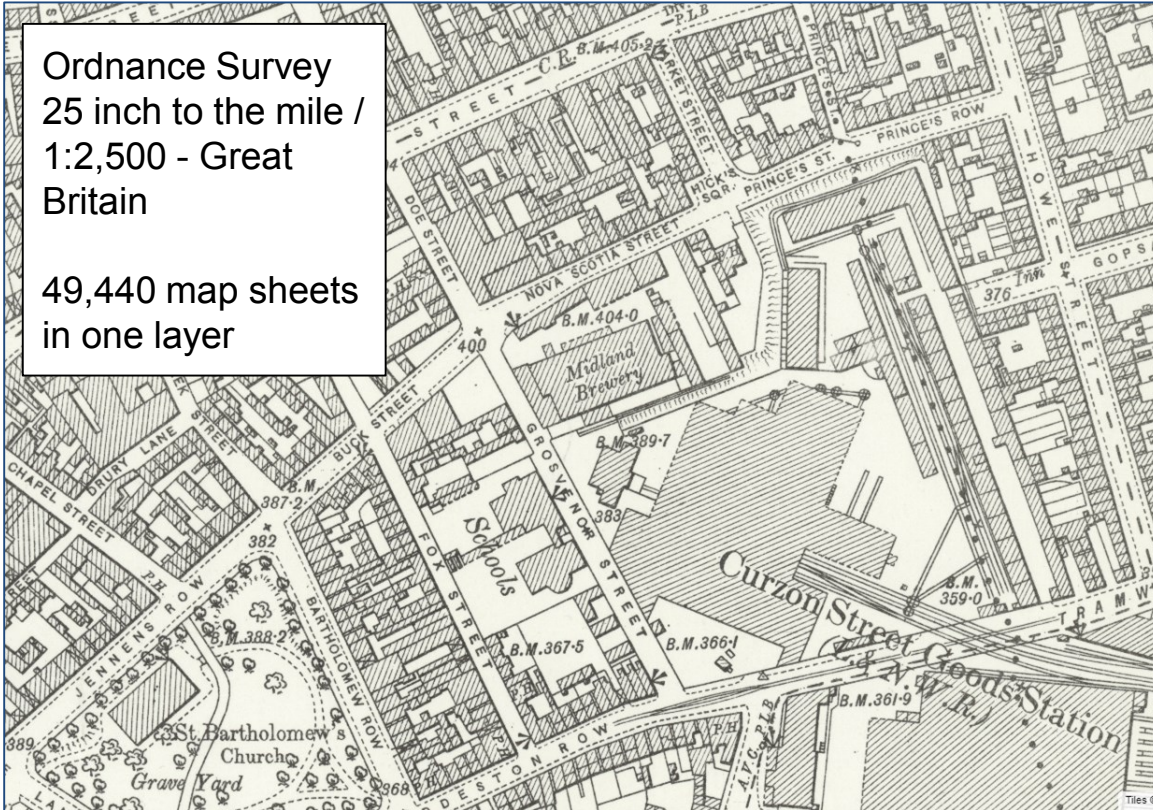
## KLOKAN TECHNOLOGIES' GEOREFERENCER - 2011-17



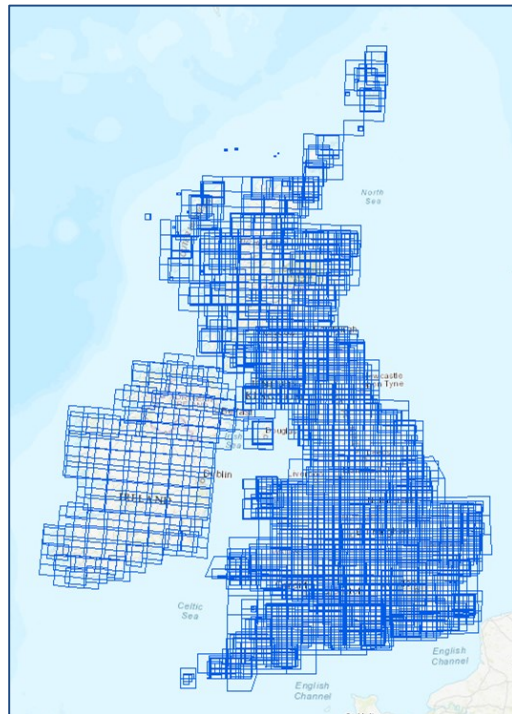
## SERIES MAP LAYERS

Ordnance Survey  
25 inch to the mile /  
1:2,500 - Great  
Britain

49,440 map sheets  
in one layer



## BOUNDING BOXES FOR ORDNANCE SURVEY MAPS



**FieldenMaps.info**

**You are here:**  
HOME > Co-ordinate Converter

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**Co-ordinate Converter**

A web-based tool for conversions between projected co-ordinate systems commonly in use in Great Britain and Ireland.

Please begin by selecting the area for which you wish to convert co-ordinates:

---

**Great Britain** (including Channel Is. & Isle of Man)

- Latitude/Longitude (ETRS89) (GPS-compatible)
- Latitude/Longitude (OSGB36)
- Latitude/Longitude (ED50)
- UTM Co-ordinates (ETRS89 or ED50) Zones 29/30/31
- GB National Grid
- GB National Yard Grid
- Cassini Projection (Delamere origin)
- War Office Cassini Grid
- Bonne Projection (Scotland)
- OS County Series Co-ordinates & Sheet References



**Great Britain**

---

**Ireland**

- Latitude/Longitude (ETRS89) (GPS-compatible)
- Latitude/Longitude (OS Ireland 65)
- Latitude/Longitude (ED50)
- UTM Co-ordinates (ETRS89 or ED50) Zones 29/30
- Irish National Grid
- Irish Transverse Mercator Grid
- Bonne Projection (Ireland)
- War Office Irish Grid



**Ireland**

---



OSTN02\* and OSi/OSNI Polynomial enabled

---

**Donations**

**Donate**

If you find Co-ordinate Converter useful and would like to make a donation for the work that has gone into making it - or for the upkeep of this website - please use the PayPal link to the left. Please note that this is not compulsory - Co-ordinate Converter is free for non-commercial use.

---

**Interested in using Co-ordinate Converter functions on your own site?**

**FieldenMaps.info**

**You are here:**  
HOME > Co-ordinate Converter > Great Britain

---

**Co-ordinate Converter**

**Great Britain**

---

**WGS84/ETRS89**

Reference for GPS & online maps of the British Isles  
*GPS-compatible*

Degrees  
Lat  N  
Lon  W

[Switch to Deg/Min/Sec](#)

[Convert >>](#)

**OSGB36**

Used as graticule markings on Ordnance Survey maps of Great Britain  
*Not GPS-compatible*

Degrees  
Lat  N  
Lon  W

[Switch to Deg/Min/Sec](#)

[Convert >>](#)

**ED50 (European Datum)**

Used as graticule markings for some international maps of the British Isles  
*Not GPS-compatible*

Degrees  
Lat  N  
Lon  W

[Switch to Deg/Min/Sec](#)

[Convert >>](#)

---

**Great Britain National Grid**

Grid Ref. (2-letter Square ID) Full ref., used on OS maps since 1952

Sq. Eastings	Northings	Eastings	Northings
<input type="text" value="NY 36039"/>	<input type="text" value="67735"/>	<input type="text" value="336038.762"/>	<input type="text" value="567734.857"/>
e.g. SU 392 654		<a href="#">Switch to numeric square IDs</a>	

[Convert >>](#)

**UTM Co-ordinates**

ED50 datum (Int'l. 1924 ellipsoid)  
Used on some international maps of GB

UTM Zone  N hemis.  
Eastings  m  
Northings  m

[Switch to WGS84/ETRS89 co-ordinates](#)

[Convert >>](#)

---

**Great Britain National Yard Grid**

Used on OS small-scale maps 1931-1945

**Full Co-ordinates**

Eastings	Northings
<input type="text" value="930051.401"/>	<input type="text" value="1730240.996"/>

[Convert >>](#)

**War Office Cassini ('WOF') Grid**

Used on War Office maps of Great Britain from the 1920s to the 1940s.

**Grid Reference**

Sq. Eastings	Northings	Full Co-ordinates
<input type="text" value="4Y 84660"/>	<input type="text" value="89114"/>	Eastings <input type="text" value="384659.682"/> m Northings <input type="text" value="589114.302"/> m

[Convert >>](#)

---

**Cassini (Delamere) Projection Co-ordinates**

Used as the basis for OS small-scale maps of England & Wales from 1870s (+ Scotland from 1920s) to 1945

<input type="text" value="65270.97"/>	ft West	of origin
<input type="text" value="649576.24"/>	ft North	

[Convert >>](#)

**Bonne Projection (Scotland) Co-ordinates**

Used as the basis for OS small-scale maps of Scotland from the 1850s to the 1950s.

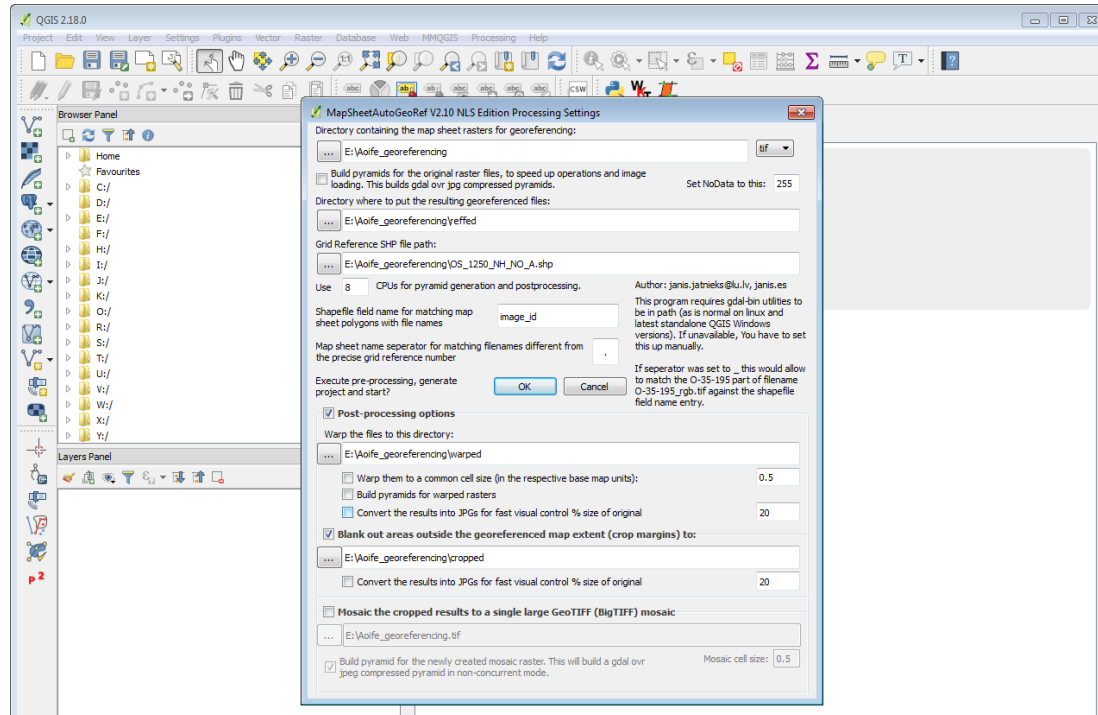
<input type="text" value="209925.84"/>	ft East	of origin
<input type="text" value="911644.63"/>	ft South	

[Convert >>](#)

<https://charlesclosesociety.org/KMLFILE>

<http://www.fieldenmaps.info/cconv/>

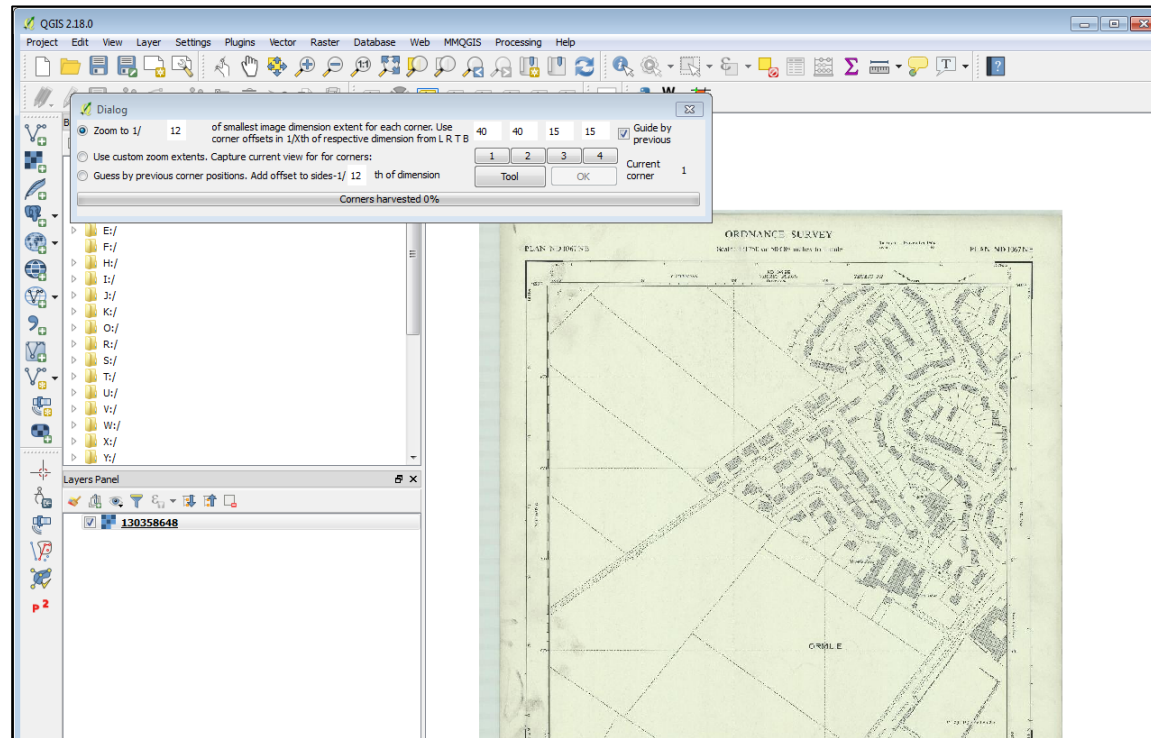
## USING QGIS MAPSHEETAUTOGEOREF PLUGIN



Jatnieks, J., Open Source Solution for Massive Map Sheet Georeferencing Tasks for Digital Archiving. *Lecture Notes in Computer Science*, 6102, (2010) pp. 258-259.

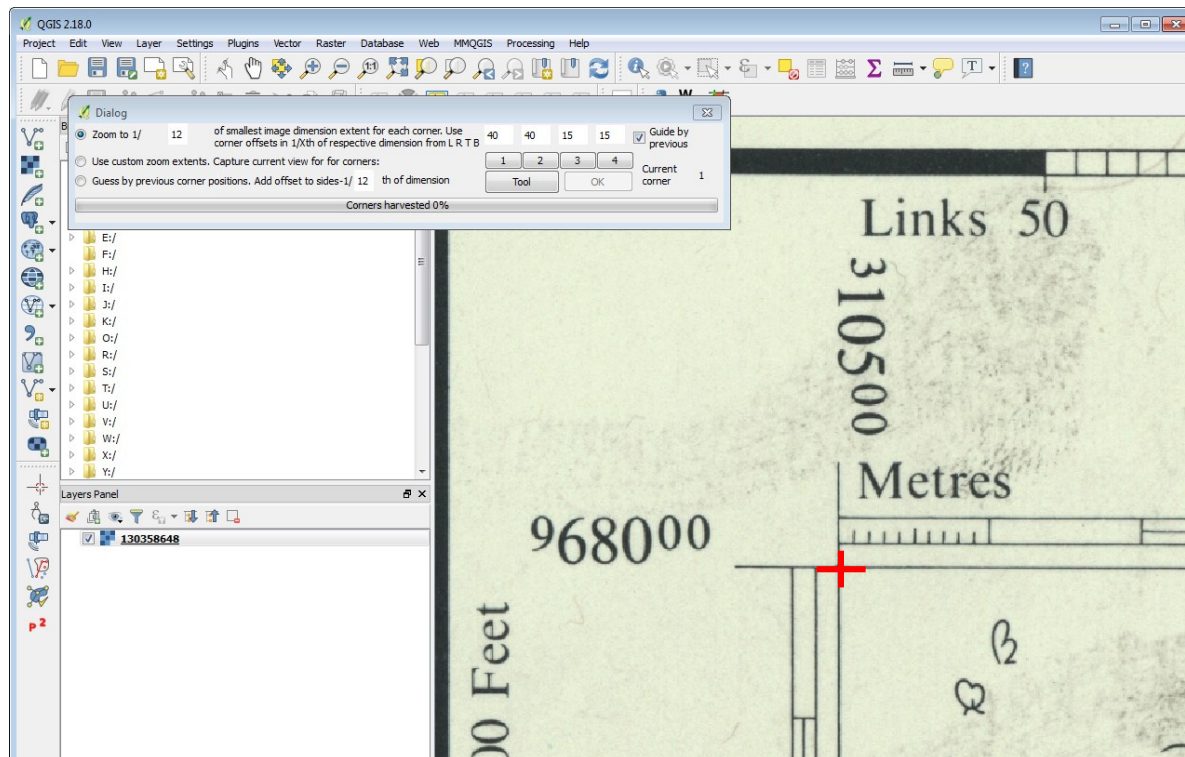


## USING QGIS MAPSHEETAUTOGEOREF PLUGIN



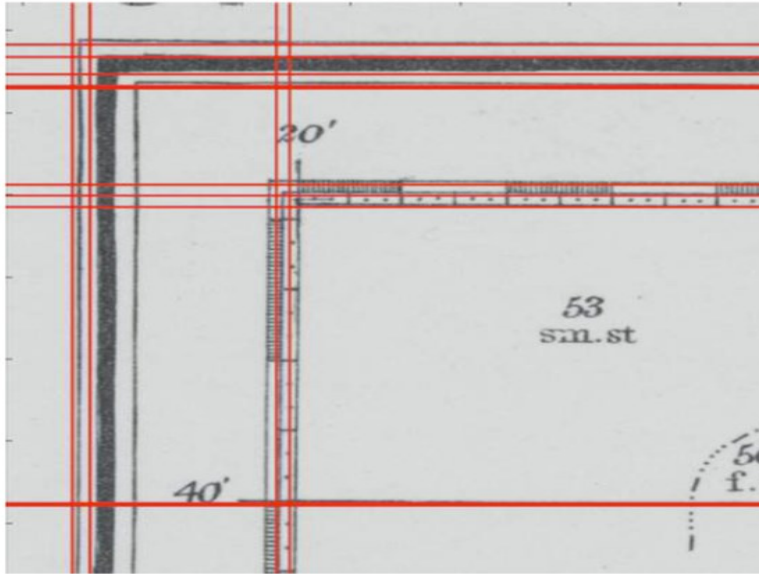
Jatnieks, J., Open Source Solution for Massive Map Sheet Georeferencing Tasks for Digital Archiving. *Lecture Notes in Computer Science*, 6102, (2010) pp. 258-259.

## USING QGIS MAPSHEETAUTOGEOREF PLUGIN



Jatnieks, J., Open Source Solution for Massive Map Sheet Georeferencing Tasks for Digital Archiving. *Lecture Notes in Computer Science*, 6102, (2010) pp. 258-259.

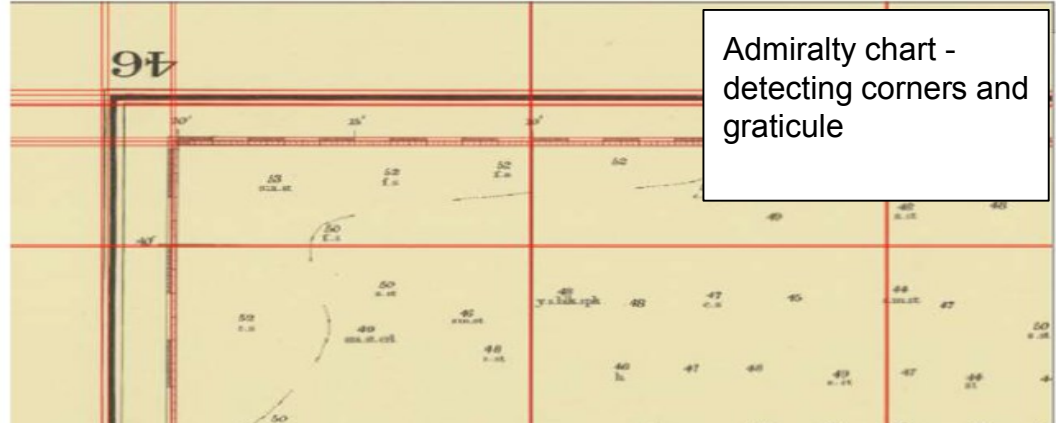
## DETECTING SHEET CORNERS AND COORDINATES FOR AUTOMATIC GEOREFERENCING



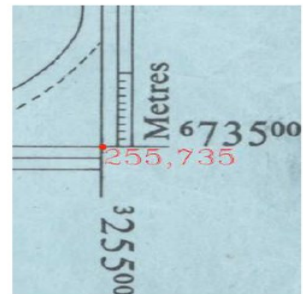
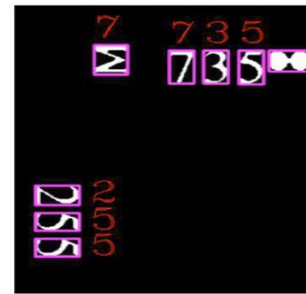
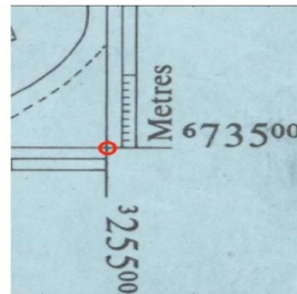
Using the Gough Transform and OpenCV to detect  
sheet corners

G. Stavropoulou (2014)

<https://www.era.lib.ed.ac.uk/handle/1842/10347>

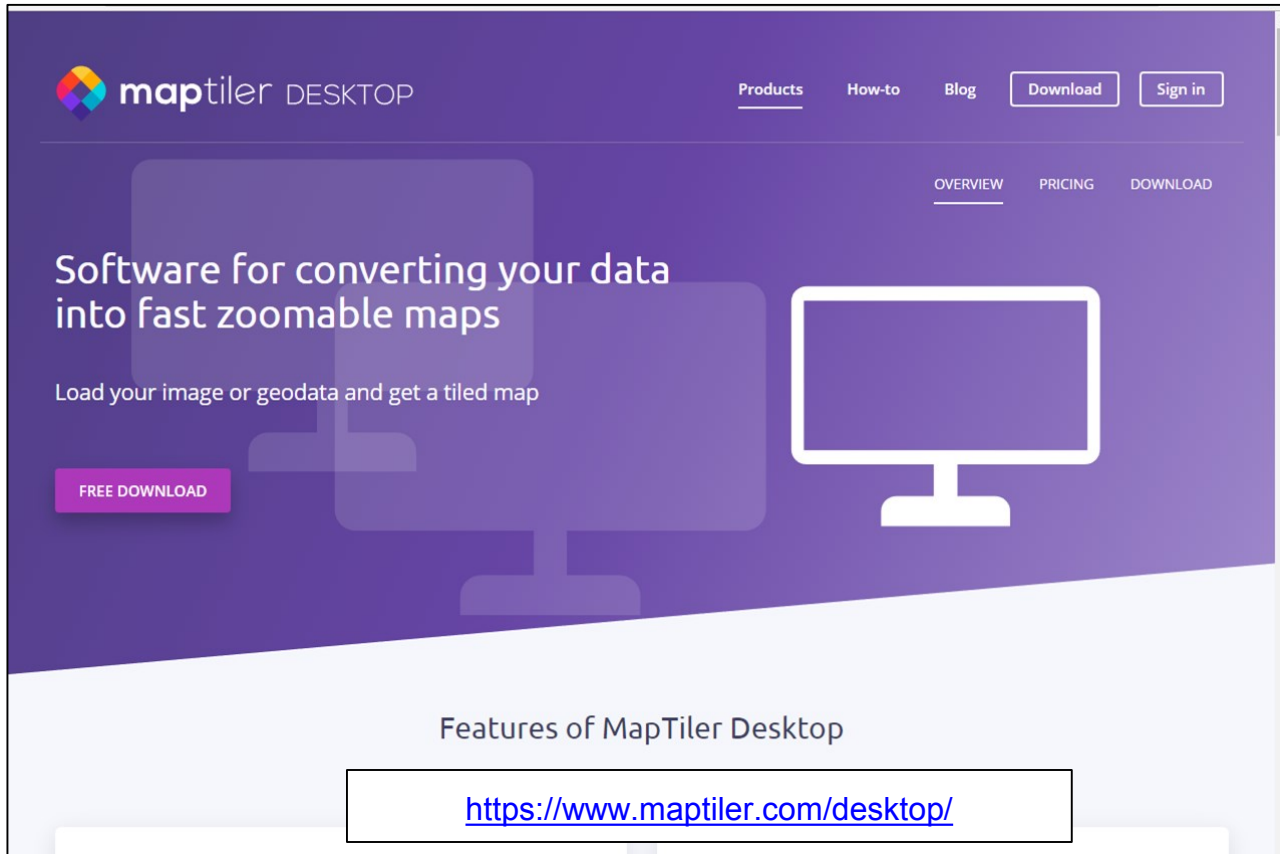


Admiralty chart -  
detecting corners and  
graticule



Detecting sheet corner and OCR of Eastings and Northings

## USING MAPTILER FOR ONLINE DELIVERY OF GEOREFERENCED IMAGES



The screenshot shows the MapTiler Desktop website. The header features the MapTiler logo and 'DESKTOP' text on the left, and navigation links for 'Products', 'How-to', 'Blog', 'Download', and 'Sign in' on the right. Below the header, there are sub-navigation links for 'OVERVIEW', 'PRICING', and 'DOWNLOAD'. The main content area has a purple background with the text 'Software for converting your data into fast zoomable maps' and 'Load your image or geodata and get a tiled map'. A pink 'FREE DOWNLOAD' button is visible. A white monitor icon is on the right. At the bottom, the text 'Features of MapTiler Desktop' is centered, with a box containing the URL <https://www.maptiler.com/desktop/>.

maptiler DESKTOP

Products How-to Blog Download Sign in

OVERVIEW PRICING DOWNLOAD

Software for converting your data  
into fast zoomable maps

Load your image or geodata and get a tiled map

FREE DOWNLOAD

Features of MapTiler Desktop

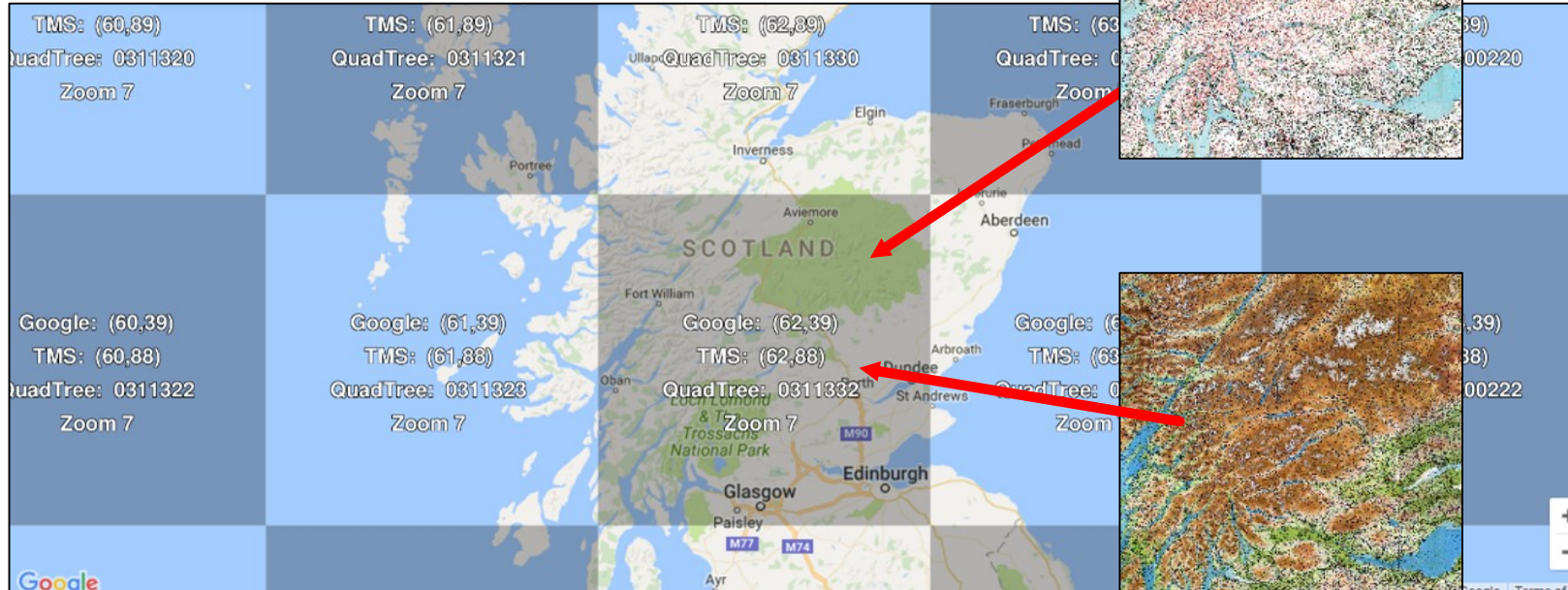
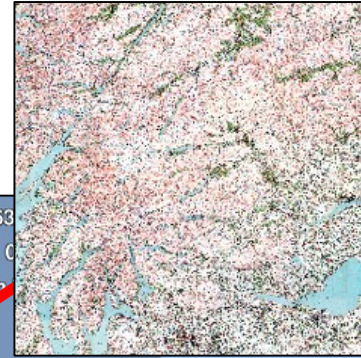
<https://www.maptiler.com/desktop/>

## MAPTILER WMTS / XYZ TILESET OUTPUT

### Format:

server-and-url/zoom/x/y.png

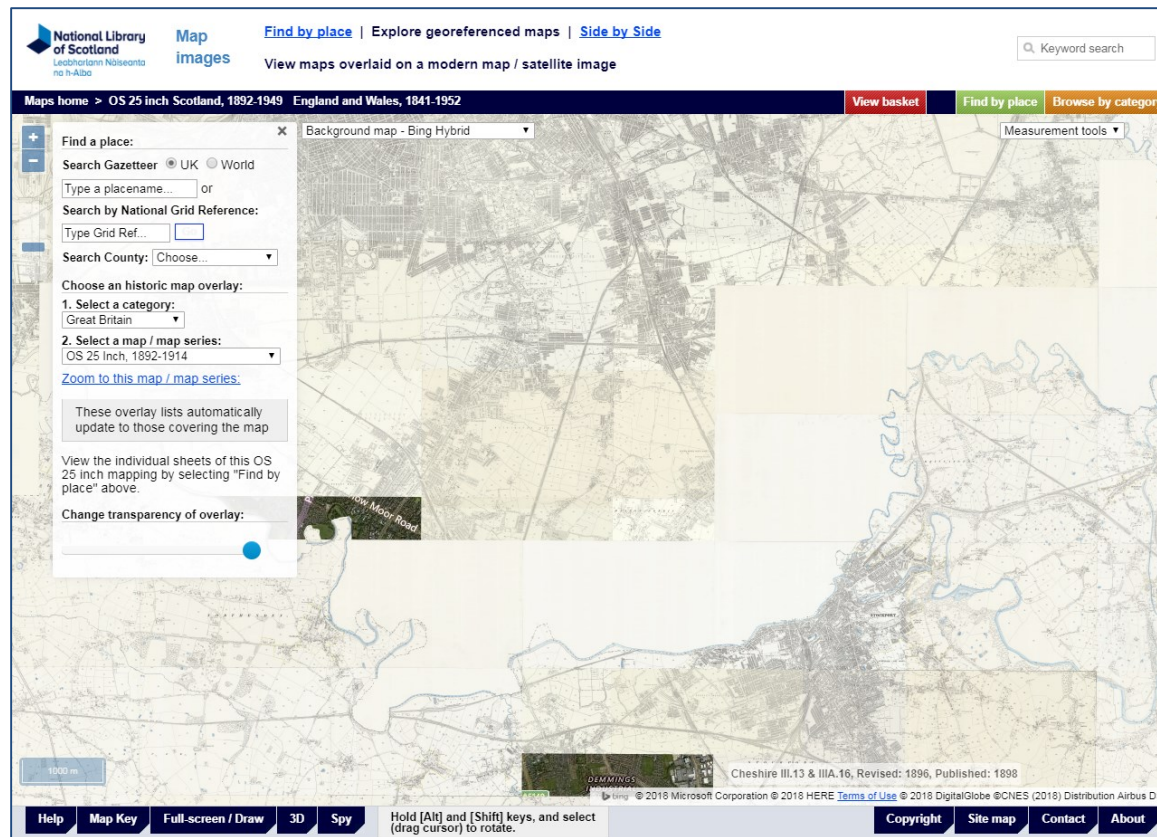
eg. <http://geo.nls.uk/maps/popular/7/62/88.png>



## SEAMLESS LAYER CREATED WITH MAPTILER



## CROPPING SHEETS IN GEOGRAPHIC IMAGER - BEFORE



The screenshot displays the National Library of Scotland's 'Map Images' interface. The main map area shows a georeferenced historical map overlay (OS 25 inch, 1892-1914) on a modern Bing Hybrid background map. The interface includes a search panel on the left with options for 'Find a place', 'Search Gazetteer', and 'Search by National Grid Reference'. The search panel also allows for selecting an 'historic map overlay' by category and map series. The map area includes a scale bar (1000 m) and a copyright notice at the bottom: 'Cheshire III.13 & IIIA.16, Revised: 1896, Published: 1898'. The footer contains navigation links: Help, Map Key, Full-screen / Draw, 3D, Spy, Copyright, Site map, Contact, and About.

**National Library of Scotland**  
Leabharlann Nàiseanta na h-Alba

**Map images** | [Find by place](#) | Explore georeferenced maps | [Side by Side](#)

View maps overlaid on a modern map / satellite image

Maps home > OS 25 inch Scotland, 1892-1949 | England and Wales, 1841-1952

View basket | Find by place | Browse by category

Background map - Bing Hybrid

Find a place:   Measurement tools

Search Gazetteer:  UK  World

Type a placename... or

Search by National Grid Reference:

Type Grid Ref...

Search County: Choose...

Choose an historic map overlay:

1. Select a category: Great Britain

2. Select a map / map series: OS 25 Inch, 1892-1914

[Zoom to this map / map series.](#)

These overlay lists automatically update to those covering the map

View the individual sheets of this OS 25 inch mapping by selecting "Find by place" above.

Change transparency of overlay:

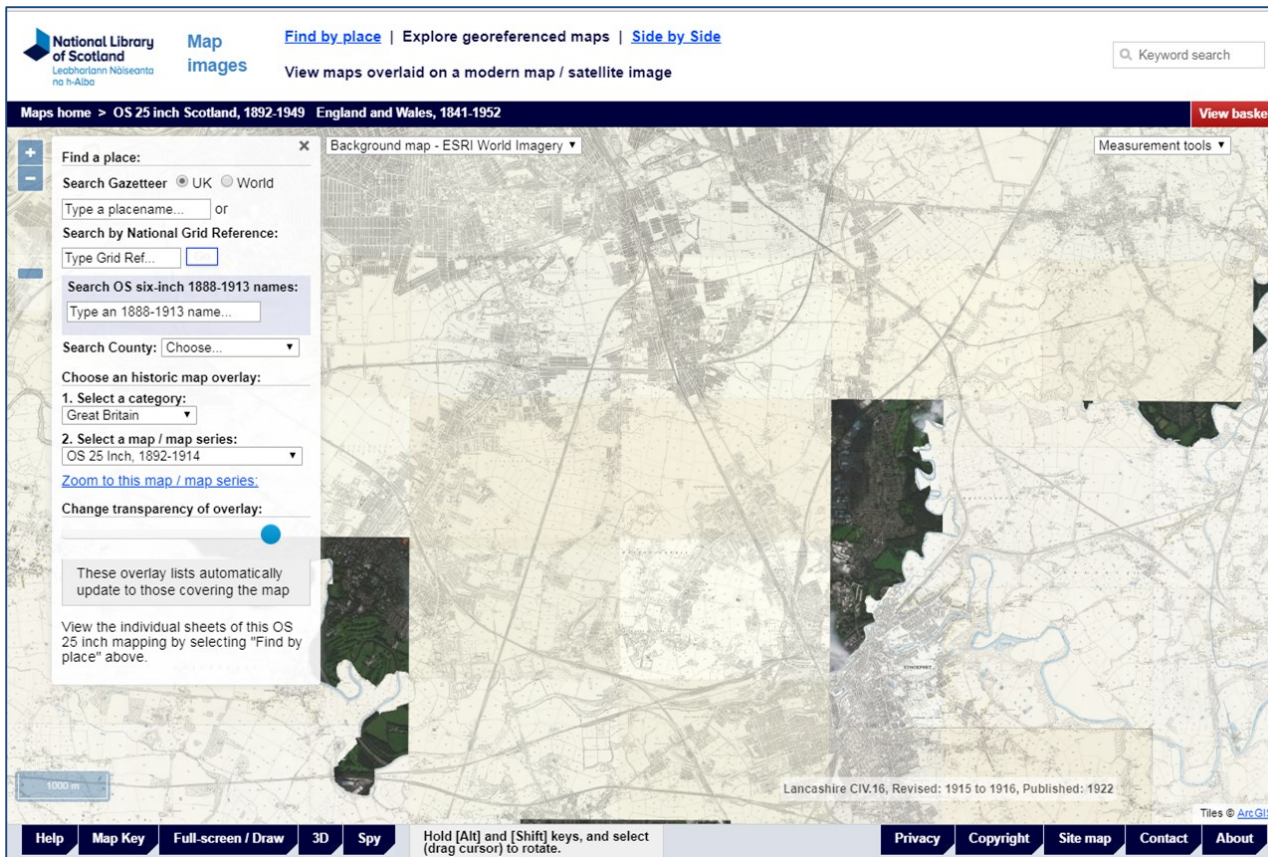
1000 m

Cheshire III.13 & IIIA.16, Revised: 1896, Published: 1898

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Help | Map Key | Full-screen / Draw | 3D | Spy | Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate. | Copyright | Site map | Contact | About

## CROPPING SHEETS IN GEOGRAPHIC IMAGER - AFTER



The screenshot displays the National Library of Scotland's online map interface. At the top left, the logo for the National Library of Scotland is visible, along with the text "Map images". To the right, there are navigation links: "Find by place", "Explore georeferenced maps", and "Side by Side". A search bar with the placeholder text "Keyword search" is located in the top right corner.

The main content area features a dark blue header with the text "Maps home > OS 25 inch Scotland, 1892-1949 England and Wales, 1841-1952" and a "View basket" button on the right. Below this header, a search panel is open on the left side, titled "Find a place:". It includes several search options: "Search Gazetteer" with radio buttons for "UK" and "World", a text input field for "Type a placename...", and an "or" separator. Below this is "Search by National Grid Reference:" with a "Type Grid Ref..." input field. Further down is "Search OS six-inch 1888-1913 names:" with a "Type an 1888-1913 name..." input field. There is also a "Search County:" dropdown menu. The panel then asks to "Choose an historic map overlay:" with two steps: "1. Select a category:" (with a dropdown set to "Great Britain") and "2. Select a map / map series:" (with a dropdown set to "OS 25 inch, 1892-1914"). A link "Zoom to this map / map series:" is provided. Below the search options is a "Change transparency of overlay:" slider, currently set to 100%. A note states: "These overlay lists automatically update to those covering the map". At the bottom of the search panel, it says: "View the individual sheets of this OS 25 inch mapping by selecting 'Find by place' above."

The main map area shows a georeferenced map of a rural landscape. A semi-transparent overlay of a different map is visible, showing a different perspective of the same area. A "Background map - ESRI World Imagery" dropdown is located at the top of the map area. A "Measurement tools" dropdown is in the top right of the map area. A scale bar for 1000m is in the bottom left. At the bottom right of the map, it says "Lancashire CIV.16, Revised: 1915 to 1916, Published: 1922".

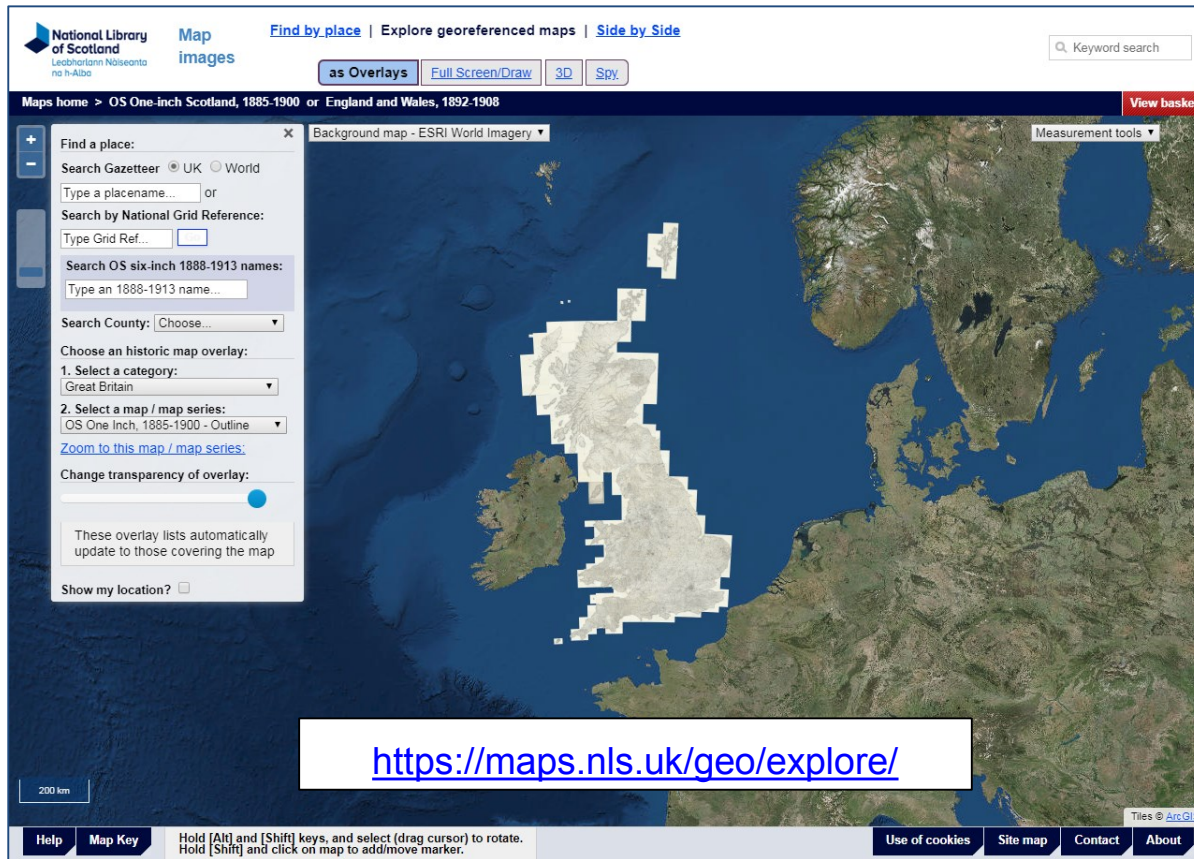
The footer contains a navigation bar with buttons for "Help", "Map Key", "Full-screen / Draw", "3D", "Spy", "Privacy", "Copyright", "Site map", "Contact", and "About". A note in the center of the footer says: "Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate." The text "Tiles © ArcGIS" is visible in the bottom right corner of the map area.



- Introduction
- Georeferencing workflows
- **Open-source viewers**
- Onward use and re-use
- Conclusions



## EXPLORE GEOREFERENCED MAPS VIEWER



The screenshot displays the National Library of Scotland's 'Explore georeferenced maps' interface. The page features a search sidebar on the left, a central map area, and a top navigation bar. The sidebar includes search options for Gazetteer, National Grid Reference, and OS six-inch names, along with a 'Choose an historic map overlay' section. The map shows a georeferenced overlay of Great Britain. The top navigation bar includes the NLS logo, 'Map images', and navigation links like 'Find by place' and 'Side by Side'. A search bar is located in the top right. The bottom of the page contains a footer with 'Help', 'Map Key', 'Use of cookies', 'Site map', 'Contact', and 'About' links.

**National Library of Scotland** Map images [Find by place](#) | Explore georeferenced maps | [Side by Side](#)

as Overlays [Full Screen/Draw](#) 3D [Spy](#)

Maps home > OS One-inch Scotland, 1885-1900 or England and Wales, 1892-1908 [View basket](#)

Background map - ESRI World Imagery

**Find a place:**

Search Gazetteer  UK  World  
Type a placename... or

Search by National Grid Reference:  
Type Grid Ref.

Search OS six-inch 1888-1913 names:  
Type an 1888-1913 name...

Search County:

Choose an historic map overlay:  
1. Select a category:

2. Select a map / map series:  
OS One Inch, 1885-1900 - Outline

[Zoom to this map / map series.](#)

Change transparency of overlay:

These overlay lists automatically update to those covering the map

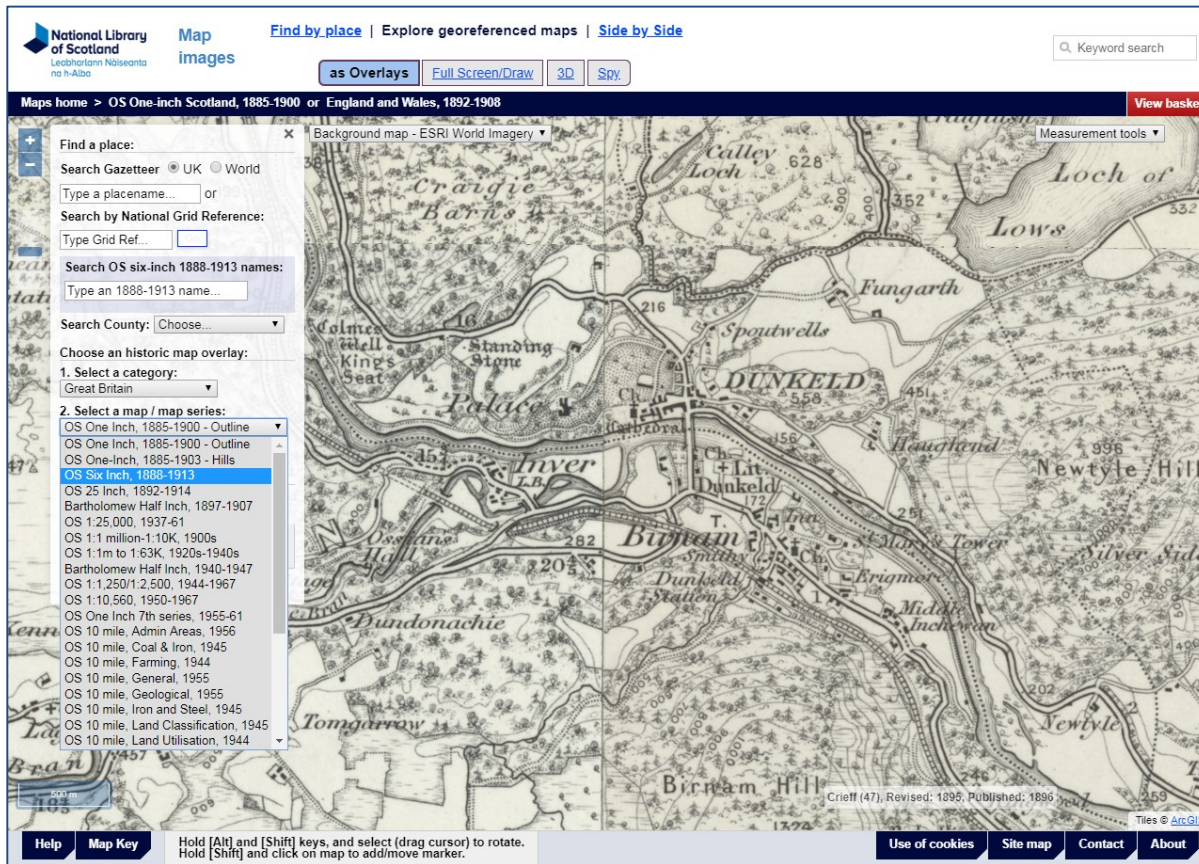
Show my location?

200 km

<https://maps.nls.uk/geo/explore/>

Help Map Key Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate. Hold [Shift] and click on map to add/move marker. Use of cookies Site map Contact About Tiles © ArcGIS

## EXPLORE GEOREFERENCED MAPS VIEWER - CHOOSING LAYERS



National Library of Scotland  
Leabharlann Nàiseanta na h-Alba

Map images

Find by place | Explore georeferenced maps | Side by Side

as Overlays Full Screen/Draw 3D Spy

Keyword search

Maps home > OS One-inch Scotland, 1885-1900 or England and Wales, 1892-1908 View basket

Background map - ESRI World Imagery

Measurement tools

Find a place:

Search Gazetteer  UK  World

Type a placename... or

Search by National Grid Reference:

Type Grid Ref...

Search OS six-inch 1888-1913 names:

Type an 1888-1913 name...

Search County:

Choose an historic map overlay:

1. Select a category:

Great Britain

2. Select a map / map series:

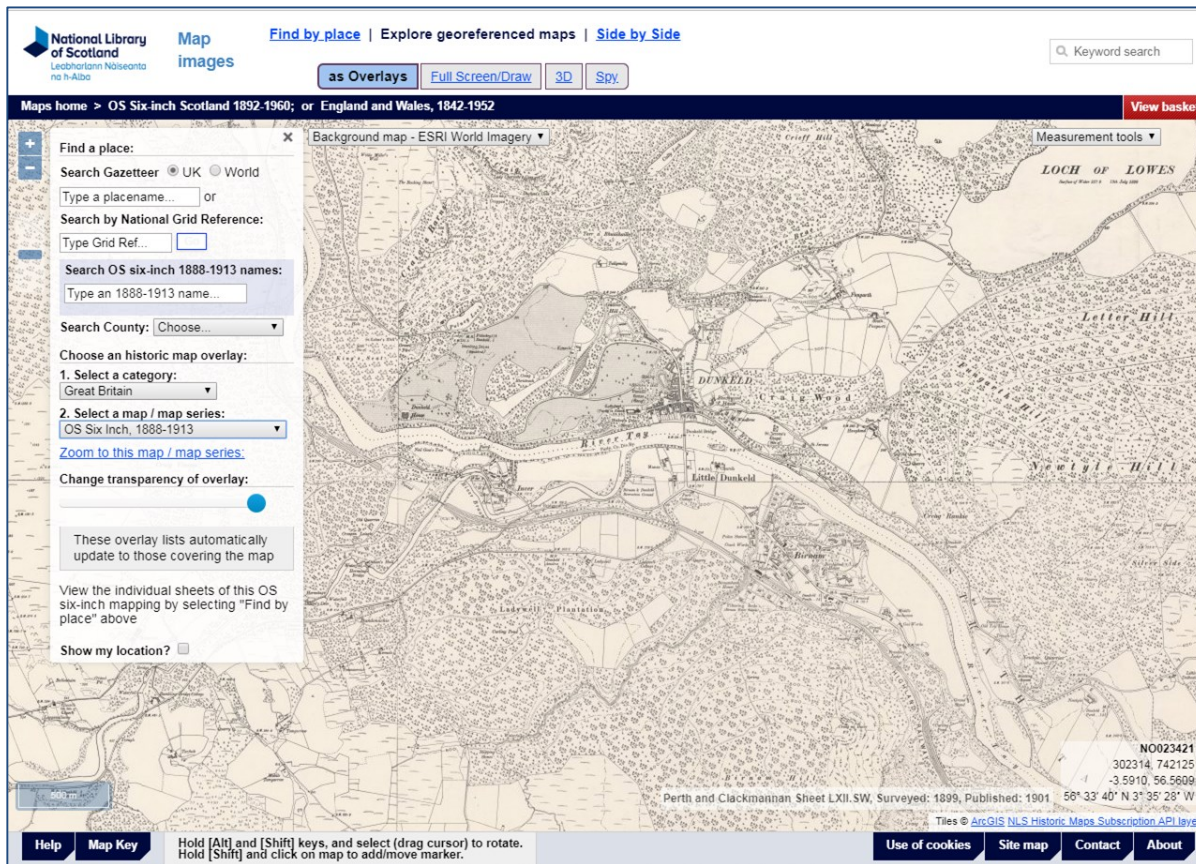
- OS One Inch, 1885-1900 - Outline
- OS One Inch, 1885-1900 - Outline
- OS One-Inch, 1885-1903 - Hills
- OS Six Inch, 1888-1913**
- OS 25 Inch, 1892-1914
- Bartholomew Half Inch, 1897-1907
- OS 1:25,000, 1937-61
- OS 1:1 million-1:10K, 1900s
- OS 1:1m to 1:63K, 1920s-1940s
- Bartholomew Half Inch, 1940-1947
- OS 1:1,250/1:2,500, 1944-1967
- OS 1:10,560, 1950-1967
- OS One Inch 7th series, 1955-61
- OS 10 mile, Admin Areas, 1956
- OS 10 mile, Coal & Iron, 1945
- OS 10 mile, Farming, 1944
- OS 10 mile, General, 1955
- OS 10 mile, Geological, 1955
- OS 10 mile, Iron and Steel, 1945
- OS 10 mile, Land Classification, 1945
- OS 10 mile, Land Utilisation, 1944

Help Map Key

Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate.  
Hold [Shift] and click on map to add/move marker.

Use of cookies Site map Contact About

## EXPLORE GEOREFERENCED MAPS VIEWER - CHOOSING LAYERS



**National Library of Scotland** | [Map images](#) | [Find by place](#) | [Explore georeferenced maps](#) | [Side by Side](#)

as Overlays | [Full Screen/Draw](#) | [3D](#) | [Soy](#)

Maps home > [OS Six-inch Scotland 1892-1960](#); or [England and Wales, 1842-1952](#) [View basket](#)

Find a place:  Background map - [ESRI World Imagery](#) [Measurement tools](#)

Search Gazetteer  UK  World  
Type a placename... or  
Search by National Grid Reference:  
Type Grid Ref...

Search OS six-inch 1888-1913 names:  
Type an 1888-1913 name...

Search County: Choose...

Choose an historic map overlay:  
1. Select a category:  
  
2. Select a map / map series:  
  
[Zoom to this map / map series.](#)

Change transparency of overlay:

These overlay lists automatically update to those covering the map

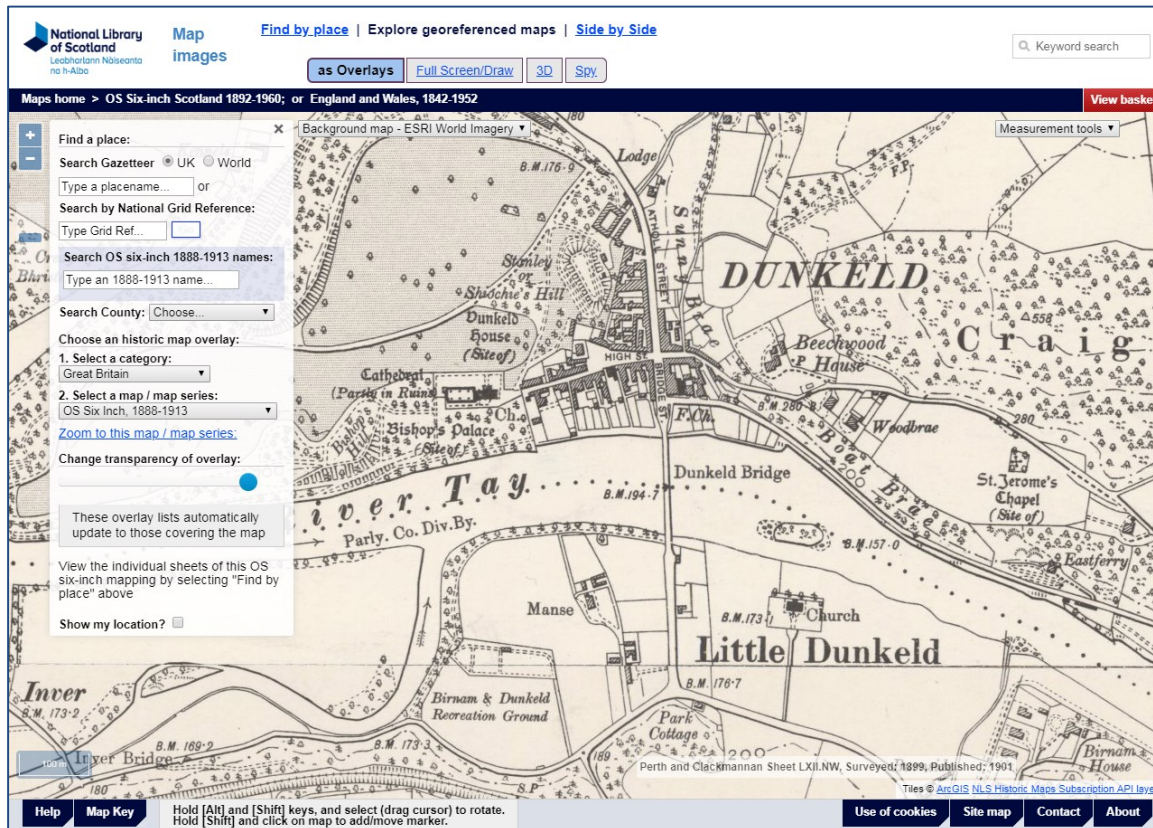
View the individual sheets of this OS six-inch mapping by selecting "Find by place" above

Show my location?

Perth and Clackmannan Sheet LXII.SW, Surveyed: 1899, Published: 1901 56° 33' 40" N 3° 35' 28" W  
NO023421  
302314, 742125  
-3,5910, 56,5609  
Tiles © [ArcGIS NLS Historic Maps Subscription API layer](#)

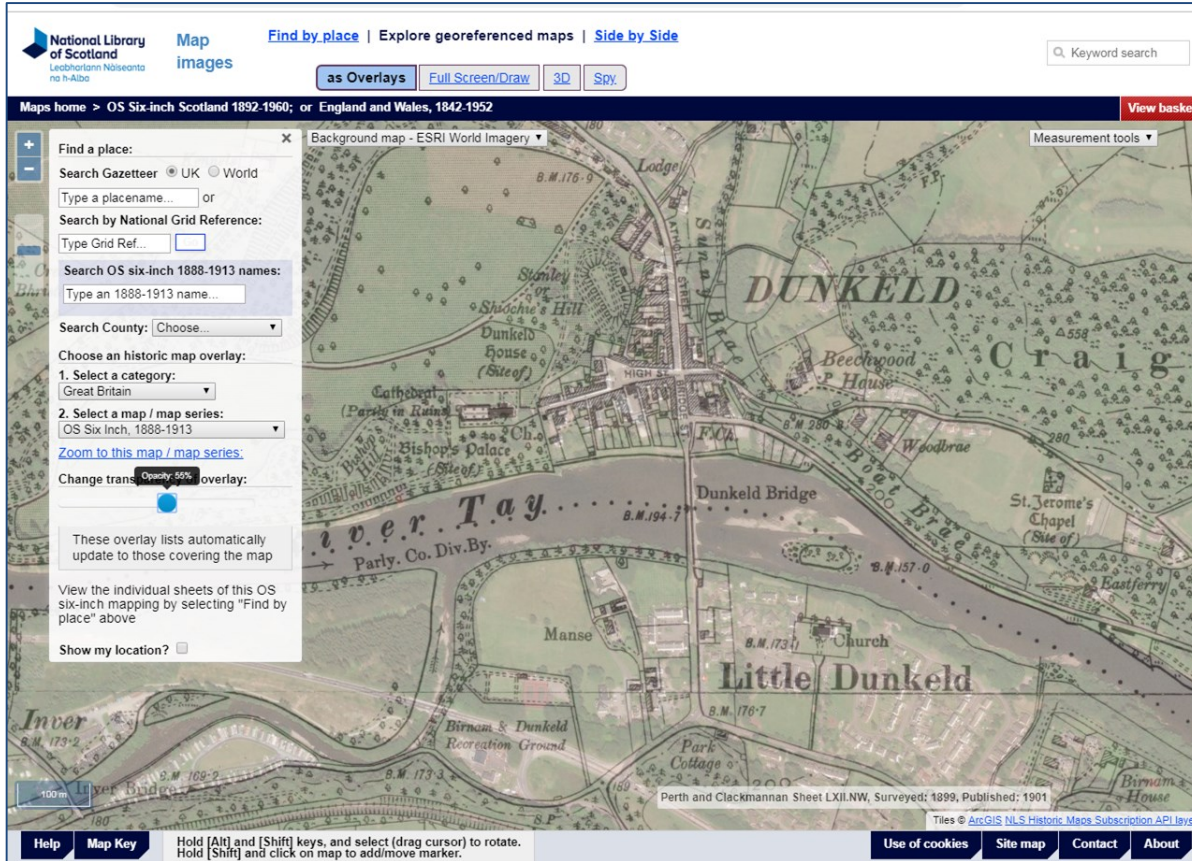
[Help](#) [Map Key](#) [Hold \[Alt\] and \[Shift\] keys, and select \(drag cursor\) to rotate. Hold \[Shift\] and click on map to add/move marker.](#) [Use of cookies](#) [Site map](#) [Contact](#) [About](#)

## EXPLORE GEOREFERENCED MAPS VIEWER - CHANGING TRANSPARENCY



The screenshot displays the National Library of Scotland's Georeferenced Maps Viewer interface. The main map area shows a historical OS six-inch map of Dunkeld and Little Dunkeld, with labels for 'DUNKELD', 'Little Dunkeld', 'Craig', 'Woodbrae', 'Dunkeld Bridge', 'Manse', 'Church', 'Bishop's Palace', 'Dunkeld House (Site of)', 'Cathedral (Partly in Ruins)', 'St. Jerome's Chapel (Site of)', 'Eastferry', 'Park Cottage', and 'Birnham House'. The map is overlaid with a modern background map (ESRI World Imagery). The interface includes a search bar at the top right with the text 'Keyword search'. Below the search bar are navigation buttons: 'as Overlays', 'Full Screen/Draw', '3D', and 'Sov'. The main navigation bar shows 'Maps home > OS Six-inch Scotland 1892-1960; or England and Wales, 1842-1952' and a 'View basket' button. On the left side, there is a search panel with the following sections: 'Find a place:' with 'Search Gazetteer' (UK or World) and 'Type a placename... or Search by National Grid Reference: Type Grid Ref...'; 'Search OS six-inch 1888-1913 names: Type an 1888-1913 name...'; 'Search County: Choose...'; 'Choose an historic map overlay: 1. Select a category: Great Britain; 2. Select a map / map series: OS Six inch, 1888-1913; Zoom to this map / map series; Change transparency of overlay: [Slider]; These overlay lists automatically update to those covering the map; View the individual sheets of this OS six-inch mapping by selecting "Find by place" above; Show my location? [checkbox]. At the bottom, there is a footer with 'Help', 'Map Key', 'Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate. Hold [Shift] and click on map to add/move marker.', 'Use of cookies', 'Site map', 'Contact', and 'About'.

## EXPLORE GEOREFERENCED MAPS VIEWER - CHANGING TRANSPARENCY



The screenshot displays the National Library of Scotland's Georeferenced Maps Viewer interface. The main map area shows a historical map of Dunkeld, Scotland, with labels for 'Dunkeld', 'Craig', 'Little Dunkeld', and 'Inver'. The River Tay is visible, along with landmarks like 'Dunkeld Bridge', 'Beechwood House', and 'St. Jerome's Chapel'. The interface includes a search panel on the left with options for 'Find a place', 'Search Gazetteer', and 'Search by National Grid Reference'. A 'Change transparency' slider is set to 55%. The bottom of the page features navigation links: 'Help', 'Map Key', 'Use of cookies', 'Site map', 'Contact', and 'About'. The footer also includes copyright information: 'Perth and Clackmannan Sheet LXII NW, Surveyed: 1899, Published: 1901' and 'Tiles © ArcGIS NLS Historic Maps Subscription API layer'.

**National Library of Scotland** Map images [Find by place](#) | [Explore georeferenced maps](#) | [Side by Side](#)

as Overlays Full Screen/Draw 3D Spy

Maps home > OS Six-inch Scotland 1892-1960; or England and Wales, 1842-1952 [View basket](#)

Background map - ESRI World Imagery Measurement tools

Find a place:

Search Gazetteer  UK  World

Type a placename... or

Search by National Grid Reference:

Type Grid Ref...

Search OS six-inch 1888-1913 names:

Type an 1888-1913 name...

Search County:

Choose an historic map overlay:

1. Select a category:

2. Select a map / map series:

[Zoom to this map / map series:](#)

Change transparency:  55% overlay:

These overlay lists automatically update to those covering the map

View the individual sheets of this OS six-inch mapping by selecting "Find by place" above

Show my location?

Perth and Clackmannan Sheet LXII NW, Surveyed: 1899, Published: 1901

Tiles © ArcGIS NLS Historic Maps Subscription API layer

[Help](#) [Map Key](#) [Use of cookies](#) [Site map](#) [Contact](#) [About](#)

Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate. Hold [Shift] and click on map to add/move marker.

## EXPLORE GEOREFERENCED MAPS VIEWER - CHANGING TRANSPARENCY



**National Library of Scotland** **Map images** [Find by place](#) | [Explore georeferenced maps](#) | [Side by Side](#)

as Overlays Full Screen/Draw 3D Spy

Maps home > OS Six-inch Scotland 1892-1960; or England and Wales, 1842-1952 [View basket](#)

Background map - ESRI World Imagery Measurement tools

**Find a place:**

Search Gazetteer  UK  World

Type a placename... or

Search by National Grid Reference:

Type Grid Ref...

Search OS six-inch 1888-1913 names:

Type an 1888-1913 name...

Search County:

Choose an historic map overlay:

1. Select a category:

2. Select a map / map series:

[Zoom to this map / map series.](#)

Change transparency of overlay:

These overlay lists automatically update to those covering the map

View the individual sheets of this OS six-inch mapping by selecting "Find by place" above


Show my location?

Perth and Clackmannan Sheet LXILNW, Surveyed: 1899, Published: 1901

Tiles © ArcGIS NLS Historic Maps Subscription API layer

[Help](#) [Map Key](#) Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate. Hold [Shift] and click on map to add/move marker. [Use of cookies](#) [Site map](#) [Contact](#) [About](#)

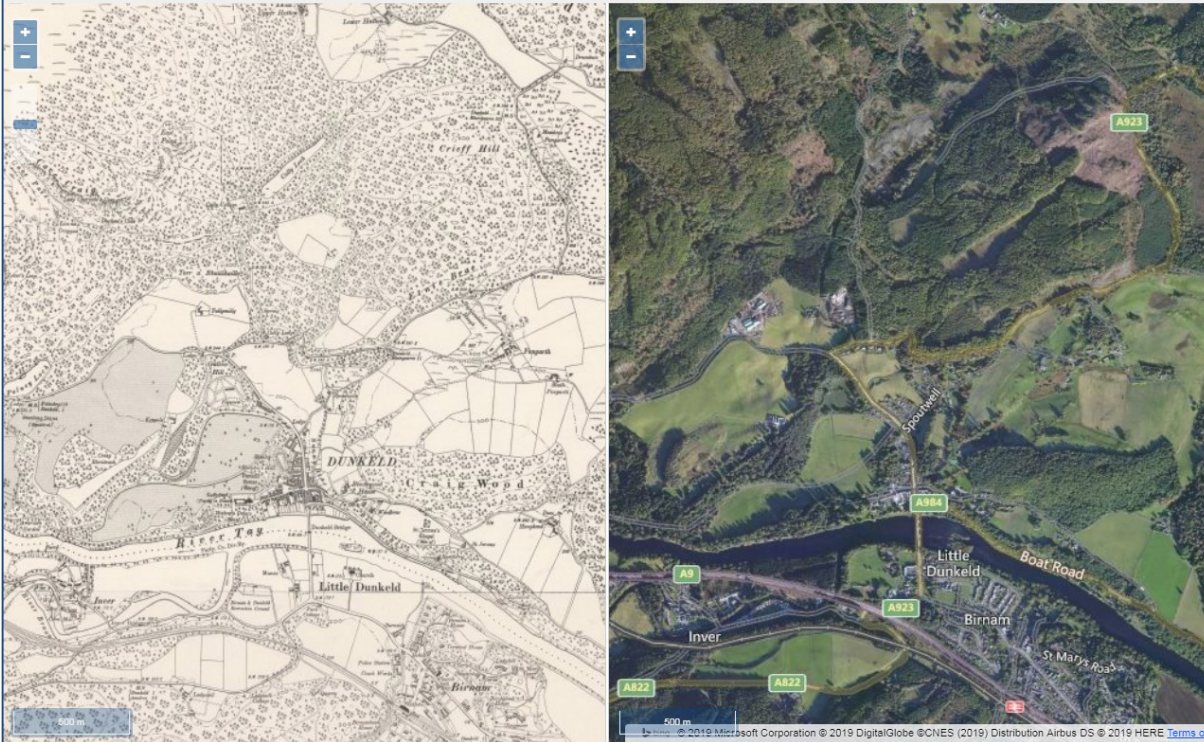
## EXPLORE GEOREFERENCED MAPS VIEWER - SIDE-BY-SIDE

 **Map images** [Find by place](#) | [Explore Georeferenced Maps](#) | Side by Side

Swipe OFF  Swipe ON

1. Select a category:  1. Select a category:

2. Select a map series:  [Zoom to extent](#) 2. Select a map series:  [Zoom to extent](#)

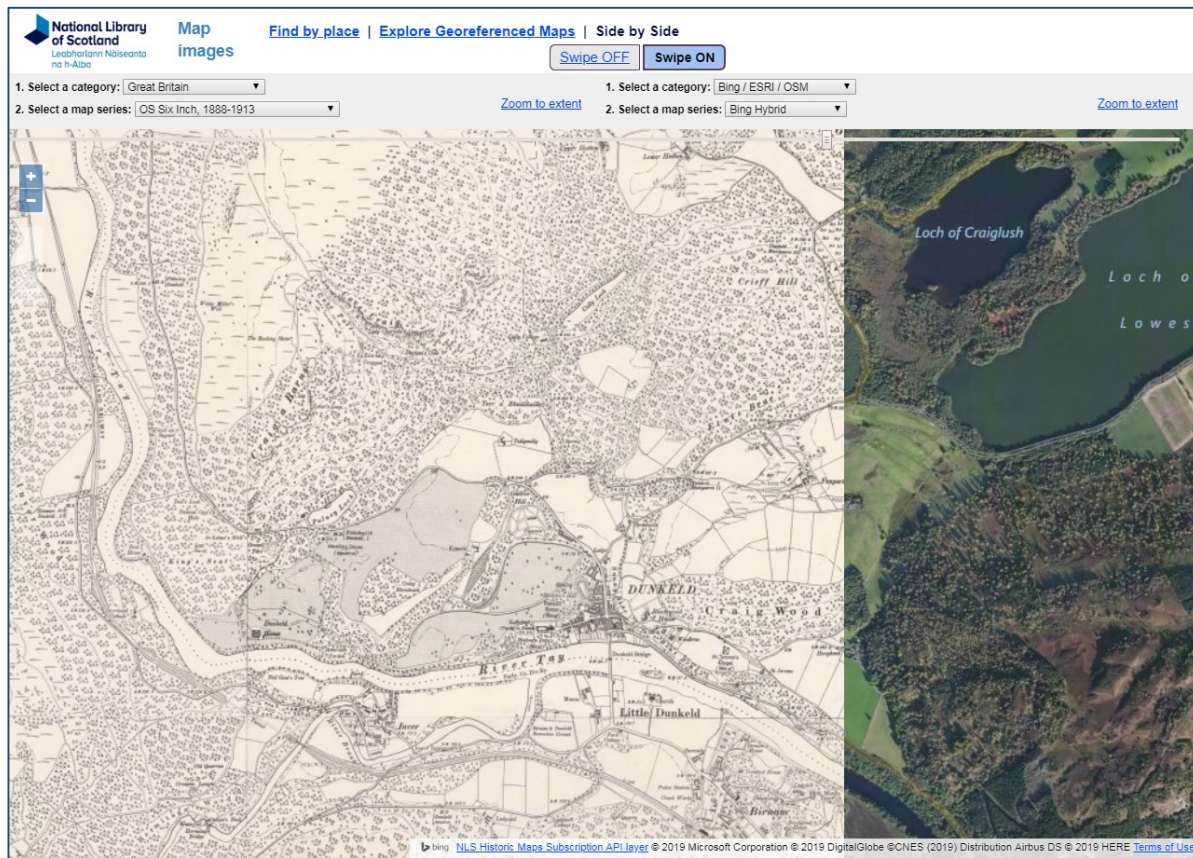


500 m 500 m

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## EXPLORE GEOREFERENCED MAPS VIEWER - SIDE-BY-SIDE WITH SWIPE




The screenshot displays the National Library of Scotland's georeferenced maps viewer interface. At the top left, the NLS logo and name are visible. The main navigation area includes a 'Map images' section, a 'Find by place' search bar, and a 'Side by Side' view selector with 'Swipe OFF' and 'Swipe ON' buttons. Below this, there are two columns of map selection options:

- Column 1: 1. Select a category: Great Britain; 2. Select a map series: OS Six Inch, 1888-1913. A 'Zoom to extent' link is provided.
- Column 2: 1. Select a category: Bing / ESRI / OSM; 2. Select a map series: Bing Hybrid. A 'Zoom to extent' link is provided.

The main content area is split into two panels. The left panel shows a historical OS Six Inch map from 1888-1913, featuring detailed topographical information, roads, and buildings. The right panel shows a modern Bing satellite image of the same area, highlighting the changes in land use and vegetation. The map shows the town of Dunkeld, with labels for 'Loch of Craiglush', 'Loch of Lowes', 'DUNKELD', 'Craig Wood', and 'Little Dunkeld'. The interface also includes a 'bing' logo and a 'NLS Historic Maps Subscription API layer' link at the bottom.

## EXPLORE GEOREFERENCED MAPS VIEWER - SIDE-BY-SIDE


 **Map images** [Find by place](#) | [Explore Georeferenced Maps](#) | Side by Side

1. Select a category:

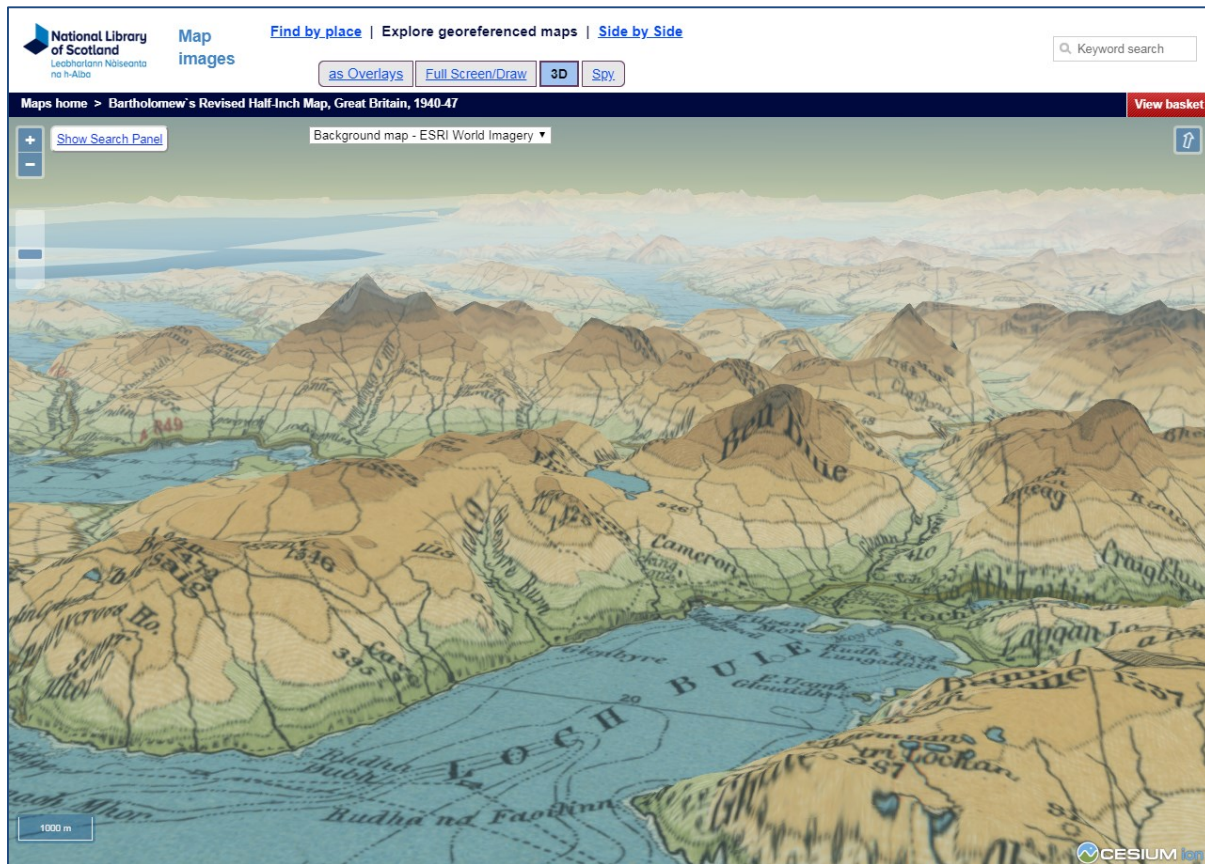
2. Select a map series:

1. Select a category:

2. Select a map series:

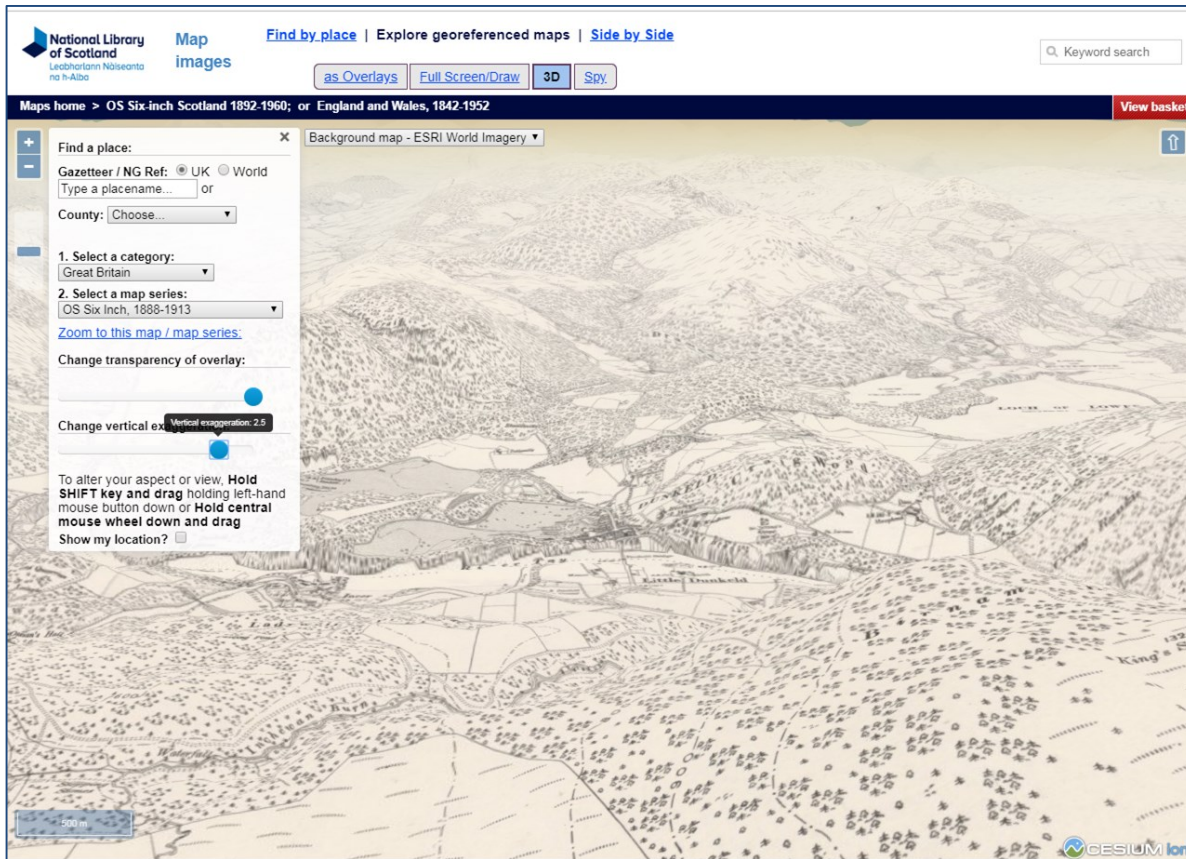


## EXPLORE GEOREFERENCED MAPS VIEWER - 3D VIEWER



The screenshot displays the National Library of Scotland's 3D viewer interface. At the top left, the logo for the National Library of Scotland (Leabharlann Nàiseanta na h-Alba) is visible. The main navigation bar includes the text "Map images" and a search box with the placeholder "Keyword search". Below this, there are buttons for "as Overlays", "Full Screen/Draw", "3D", and "Spy". The current map title is "Maps home > Bartholomew's Revised Half-Inch Map, Great Britain, 1940-47", and a "View basket" button is located on the right. A "Show Search Panel" button is on the left, and the background map is identified as "ESRI World Imagery". The central area shows a 3D topographic map of a mountainous region in Great Britain, with labels for "LOCH BOLE" and "Lammeron". A scale bar at the bottom left indicates "1000 m". The Cesium logo is in the bottom right corner.

## EXPLORE GEOREFERENCED MAPS VIEWER - 3D VIEWER

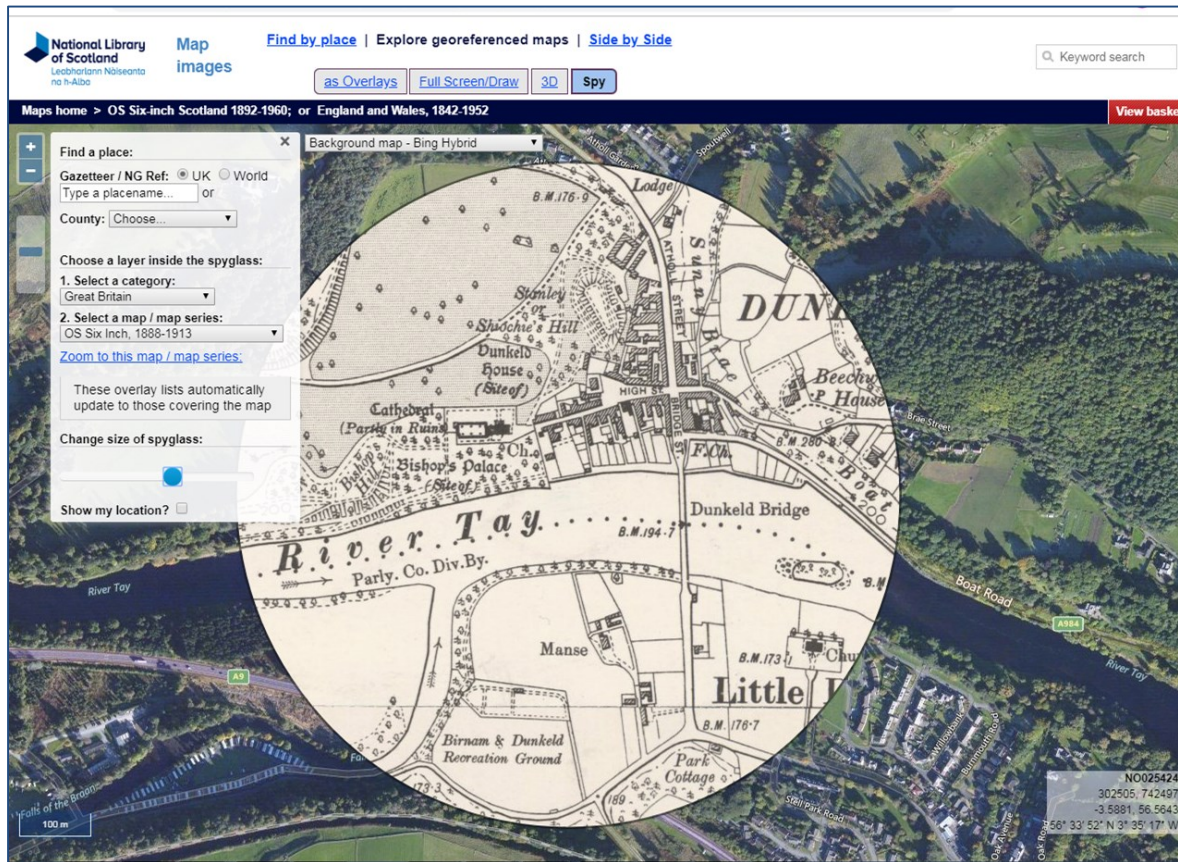


The screenshot displays the National Library of Scotland's 3D map viewer interface. The main map area shows a 3D topographic view of a region in Scotland, with terrain shaded in brown and green, and buildings and roads visible. The interface includes a search bar at the top right with the text "Keyword search". Below the search bar, there are navigation options: "as Overlays", "Full Screen/Draw", "3D", and "Spy". The main navigation bar shows "Maps home > OS Six-inch Scotland 1892-1960; or England and Wales, 1842-1952" and a "View basket" button. On the left side, there is a control panel with the following elements:

- Find a place:** A search box with a close button (X).
- Gazetteer / NG Ref:** Radio buttons for "UK" (selected) and "World".
- Type a placename...** or **or** **County:** Choose...
- 1. Select a category:** Great Britain
- 2. Select a map series:** OS Six Inch, 1888-1913
- [Zoom to this map / map series.](#)
- Change transparency of overlay:** A slider control.
- Change vertical exaggeration:** A slider control set to 2.5.
- To alter your aspect or view, Hold SHIFT key and drag** holding left-hand mouse button down or **Hold central mouse wheel down and drag**
- Show my location?**

At the bottom left, there is a scale bar for 500 meters. At the bottom right, the "CESIUM ion" logo is visible.

## EXPLORE GEOREFERENCED MAPS VIEWER - SPY VIEWER

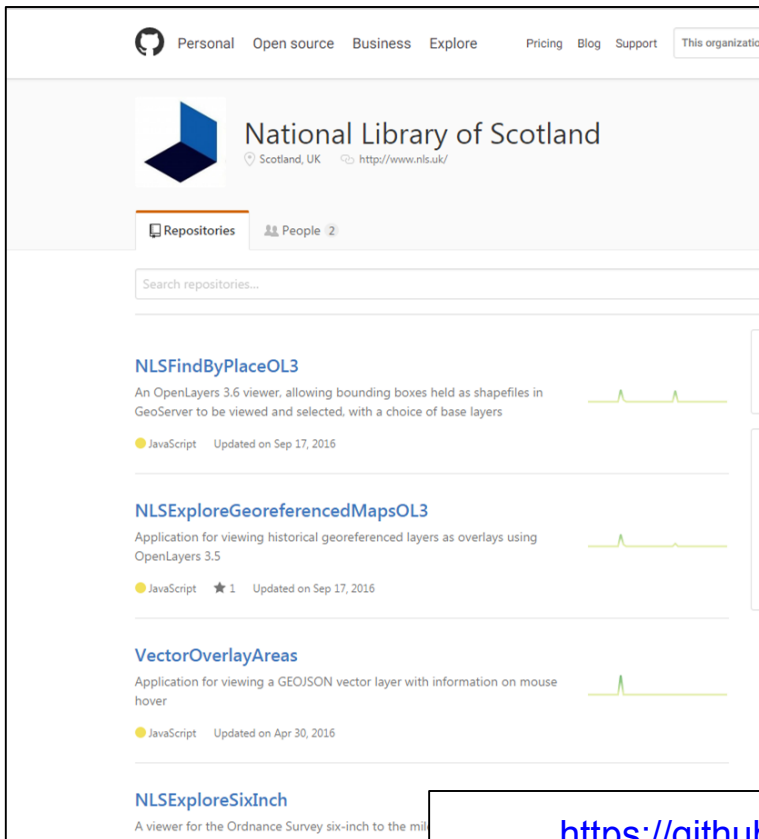


The screenshot displays the National Library of Scotland's 'Spy Viewer' interface. At the top left, the logo for the National Library of Scotland is visible, along with the text 'Map images'. Navigation links include 'Find by place', 'Explore georeferenced maps', and 'Side by Side'. A search bar with the placeholder text 'Keyword search' is located at the top right. Below the navigation, there are buttons for 'as Overlays', 'Full Screen/Draw', '3D', and 'Spy'. A dark banner at the top of the map area reads 'Maps home > OS Six-inch Scotland 1892-1960; or England and Wales, 1842-1952' and includes a 'View basket' link.

The main map area shows a satellite view of Dunkeld, Scotland, with a large circular georeferenced map overlay. The overlay map is a historical Ordnance Survey map from 1892-1960, showing the River Tay, Dunkeld Bridge, and various buildings and landmarks. Labels on the map include 'Dunkeld', 'River Tay', 'Dunkeld Bridge', 'Bishop's Palace', 'Dunkeld House (Site of)', 'Manse', 'Park Cottage', and 'Little'. A scale bar at the bottom left indicates 100 meters. A coordinate box at the bottom right shows the following data: NO025424, 302505.742497, -3.5881, 56.5643, and 56° 33' 52" N 3° 35' 17" W.

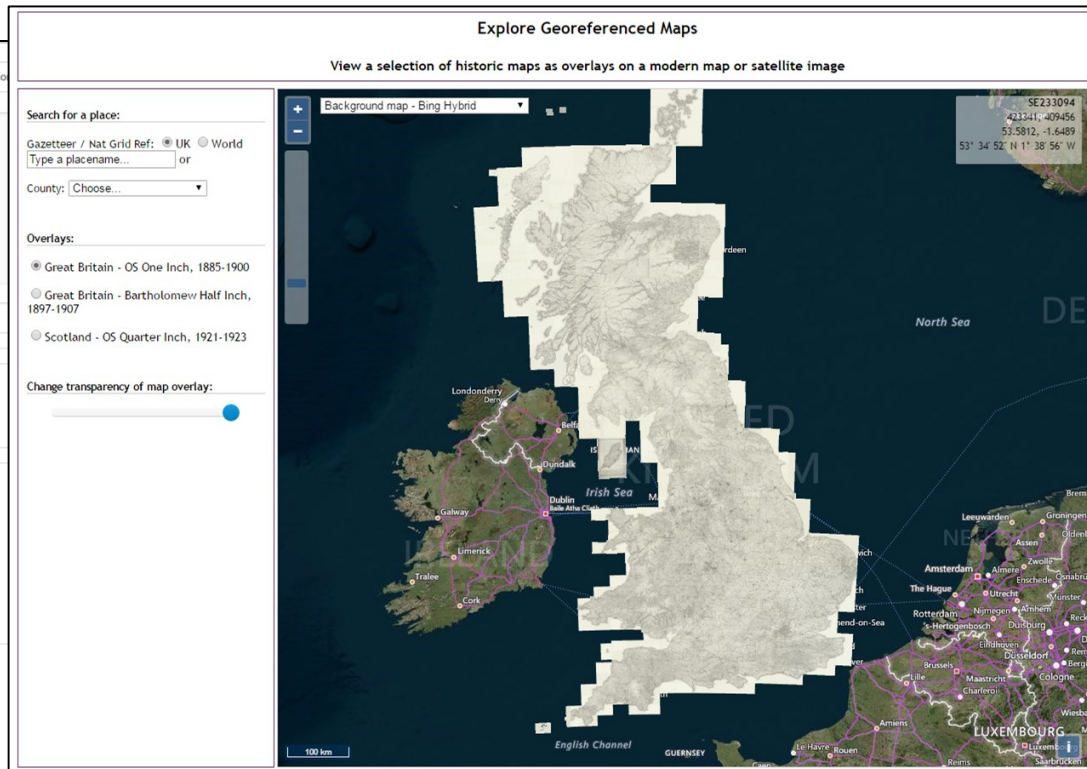
On the left side of the map, there is a control panel for the spyglass. It includes a 'Find a place:' section with a search box and options for 'Gazetteer / NG Ref.' (UK or World) and 'County: Choose...'. Below this is a 'Choose a layer inside the spyglass:' section with two steps: '1. Select a category:' (Great Britain) and '2. Select a map / map series:' (OS Six Inch, 1888-1913). A link 'Zoom to this map / map series:' is provided. A 'Change size of spyglass:' section has a slider and a 'Show my location?' checkbox.

## SHARING CODE FOR VIEWERS ON GITHUB



The screenshot shows the GitHub profile for the National Library of Scotland. The profile includes the organization's name, location (Scotland, UK), and website (http://www.nls.uk/). Below the profile information, there are sections for 'Repositories' and 'People'. A search bar is present for finding repositories. The repository list includes:

- NLSFindByPlaceOL3**: An OpenLayers 3.6 viewer, allowing bounding boxes held as shapefiles in GeoServer to be viewed and selected, with a choice of base layers. JavaScript. Updated on Sep 17, 2016.
- NLSExploreGeoreferencedMapsOL3**: Application for viewing historical georeferenced layers as overlays using OpenLayers 3.5. JavaScript. 1 star. Updated on Sep 17, 2016.
- VectorOverlayAreas**: Application for viewing a GEOJSON vector layer with information on mouse hover. JavaScript. Updated on Apr 30, 2016.
- NLSExploreSixInch**: A viewer for the Ordnance Survey six-inch to the mile maps.



The screenshot shows the 'Explore Georeferenced Maps' application interface. The title is 'Explore Georeferenced Maps' and the subtitle is 'View a selection of historic maps as overlays on a modern map or satellite image'. The interface includes a search bar for a place, a dropdown for the background map (set to 'Bing Hybrid'), and a list of overlays to be displayed:

- Great Britain - OS One Inch, 1885-1900
- Great Britain - Bartholomew Half Inch, 1897-1907
- Scotland - OS Quarter Inch, 1921-1923

There is also a slider to 'Change transparency of map overlay:'. The main map area shows a modern map of Europe with historical map overlays. A coordinate box in the top right corner displays: SE233094, 423241, 409456, 53.5812, -1.6489, 53° 34' 52" N 1° 38' 56" W. A 100 km scale bar is visible at the bottom left of the map.

<https://github.com/NationalLibraryOfScotland>

- Introduction
- Georeferencing workflows
- Open-source viewers
- **Onward use and re-use**
- Conclusions



## HISTORIC MAPS API

 **National Library of Scotland**  
Leabharlann Nàiseanta na h-Alba

Map images

🔍 Keyword search

Maps home > Projects > Historical Maps API

Find by place

Browse by category

### NLS Historic Maps API: Historical Maps of Great Britain for use in mashups

This seamless historic map can be:

- embedded in your own website
- used for research purposes
- used as a backdrop for your own markers or geographic data
- used to create derivative work (such as [OpenStreetMap](#)) from it.

The mapping is based on out-of-copyright Ordnance Survey maps, dating from the 1920s to the 1940s.

View more information on:

- [how to display the historic map in your mobile device or phone](#)
- [how to embed the historic map in your website](#)
- [how to use the map in a mashup](#)
- [announcement mailing list for news and updates](#)
- [licence and terms of use](#)
- [which map series are used](#)
- [how the historic map was prepared](#)

View our [Historic Maps Subscription API](#) for details of other map layers available by subscription

How to display the historic map in your mobile device or phone (including the Apple iPhone, iPad




Historical maps from 1919-47  NLS Maps API

<http://maps.nls.uk/projects/api/>



## HISTORIC MAPS API

**National Library of Scotland**  
Leabharlann Nàiseanta na h-Alba

[Map images](#)

[Maps home](#) > [Projects](#) > [Historical Maps API](#) [Find by place](#) [Browse by category](#)

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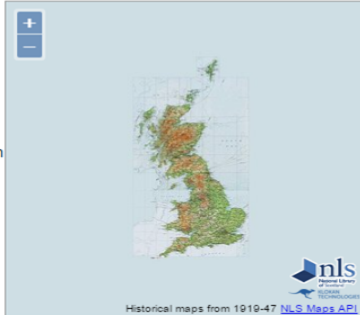
The mapping is based on out-of-copyright Ordnance Survey maps, dating from the 1920s to the 1940s.

View more information on:

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- [how to embed the historic map in your website](#)
- [how to use the map in a mashup](#)
- [announcement mailing list for news and updates](#)
- [licence and terms of use](#)
- [which map series are used](#)
- [how the historic map was prepared](#)

View our [Historic Maps Subscription API](#) for details of other map layers available by subscription

**How to display the historic map in your mobile device or phone (including the Apple iPhone, iPad**



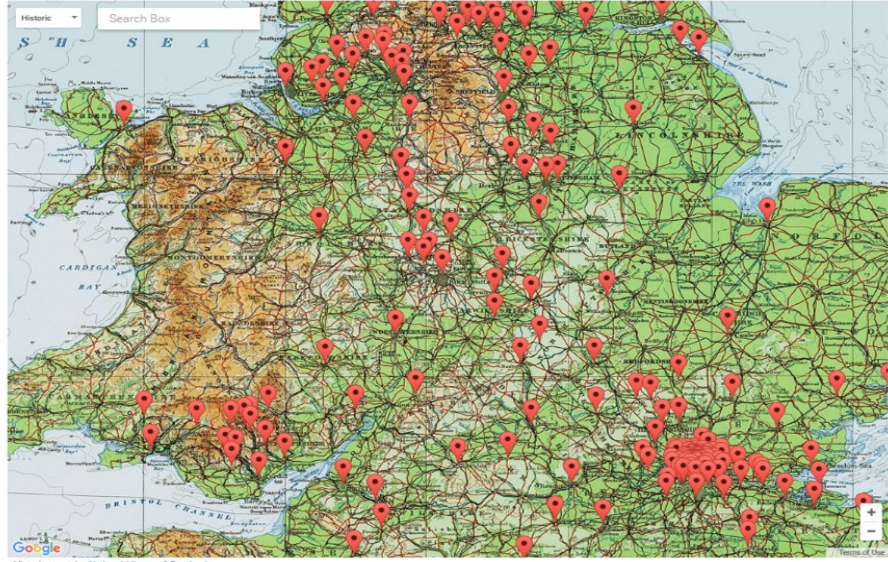
[The Library](#) > [Modern Records Centre](#)

[Our holdings](#) | [Use the Centre](#) | [Archive catalogue](#) | [Explore further](#) | [Events and series](#) | [Warwick students](#) | [Warwick teachers](#) | [Owners](#)

[Digital collections](#) > [Reporting the General Strike](#) > [General Strike map](#)

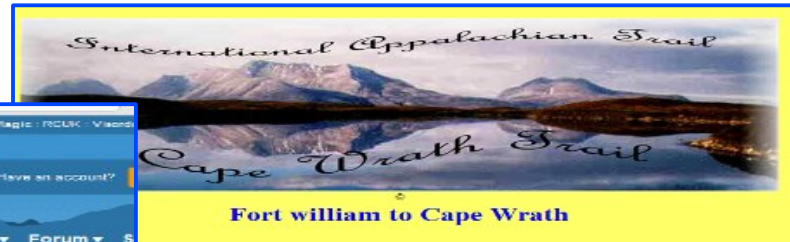
### General Strike map

What happened in your area during the General Strike? Click on the pins and follow the links to see selected documents from our [digital collection](#). Digitised documents will open in a new tab - click on 'next' and 'previous' (top right of the document image) to read neighbouring pages, and the + and - buttons to zoom.



<http://maps.nls.uk/projects/api/>

## API USER COMMUNITIES - OUTDOOR LEISURE



Welcome to Song of the Paddle the online home for those with a love of, or an interest in, open canoes and canoeing. For those who hear the siren call that draws them to the water in their open canoe.



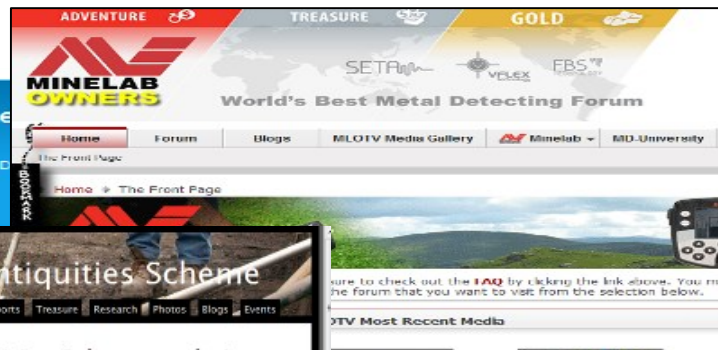
## API USER COMMUNITIES - METAL DETECTING



UK and European  
**Metal Detecting Forum**

Metal Detecting Me  
Resource

Metal Detecting Forum, Metal D



ADVENTURE TREASURE GOLD  
**MINELAB OWNERS**  
World's Best Metal Detecting Forum

Home Forum Blogs MLOTV Media Gallery Minelab MD-University

Home The Front Page



**detectorist.co.uk**  
setting the standard



Portable Antiquities Scheme  
**The Portable Antiquities Scheme**

Home Contacts Get involved Conservation Database News & reports Treasure Research Photos Blogs Events

Welcome to the Portable Antiquities Scheme website

The Portable Antiquities Scheme is a DCMS funded project to encourage the voluntary recording of archaeological objects found by the public in England and Wales. Every year many thousands of objects are discovered, many of these by metal-detector people whilst out walking, gardening or going about their daily work. Such discoveries offer an important source for the study of the past.

Our website provides background information on the Portable Antiquities Scheme, news articles, events listings and access to our archive of objects and images.

Under the Treasure Act



**DETECTING WALES.COM**  
The National Metal Detecting Website for Wales

Welcome, Guest. Please login or register.

Forever Login



**Rogers-Relics-uk.com**  
*The Independent Metal Detecting Site*



**FINDING THE PAST**

Welcome to Finding The Past, a website recording historic artefacts found by metal detectorist Dr Patrick Brown.

I am a keen supporter of the British Museum's Portable Antiquities Scheme, a voluntary scheme to record archaeological objects found by members of the public. With the help of Peter Reavill, the Shropshire and Herefordshire Finds Liaison Officer, I self record all my finds from before 1700 on this database.

For each find I detect I run a private section on this website, with photographs of each find and a link to its Portable Antiquities Scheme entry. After recording I am happy to share my finds with the farmer. Below are some sample finds. Just click on a find's photograph to see its webpage from one of the private sections.



**UK DETECTOR NET**  
**UK Detector Net**  
Your portal to the fascinating world of responsible detecting.

Register Login

Search

Gallery FAQ Search




Four photographs of archaeological finds:

- Iron Age Hoop 1550-1700
- Roman Pottery
- Medieval Coin
- Mesolithic Flint Core



## HISTORIC MAPS SUBSCRIPTION API

**National Library of Scotland**  
Leabharlann Nàiseanta na h-Alba

**Map images**

Keyword search

Maps home > Projects > Historic Maps Subscription API **View basket**

### NLS Historic Maps Subscription API

#### Detailed historical Maps of Great Britain for use in mashups

These seamless historic map layers can be:


- embedded into your own website
- used for research purposes
- used as a backdrop for your own markers or geographic data
- used as a layer inside desktop GIS software

These layers complement our free [NLS Historic Maps API](#), which makes available layers of mapping covering Great Britain from 1:1 million to 1:63,360 scales, dating between the 1920s and 1940s. We intend to continue this as a freely available service.

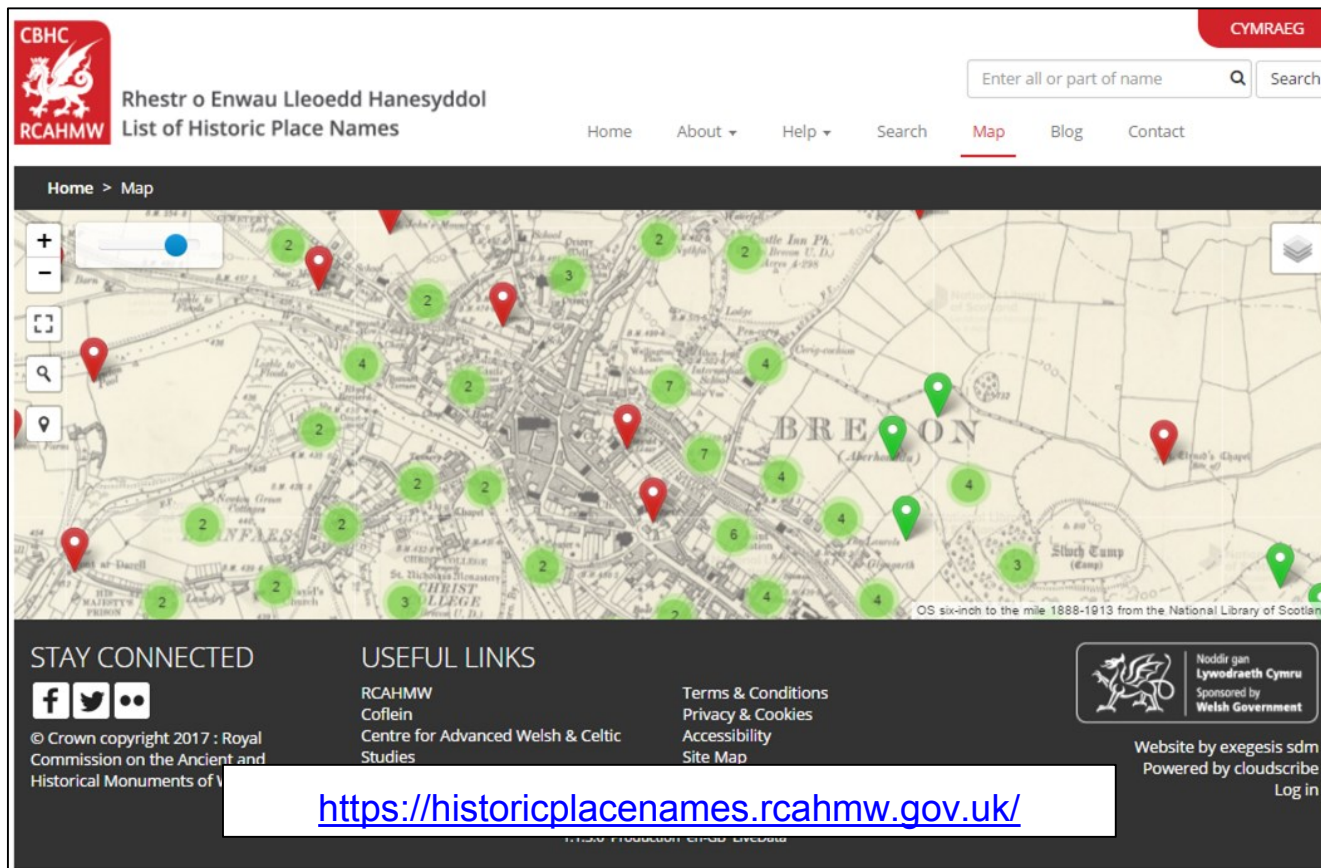
The Subscription API layers are more detailed, and have involved more work to create. Subscriptions are necessary to fund these additional costs, as well as the costs of hosting, licensing, and 24/7 availability.

View more information on:

<https://maps.nls.uk/projects/subscription-api/>



## HISTORIC PLACE NAMES OF WALES



The screenshot shows the website for the RCAHMW (Royal Commission on the Ancient and Historical Monuments of Wales) Historic Place Names project. The page features a search bar at the top right with the text "Enter all or part of name" and a search button. Below the search bar is a navigation menu with links for Home, About, Help, Search, Map (highlighted), Blog, and Contact. The main content area displays a map of Brecon, Wales, with numerous numbered markers (green circles with numbers) and red location pins. The map is titled "BRECON (Aberhonddu)" and is identified as an OS six-inch to the mile map from 1888-1913. The website footer includes a "STAY CONNECTED" section with social media icons for Facebook, Twitter, and YouTube, and a "USEFUL LINKS" section with links to RCAHMW, Coflein, Terms & Conditions, Privacy & Cookies, Accessibility, and Site Map. The footer also mentions the website is by exegesis sdm, powered by cloudscribe, and includes a logo for the Welsh Government.

CBHC  
RCAHMW

Rhestr o Enwau Lleodedd Hanesyddol  
List of Historic Place Names

Home About Help Search **Map** Blog Contact

Home > Map

OS six-inch to the mile 1888-1913 from the National Library of Scotland

STAY CONNECTED

USEFUL LINKS

RCAHMW  
Coflein  
Centre for Advanced Welsh & Celtic Studies

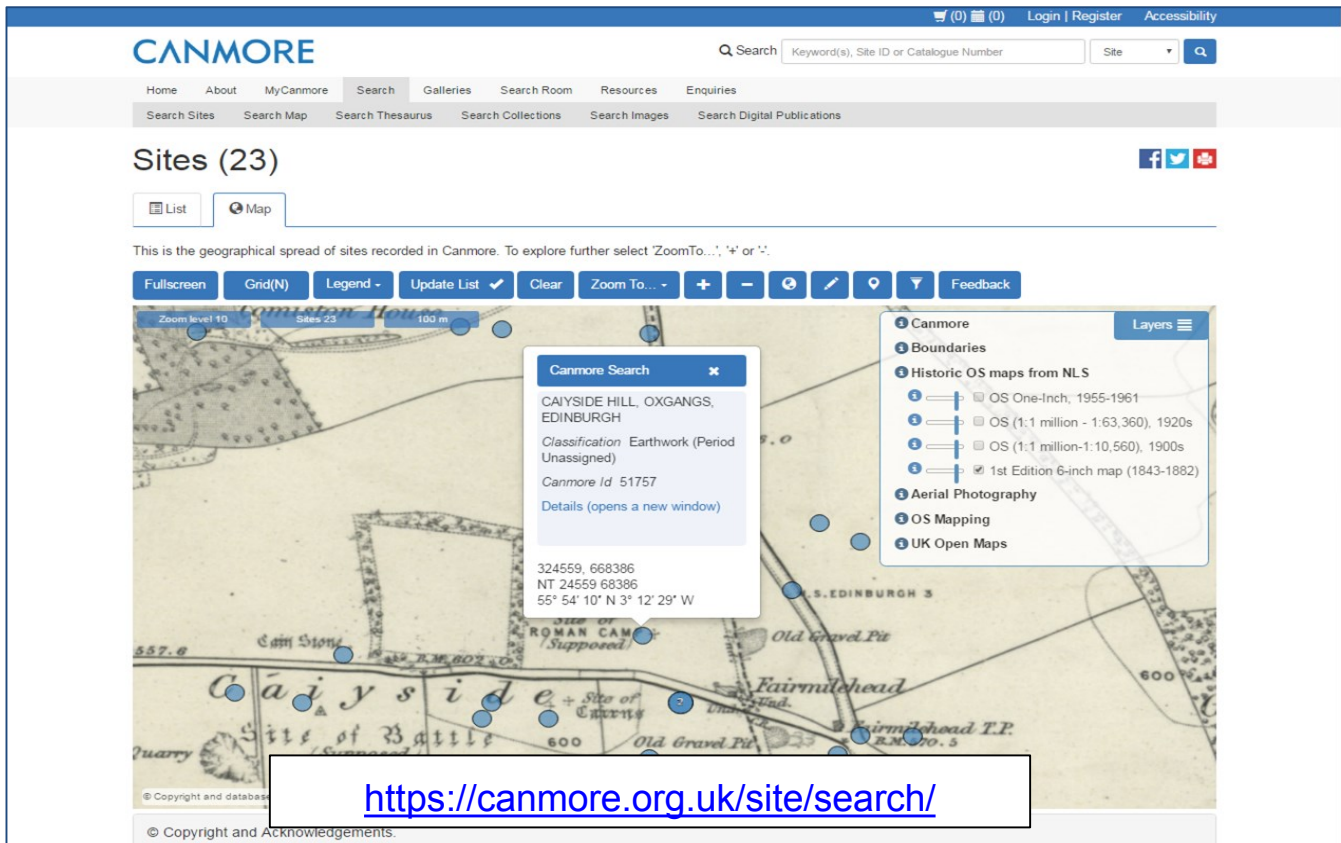
Terms & Conditions  
Privacy & Cookies  
Accessibility  
Site Map

Noddir gan Lywodraeth Cymru  
Sponsored by Welsh Government

Website by exegesis sdm  
Powered by cloudscribe  
Log in

<https://historicplacenames.rcahmw.gov.uk/>

## CANMORE MAP INTERFACE



The screenshot displays the Canmore website interface. At the top, there is a navigation bar with links for Home, About, MyCanmore, Search, Galleries, Search Room, Resources, and Enquiries. A search bar is located on the right side of the navigation bar. Below the navigation bar, there is a section for "Sites (23)" with a "List" button and a "Map" button. The map interface includes a toolbar with buttons for Fullscreen, Grid(N), Legend, Update List, Clear, Zoom To..., and Feedback. A search result popup is visible, showing details for a site in Caithness. The popup includes the site name, classification, Canmore ID, and coordinates. A layers panel is also visible on the right side of the map, showing various map layers such as Canmore, Boundaries, Historic OS maps from NLS, Aerial Photography, OS Mapping, and UK Open Maps. A URL box at the bottom of the map interface contains the link <https://canmore.org.uk/site/search/>.

© Copyright and database  
© Copyright and Acknowledgements.

## DIGIMAP FOR SCHOOLS

# Digimap for Schools




EDiNA  
© The University of Edinburgh

Trial Version

Search  
Enter a place name, full postcode or grid reference (e.g. York, W12 6BP, TQ231804)  
ME4 4TE


Display a map key →

Print  
Print your map as a PDF   
Pick your map size A4   
Pick your map layout Landscape   
Add Grid Lines   
Show Print Extent  Lock/Unlock   
Give your printed map a title  
Enter your name

 Ordnance Survey  
 National Library of Scotland  
Leabharlann Nàiseanta na h-Alba  
 getmapping

<https://digimapforschools.edina.ac.uk/>

© EDINA at the University of Edinburgh





## DIGIMAP FOR SCHOOLS



**Digimap for Schools**

EDINA  
© The University of Edinburgh

Trial Version

**Search**

Enter a place name, full postcode or grid reference (e.g. York, W12 6BP, TQ231804)

ME4 4TE

**Display a map key** 

**Print** 

Print your map as a

Pick your map size

Pick your map layout

Add Grid Lines

Show Print Extent  Lock/Unlock

Give your printed map a title

Enter your name


  

<https://digimapforschools.edina.ac.uk/>

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## DIGIMAP FOR SCHOOLS

# Digimap for Schools


 EDINA  
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ME4 4TE

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**Print** 

Print your map as a

Pick your map size


Pick your map layout


Add Grid Lines


Show Print Extent  Lock/Unlock


Give your printed map a title

Enter your name

 Ordnance Survey

 National Library of Scotland  
Leabharlann Nàiseanta na h-Alba

 getmapping®





<https://digimapforschools.edina.ac.uk/>


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## SCOTS-ITALIANS MAP VIEWER

Family Portrait: the Scots-Italians 1890-1940  
Italians resident in Scotland in the 1930s







 National Records of Scotland

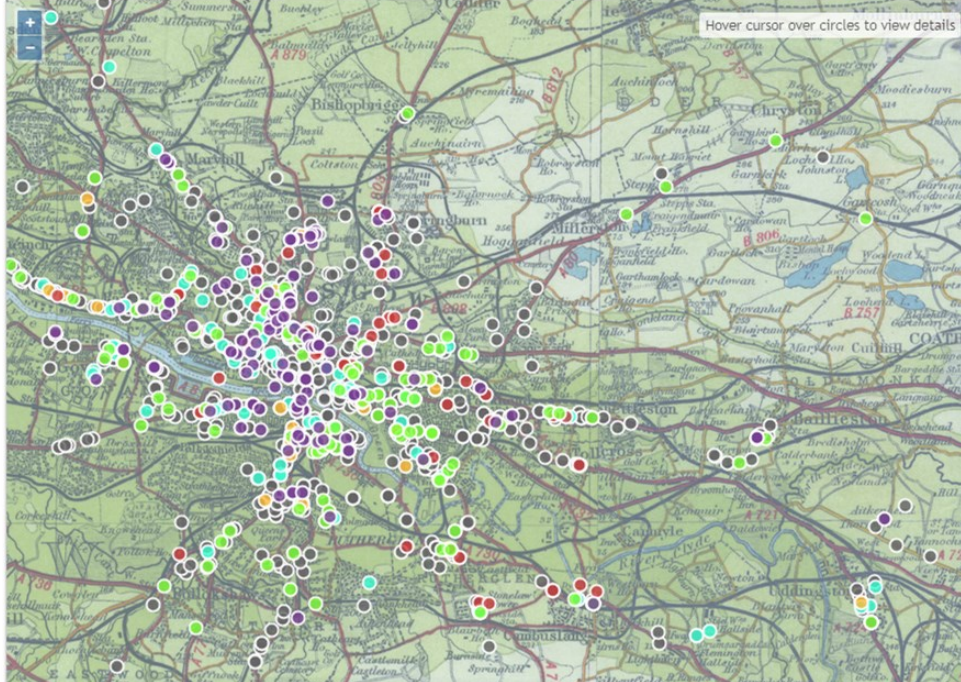
 Transnationalizing Modern Languages  
Building Identity and Tradition in Modern World Cultures

 National Library of Scotland  
Leabharlann Nàiseanta na h-Alba

Name	Occupation	Address
Abbruzzese		43 Mill Street, Glasgow
Abrami, Giuseppe		18 Bridge Street, Partick, Glasgow
Abbruzzese, Ferdinando		1533 Pollokshaws Road, Glasgow
Abruzzi, R		90a Cornwall Street, South, Glasgow
Acari, M		23 Chalmers Street, Dunfermline
Accettola, C	Hairdresser	1 Riego Street, Edinburgh
Accettola, Miss C	Hairdresser	108 Kirkgate, Edinburgh
Accettola, Miss C	Hairdresser	36 Ferry Road, Leith
Accorsi, F		297 Moffat Street, Glasgow

Origins

-  Lucca Province
-  Isernia Province
-  Others
-  Frosinone Province
-  La Spezia Province
-  Unknown




Hover cursor over circles to view details


Further information ▶

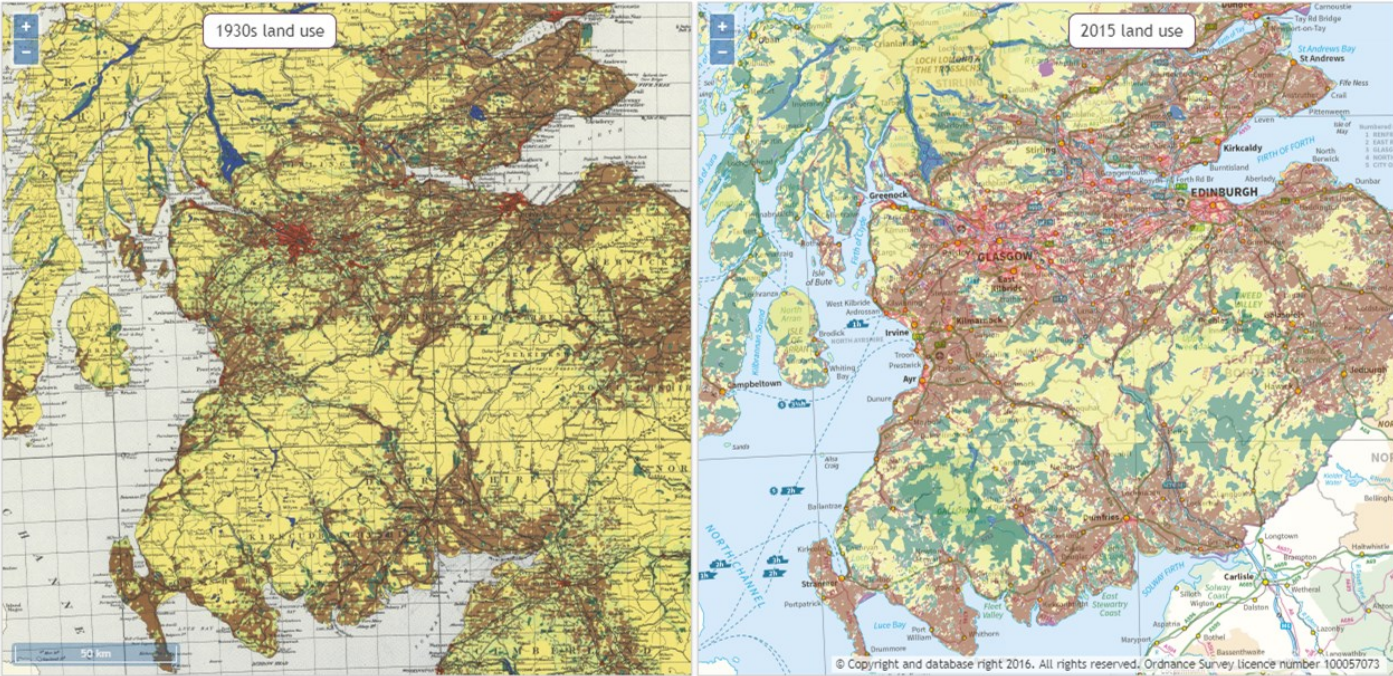
<https://maps.nls.uk/projects/italians/>

## LAND USE VIEWER WITH HISTORIC ENVIRONMENT SCOTLAND

 National Library of Scotland  
Leabharlann Nàiseanta na h-Alba

Scotland - Land Use Viewer  
Compare 1930s land use with 2015 land use

 HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

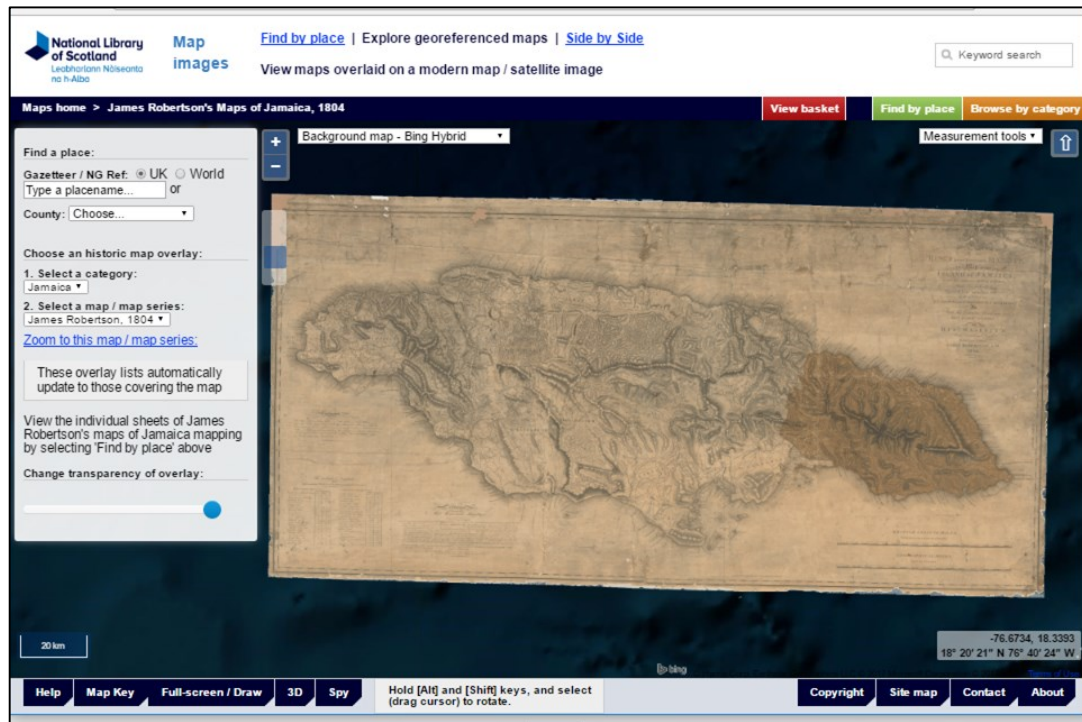


Further information ▾    Map Legend ▾

<https://maps.nls.uk/projects/landuse/>

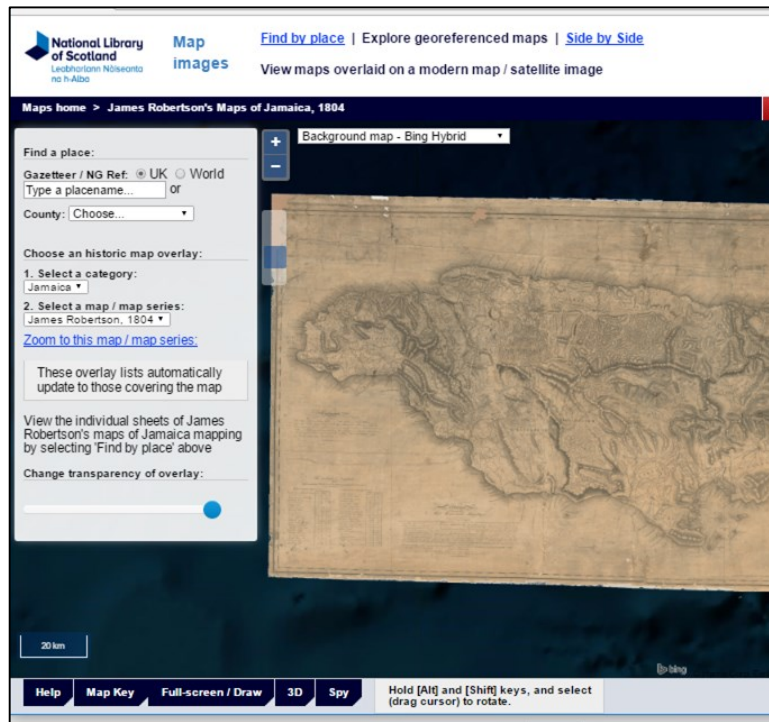
© Copyright and database right 2016. All rights reserved. Ordnance Survey Licence number 100057073

## LEGACIES OF BRITISH SLAVE OWNERSHIP - JAMAICA



The screenshot displays the National Library of Scotland's online map application. The interface includes a search bar at the top right with the text "Keyword search". Below the search bar, navigation links for "Find by place" and "Side by Side" are visible. The main content area shows a historical map of Jamaica from 1804, titled "James Robertson's Maps of Jamaica, 1804", overlaid on a modern Bing Hybrid background map. The historical map is a detailed topographical drawing showing the island's terrain, roads, and settlements. The interface also features a sidebar on the left with search filters, including "Find a place:", "Gazetteer / NG Ref.", "County:", "Choose an historic map overlay:", and "Change transparency of overlay:". A scale bar at the bottom left indicates 20 km, and a coordinate box at the bottom right shows the location: -76.6734, 18.3393, 18° 20' 21" N 76° 40' 24" W. The bottom navigation bar contains links for "Help", "Map Key", "Full-screen / Draw", "3D", "Spy", "Copyright", "Site map", "Contact", and "About".

## LEGACIES OF BRITISH SLAVE OWNERSHIP - JAMAICA



**National Library of Scotland** | **Map images** | [Find by place](#) | Explore georeferenced maps | [Side by Side](#)

View maps overlaid on a modern map / satellite image

Maps home > James Robertson's Maps of Jamaica, 1804

Background map - Bing Hybrid

Find a place:  
Gazetteer / NG Ref.  UK  World  
Type a placename... or  
County: Choose...

Choose an historic map overlay:  
1. Select a category:  
Jamaica  
2. Select a map / map series:  
James Robertson, 1804  
[Zoom to this map / map series.](#)

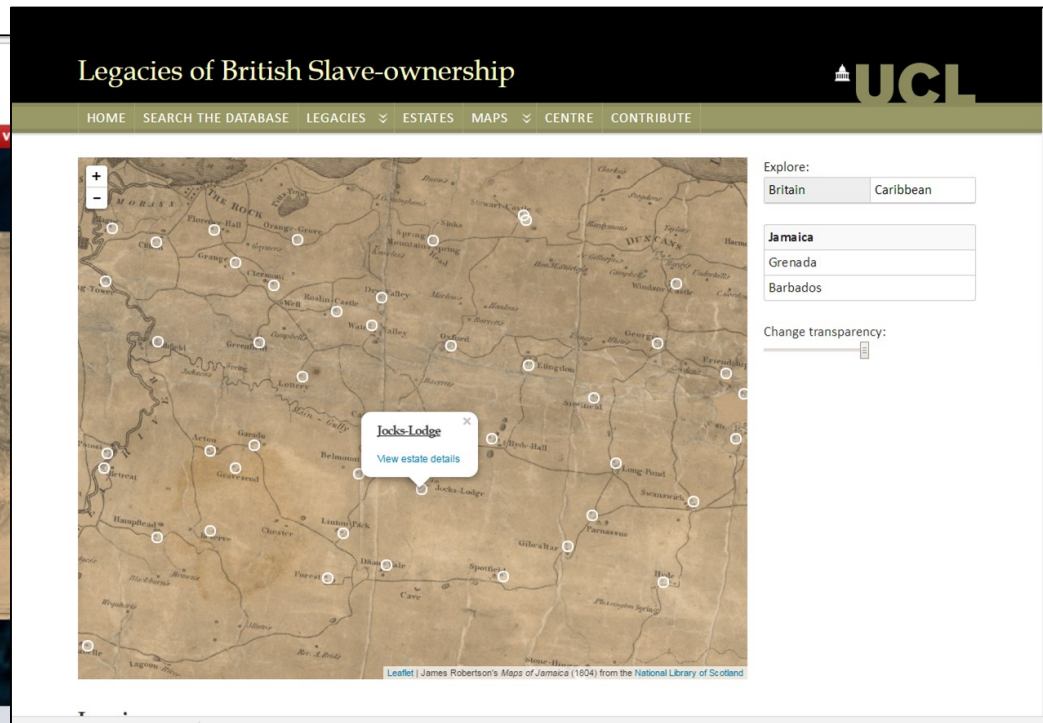
These overlay lists automatically update to those covering the map

View the individual sheets of James Robertson's maps of Jamaica mapping by selecting 'Find by place' above

Change transparency of overlay:

20 km

Help Map Key Full-screen / Draw 3D Spy Hold [Alt] and [Shift] keys, and select (drag cursor) to rotate.



**Legacies of British Slave-ownership** | **UCL**

HOME SEARCH THE DATABASE LEGACIES ESTATES MAPS CENTRE CONTRIBUTE

Explore:  
Britain Caribbean

Jamaica  
Grenada  
Barbados

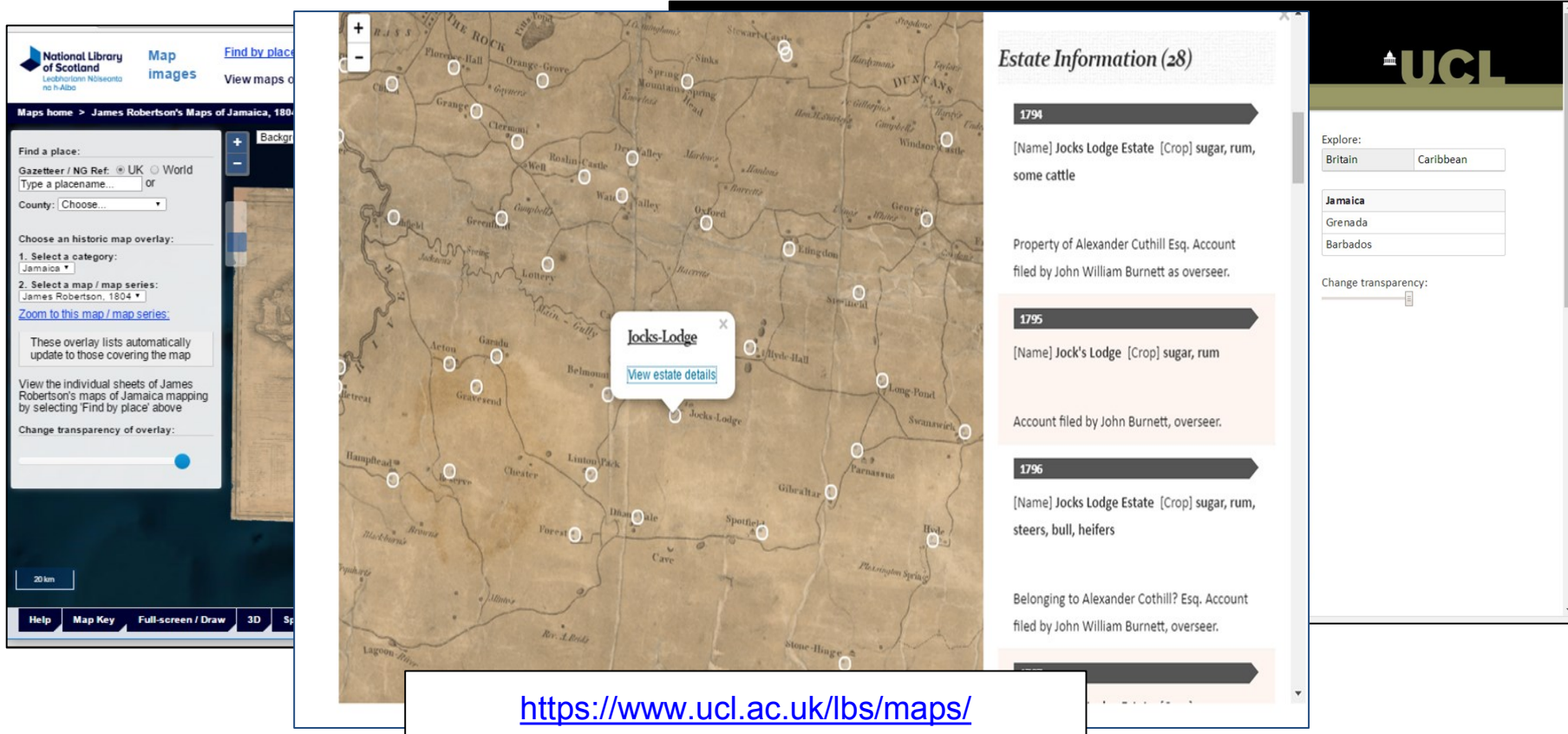
Change transparency:

**Jocks Lodge**  
View estate details

Leaflet | James Robertson's Maps of Jamaica (1804) from the National Library of Scotland

<https://www.ucl.ac.uk/lbs/maps/>

## LEGACIES OF BRITISH SLAVE OWNERSHIP - JAMAICA



The screenshot displays a web-based map interface. On the left, a sidebar contains search and navigation options, including a search bar, a 'Find by place' button, and a 'Change transparency of overlay' slider. The main map area shows a historical map of Jamaica with various estates marked by white circles. A pop-up window for 'Jocks-Lodge' is visible, with a 'View estate details' link. On the right, a panel titled 'Estate Information (28)' lists details for three estates:

- 1794**  
[Name] Jocks Lodge Estate [Crop] sugar, rum, some cattle  
Property of Alexander Cuthill Esq. Account filed by John William Burnett as overseer.
- 1795**  
[Name] Jock's Lodge [Crop] sugar, rum  
Account filed by John Burnett, overseer.
- 1796**  
[Name] Jocks Lodge Estate [Crop] sugar, rum, steers, bull, heifers  
Belonging to Alexander Cothill? Esq. Account filed by John William Burnett, overseer.

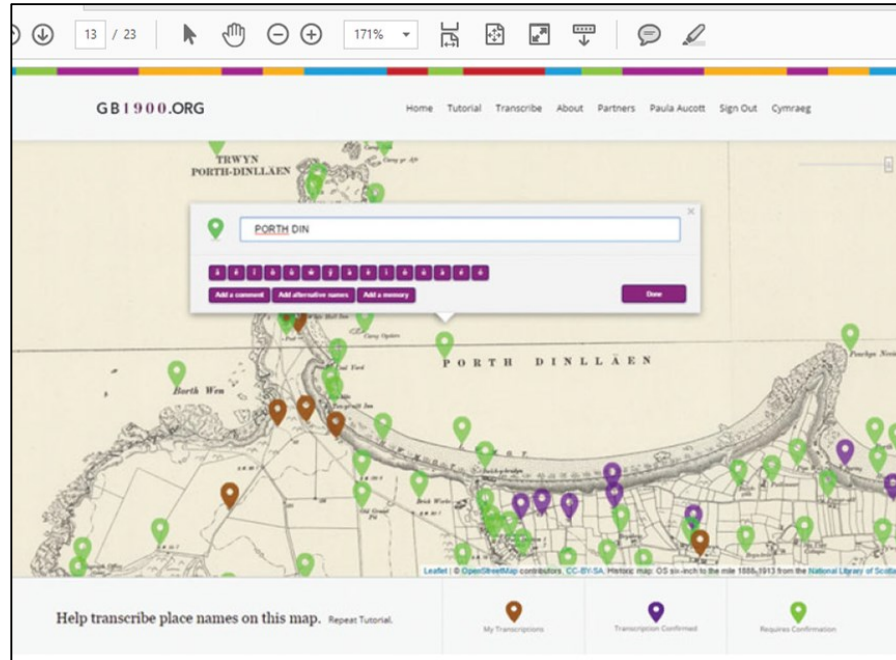
At the bottom of the interface, there is a URL bar containing the following text:

<https://www.ucl.ac.uk/lbs/maps/>





## GB1900 - COLOUR-CODING PINS FOR DOUBLE-TRANSCRIPTIONS



- Brown pins are pins worked on by the logged-on transcriber
- Green pins mean further work is needed - transcribed once or transcriptions don't match
- Purple pins have two separate matching transcriptions and are complete

## GB1900 - DOT DISTRIBUTION MAPS SHOWING PROGRESS



24 Oct 2016



2 Dec 2016



24 Jan 2017

## GB1900 - COMPLETION!

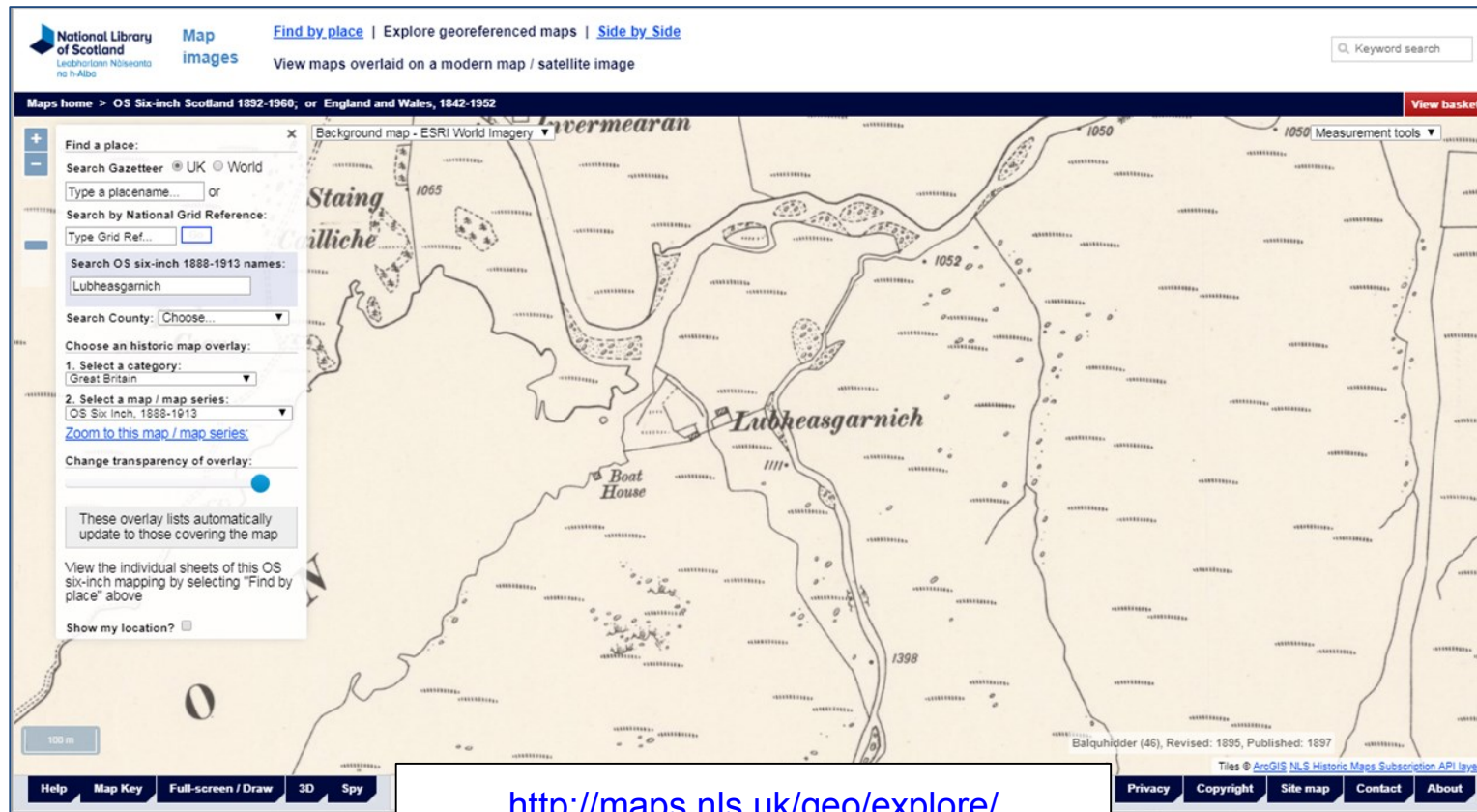
GB1900 closed for  
transcriptions on 7 Jan 2018

2.52 million confirmed  
names - ie. input by two  
independent transcribers



<https://geo.nls.uk/maps/gb1900/>

## SEARCHING GB1900 GAZETTEER ON NLS WEBSITE



The screenshot displays the National Library of Scotland's online georeferenced map interface. The main map area shows a historical OS six-inch map overlay on a modern ESRI World Imagery background. The search results for 'Lubheasgarnich' are highlighted on the map. The interface includes a search panel on the left with the following fields and options:

- Find a place:** Search Gazetteer (UK selected) or World. Input: Type a placename... or Search by National Grid Reference: Type Grid Ref...
- Search OS six-inch 1888-1913 names:** Input: Lubheasgarnich
- Search County:** Choose...
- Choose an historic map overlay:**
  - Select a category: Great Britain
  - Select a map / map series: OS Six inch, 1888-1913[Zoom to this map / map series.](#)
- Change transparency of overlay:** A slider control is visible.

Additional text in the search panel: "These overlay lists automatically update to those covering the map" and "View the individual sheets of this OS six-inch mapping by selecting 'Find by place' above". A "Show my location?" checkbox is also present.

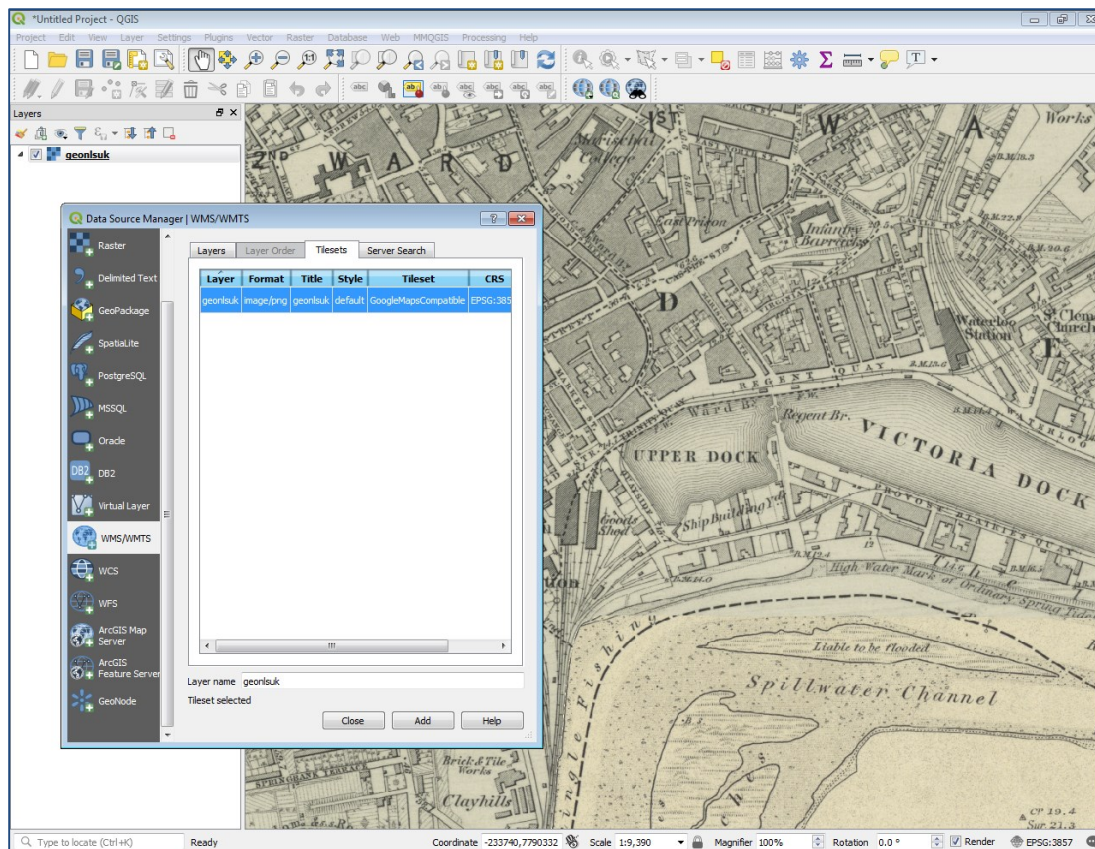
The map shows the location of Lubheasgarnich, with other labels like "Staing illiche", "Boat House", and "Lubheasgarnich". Elevation contours are visible, with values like 1050, 1052, 1065, and 1398. A scale bar indicates 100 meters.

At the bottom of the map, there is a copyright notice: "Tiles © ArcGIS NLS Historic Maps Subscription API layer".

The footer of the website includes navigation links: Help, Map Key, Full-screen / Draw, 3D, Spy, Privacy, Copyright, Site map, Contact, and About.

<http://maps.nls.uk/geo/explore/>

## USING GEOREFERENCED LAYERS IN QGIS - WMTS LAYER



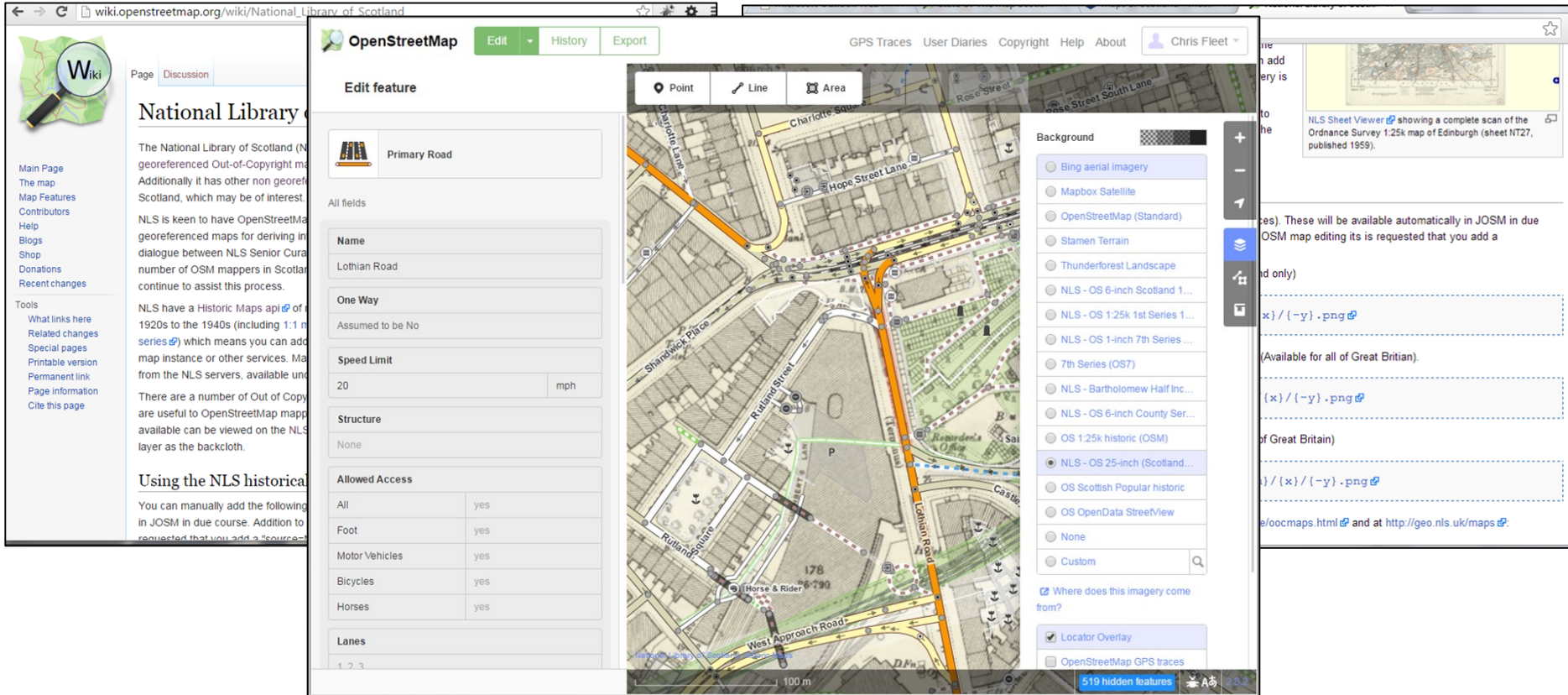
The screenshot displays the QGIS software interface. The main map area shows a historical map of a dock area with labels like 'VICTORIA DOCK', 'UPPER DOCK', and 'Spillwater Channel'. A 'Data Source Manager | WMS/WMTS' dialog box is open, showing a table of available layers.

Layer	Format	Title	Style	Tileset	CRS
geonluk	image/png	geonluk	default	GoogleMapsCompatible	EPSG:3857

At the bottom of the dialog box, the 'Layer name' is set to 'geonluk' and the 'Tileset selected' is also 'geonluk'. The 'Close', 'Add', and 'Help' buttons are visible at the bottom of the dialog.

The QGIS status bar at the bottom shows: Coordinate: -233740,7790332; Scale: 1:9,390; Magnifier: 100%; Rotation: 0.0°; Render; EPSG:3857.

## VECTORISATION OF MAP CONTENT - OPENSTREETMAP



The screenshot displays the OpenStreetMap interface with the National Library of Scotland page open on the left. The main map area shows a street view of Edinburgh, with a 'Primary Road' feature selected. The 'Background' menu is open, showing various map styles, including 'NLS - OS 1:25k 1st Series 1...' and 'NLS - OS 25-inch (Scotland...)'.

**OpenStreetMap Edit feature**

**Primary Road**

All fields

**Name**

Lothian Road

**One Way**

Assumed to be No

**Speed Limit**

20 mph

**Structure**

None

**Allowed Access**

All	yes
Foot	yes
Motor Vehicles	yes
Bicycles	yes
Horses	yes

**Lanes**

1 2 3

**Background**

- Bing aerial imagery
- Mapbox Satellite
- OpenStreetMap (Standard)
- Stamen Terrain
- Thunderforest Landscape
- NLS - OS 6-inch Scotland 1...
- NLS - OS 1:25k 1st Series 1...
- NLS - OS 1-inch 7th Series ...
- 7th Series (OS7)
- NLS - Bartholomew Half Inc...
- NLS - OS 6-inch County Ser...
- OS 1:25k historic (OSM)
- NLS - OS 25-inch (Scotland...)
- OS Scottish Popular historic
- OS OpenData StreetView
- None
- Custom

Where does this imagery come from?

Locator Overlay

OpenStreetMap GPS traces

519 hidden features

## SHARED GEOSPATIAL WEB-SERVICES



**Leaflet-providers preview**

This page shows mini maps for all the layers available in [Leaflet-providers](#).

Provider names for leaflet-providers.js  
[NLS](#)

Plain JavaScript:

```
var NLS = L.tileLayer('https://nls-s.tileserv.com/nls/{s}/{x}/{y}.jpg', {  
  attribution: 'a href="http://geo.nls.uk/maps/">National Library of Scotland Historic Maps/a',  
  bounds: [[49.6, -12], [61.7, 9]],  
  minZoom: 1,  
  maxZoom: 18,  
  subdomains: '0123'  
});
```

Leaflet | National Library of Scotland Historic Maps

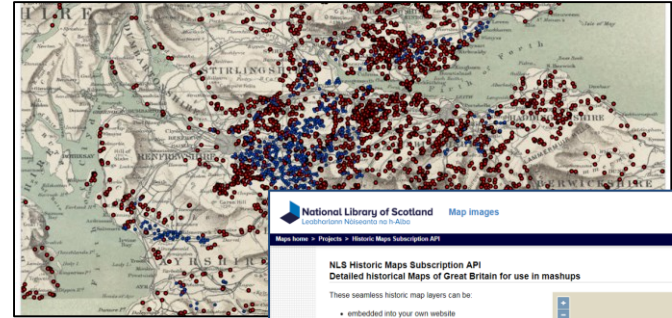
- NASAGIBS ModisTerraTrueColorCR
- NASAGIBS ModisTerraBands367CR
- NASAGIBS ViirsEarthAtNight2012
- NLS
- Wikimedia
- GeoportailFrance.parcels

<https://leaflet-extras.github.io/leaflet-providers/preview/>

## COMMODIFICATION OF DIGITAL MAPPING

Paper maps can be commodified through transforming them into:

- digital maps
- georeferenced maps
- seamed georeferenced layers
- web-services - raster data (WMS/WMTS)
- extracted data
- web-services - vector data (WFS/WCS)



National Library of Scotland  
Map Images

NLS Historic Maps Subscription API  
Detailed historical Maps of Great Britain for use in mashups

These seamless historic map layers can be:

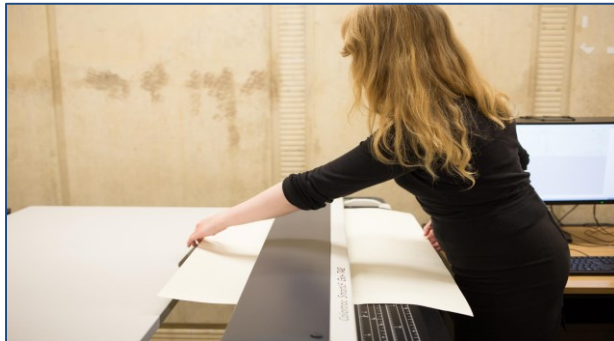
- embedded into your own website
- used for research purposes
- used as a backdrop for your own markers or geographic data
- used as a layer inside desktop GIS software

These layers complement our free [NLS Historic Maps API](#), which makes available layers of mapping covering Great Britain from 1:1 million to 1:63,360 scales, dating between the 1920s and 1940s. We intend to continue this as a freely available service.

The Subscription API layers are more detailed, and have involved more work to create. Subscriptions are necessary to fund these additional costs, as well as the costs of hosting, licensing, and 24/7 availability.

View more information on:

- Available map layers
  - = 1. Subscription API - Great Britain - Ordnance Survey (1:1 million - 1:10 560 - 1906)
  - = 2. Great Britain - Ordnance Survey six-inch to the mile (1:63 360) - 1888-1913
  - = 3. Great Britain - Ordnance Survey one-inch to the mile (1:63 360) - 1886 edition, 1888-1903
  - = 4. Great Britain - Ordnance Survey "Provisional" edition (1:25 000) - 1837-1861



National Library of Scotland  
Map Images

Find by place | Explore georeferenced maps | Side by Side  
View maps overlaid on a modern map / satellite image

Map Images

Find a place:  
Search Gazetteer:  UK  World  
Type a place-name, or  
Search by National Grid Reference:  
Type Grid Ref   
Search OS via InCH 1888-1913 names:  
[Type an 1888-1913 name]  
Search Country: Choose  
Choose an historic map overlay:  
1. Select a category:  
Great Britain  
2. Select a map / map series:  
OS 25 inch, 1888-1914  
Zoom to this map / map series  
Change transparency of overlay:  
These overlay tabs automatically update to those covering the map  
View the individual sheets of this OS 25 inch mapping by selecting "Find by place" above

Map Overlay | Full screen | Close | Help

Head (MS) and (MS) keys, and select (drag) content or controls

Privacy | Copyright | Site map | Contact | About



## DAVID RUMSEY MAP COLLECTION



The screenshot shows the website for the David Rumsey Map Collection. At the top, there is a navigation menu with links for Home, About, View Collection, Publications, Blog, and Help. A search bar is located on the right side of the header. The main content area features three large map thumbnails. The first is a decorative title page for 'Morse's Geographic Maps'. The second is a historical map of the Crimean War region. The third is a detailed map of the Valley of the Marne. To the right of the main content is a sidebar with social media icons, a search bar, and a list of categories and quicklinks. At the bottom, there are three buttons for browsing the collection and a paragraph of text describing the collection's scope.

Home About View Collection Publications Blog Help Search the Collection Go

### David Rumsey Map Collection

CARTOGRAPHY ASSOCIATES

THE COLLECTION [Share this Page](#)

Search the Site Go

[f](#) [t](#) [i](#) [s](#) [v](#)

#### Blog

- [All Categories](#)
- [Recent Additions](#)
- [News](#)
- [Featured Maps](#)
- [Related Collections](#)
- [Videos](#)

#### Quicklinks

The collection may be viewed with the following applications:

- [LUNA Viewer](#) | 107
- [Georeferencer v4](#) | 54,361
- [MapRank Search](#) | 107
- [Google Earth](#) | 107
- [Google Maps](#) | 107
- [Second Life](#) | 107
- [3D GIS](#) | 107
- [Insight Java Client](#) | 107
- [Ticker](#) | 107
- [Atlases](#) | 107
- [Browse by Categories](#) | 107
- [Past Ways to View](#) | 107

#### Reproductions

[Browse Over 86,000 Collection Maps and Related Images in LUNA Viewer](#)

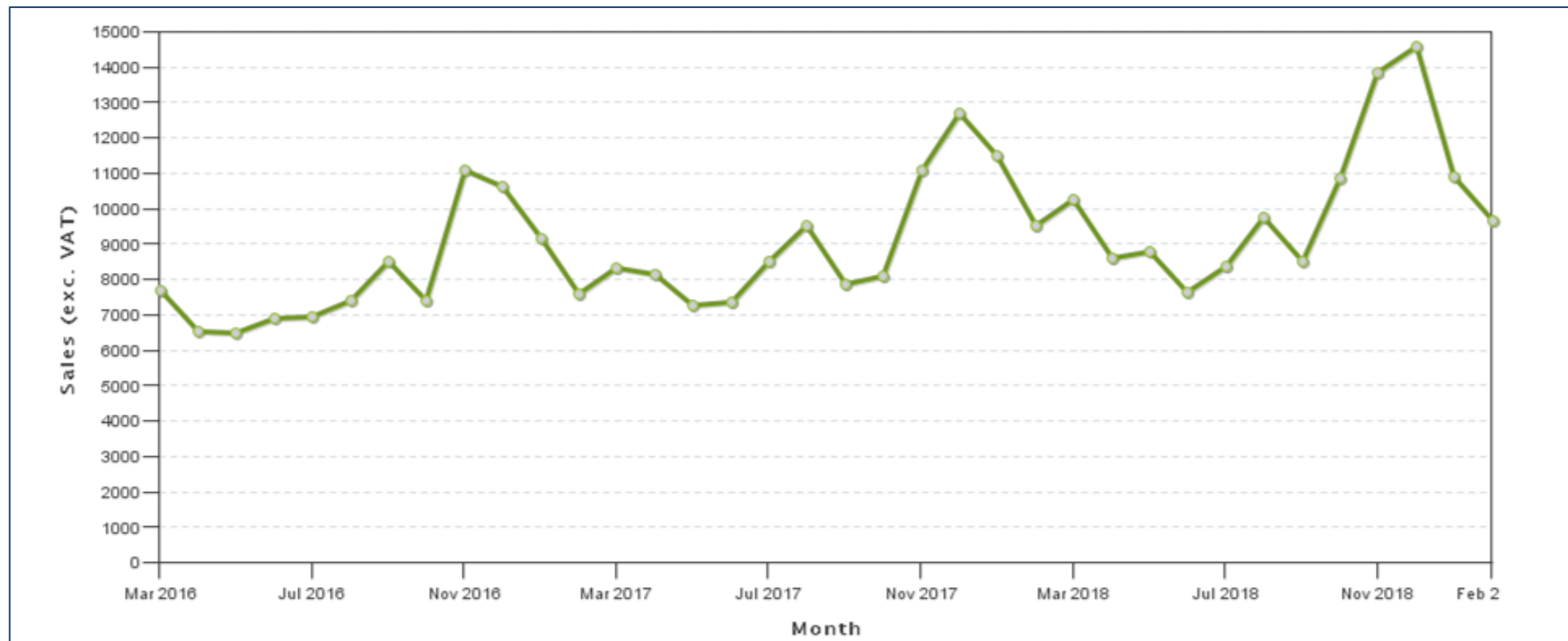
[Visit the David Rumsey Map Center at Stanford University Library](#)

[View Maps Most Recently Added to the Online Collection](#)

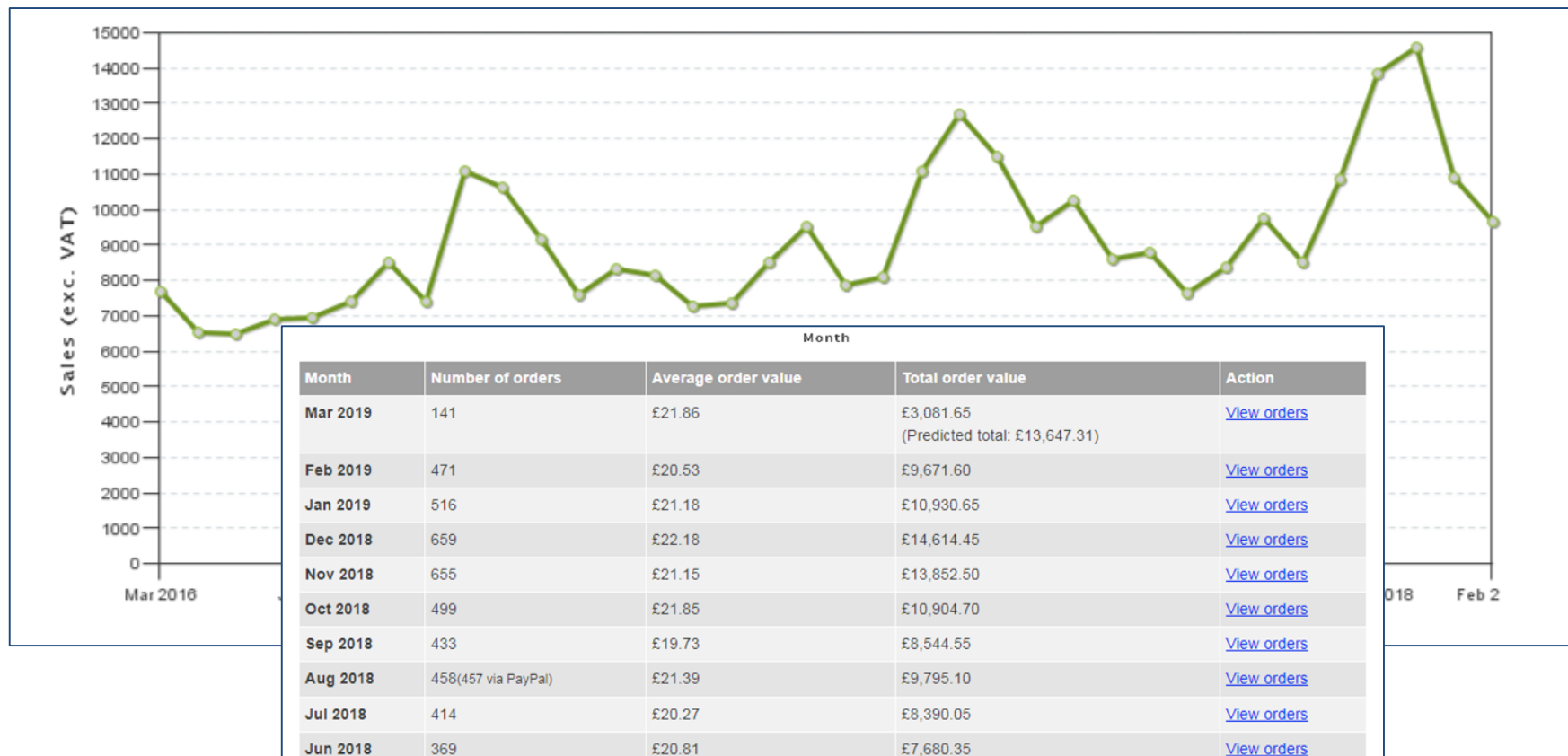
The David Rumsey Map Collection Database has many [viewers](#) and the Blog has numerous [categories](#). The physical map collection is housed in the [David Rumsey Map Center](#) at the Stanford University Library.

The historical map collection has over **87,000 maps and related images online**. The collection includes rare 16th through 21st century maps of [America](#), [North America](#), [South America](#), [Europe](#), [Asia](#), [Africa](#), [Pacific](#), [Arctic](#), [Antarctic](#), and [the World](#).

## SALES OF IMAGES AND PRINTOUTS



## SALES OF IMAGES AND PRINTOUTS



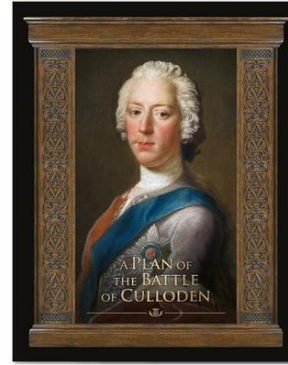
## COMMERCIAL USAGE OF MAPS

### Non-georeferenced:

- Map jigsaws
- Use in films and television
- Use in print media publications (covers, illustrations, calendars, etc.)

### Georeferenced:

- Archaeological site consultancy
- Assessing environmental risk
- Conveyancing of property and land
- Custom wallpaper and fabric
- Genealogy
- Graphics
- Use in digital map apps



Scottish Maps Calendar 2019

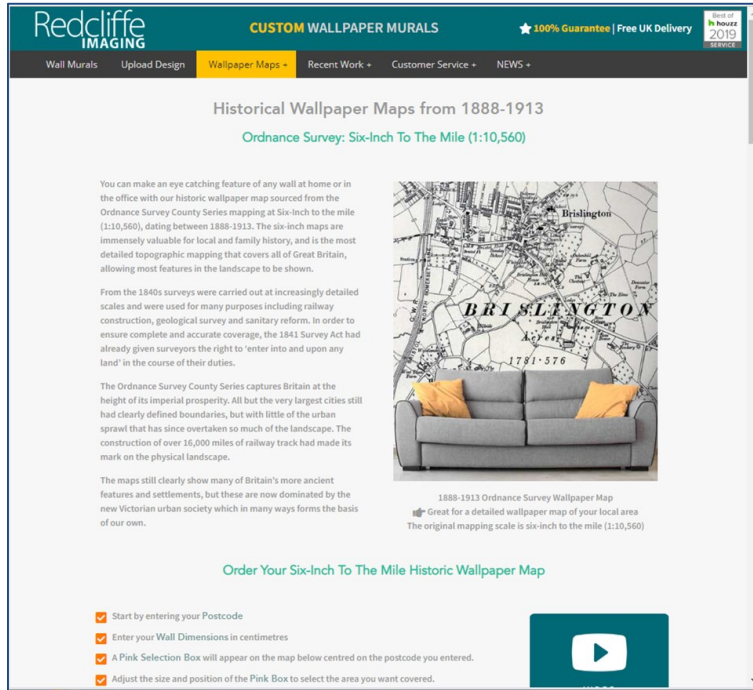


## CUSTOMISED WALLPAPER



<https://www.custom-wallpaper-printing.co.uk/wallpaper-historic-os-maps.html>

## CUSTOMISED WALLPAPER



**Redcliffe IMAGING** CUSTOM WALLPAPER MURALS ★ 100% Guarantee | Free UK Delivery Best of the House 2019 SERVICE

Wall Murals Upload Design Wallpaper Maps Recent Work Customer Service NEWS

### Historical Wallpaper Maps from 1888-1913


Ordnance Survey: Six-Inch To The Mile (1:10,560)

You can make an eye catching feature of any wall at home or in the office with our historic wallpaper map sourced from the Ordnance Survey County Series mapping at Six-Inch to the mile (1:10,560), dating between 1888-1913. The six-inch maps are immensely valuable for local and family history, and is the most detailed topographic mapping that covers all of Great Britain, allowing most features in the landscape to be shown.

From the 1840s surveys were carried out at increasingly detailed scales and were used for many purposes including railway construction, geological survey and sanitary reform. In order to ensure complete and accurate coverage, the 1841 Survey Act had already given surveyors the right to 'enter into and upon any land' in the course of their duties.

The Ordnance Survey County Series captures Britain at the height of its imperial prosperity. All but the very largest cities still had clearly defined boundaries, but with little of the urban sprawl that has since overtaken so much of the landscape. The construction of over 16,000 miles of railway track had made its mark on the physical landscape.

The maps still clearly show many of Britain's more ancient features and settlements, but these are now dominated by the new Victorian urban society which in many ways forms the basis of our own.

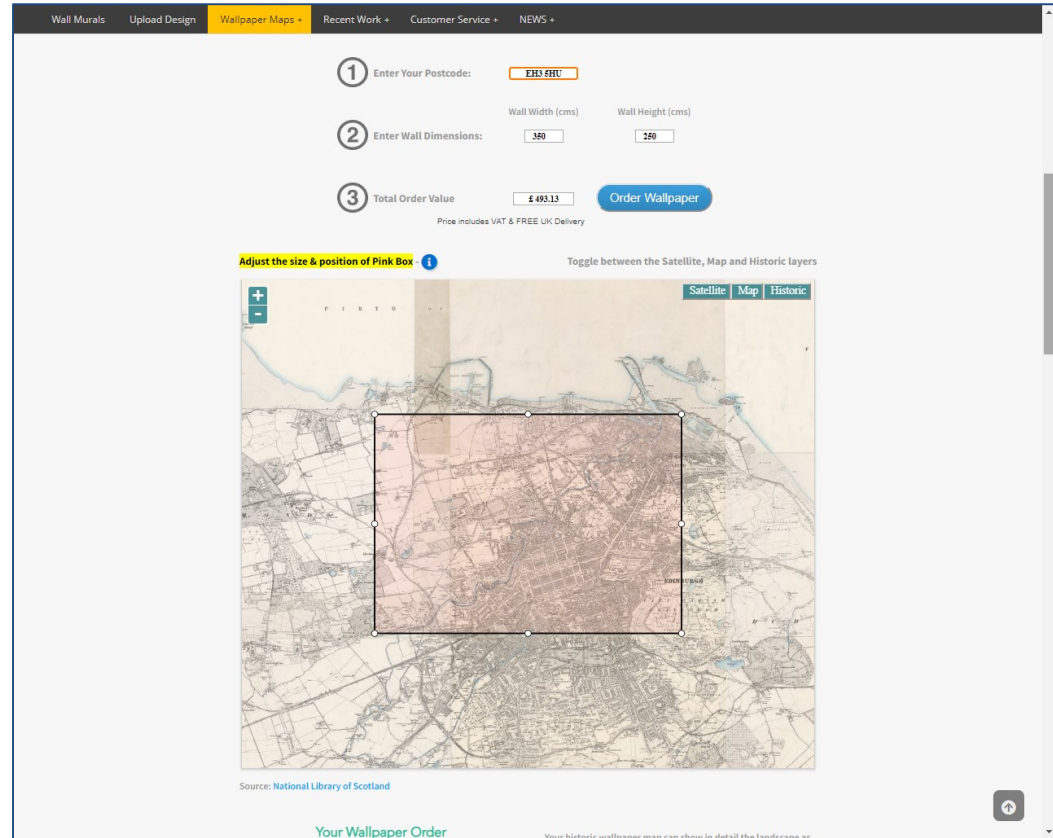



**BRISLINGTON**  
1791 - 576

1888-1913 Ordnance Survey Wallpaper Map  
★ Great for a detailed wallpaper map of your local area  
The original mapping scale is six-inch to the mile (1:10,560)

[Order Your Six-Inch To The Mile Historic Wallpaper Map](#)

- ✓ Start by entering your Postcode
- ✓ Enter your Wall Dimensions in centimetres
- ✓ A Pink Selection Box will appear on the map below centred on the postcode you entered.
- ✓ Adjust the size and position of the Pink Box to select the area you want covered.



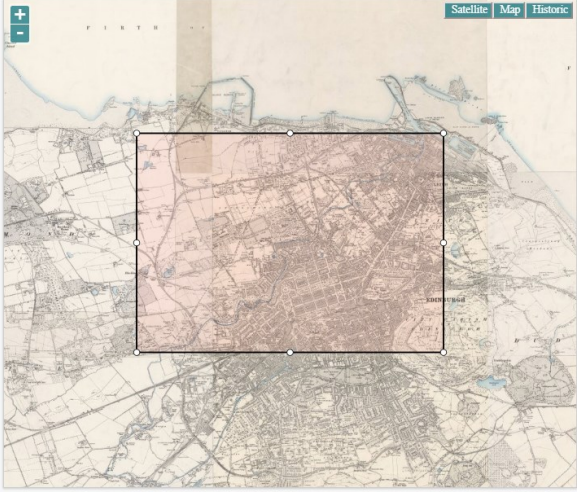
Wall Murals Upload Design Wallpaper Maps Recent Work Customer Service NEWS

- 1 Enter Your Postcode:
- 2 Enter Wall Dimensions: Wall Width (cms)  Wall Height (cms)
- 3 Total Order Value:  [Order Wallpaper](#)

Price includes VAT & FREE UK Delivery

Adjust the size & position of Pink Box ⓘ Toggle between the Satellite, Map and Historic layers

Map controls: +, -, Satellite, Map, Historic

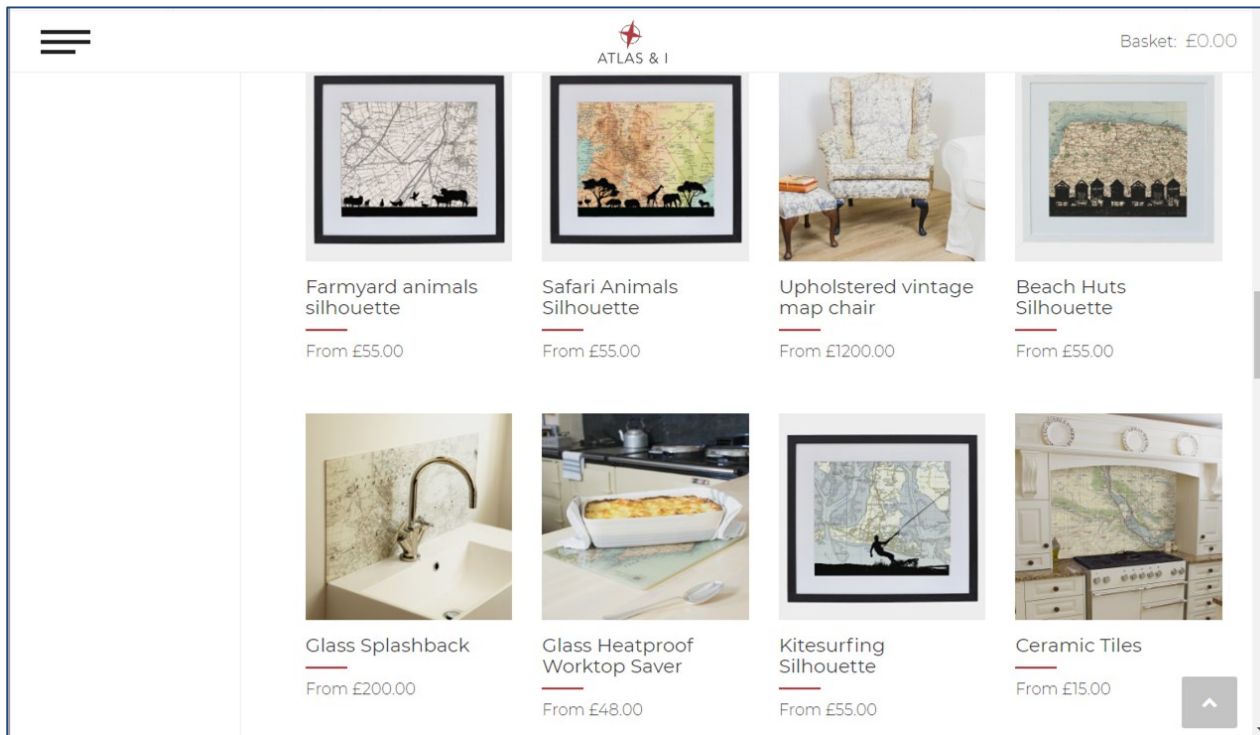


Source: National Library of Scotland

[Your Wallpaper Order](#) Your historic wallpaper map can show in detail the landscape as


<https://www.custom-wallpaper-printing.co.uk/wallpaper-historic-os-maps.html>


## PERSONALISED LOCATION-BASED ANTIQUE PRODUCTS





ATLAS & I


Basket: £0.00


  
Farmyard animals silhouette  
From £55.00


  
Safari Animals Silhouette  
From £55.00


  
Upholstered vintage map chair  
From £1200.00

  
Beach Huts Silhouette  
From £55.00

  
Glass Splashback  
From £200.00

  
Glass Heatproof Worktop Saver  
From £48.00

  
Kitesurfing Silhouette  
From £55.00

  
Ceramic Tiles  
From £15.00

<https://www.atlas-and-i.com/>

## PERSONALISED LOCATION-BASED ANTIQUE PRODUCTS

### Walking Silhouette

STEP 1: SEARCH A LOCATION

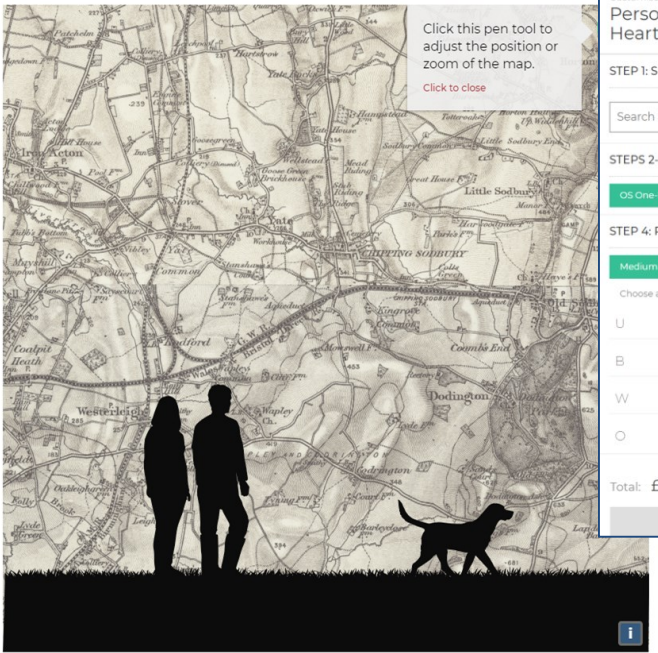
  

STEPS 2-3: PICK A MAP

- OS One-Inch Revised New Series (Hills)
- OS Six-Inch Map**  
1907 1:10 560
- OS One-Inch Revised New Series (Hills)**  
1895 1:63 360 Continue
- OS One-Inch Map  
1960 1:63 360
- England & Wales, south-western section; Scilly Isles.  
1922 1:633 600

Total: £55

Add to cart



Click this pen tool to adjust the position or zoom of the map.

Click to close

Home > Product List > Personalised Vintage Map Heart Print

Customise product  
**Personalised Vintage Map Heart Print**

STEP 1: SEARCH A LOCATION

STEPS 2-3: PICK A MAP


- OS One-inch Map
- Medium Square**

Choose a Frame

- U Unframed
- B Black Box Frame
- W White Box Frame
- O Oak Box Frame

Total: £49

Add to cart



FIRST LINE OF TEXT

Second line of text  
Third line of text



## Conclusions

Large georeferenced layers and web-services:

- are straightforward to create with series bounding boxes
- reach significantly more users
- can easily integrate with existing OGC services and applications
- encourage many new applications with minimum work for map libraries
- maximise opportunities for gazetteer generation, feature extraction and vectorisation
- have a significant income-generation potential

# THANK YOU

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