



# 1:25 000 Scale Colour Raster

User guide and technical specification

# 1:25 000 Scale Colour Raster

## User guide

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## Preface

This user guide (hereafter referred to as the guide) is designed to provide an overview of 1:25 000 Scale Colour Raster (hereafter referred to as the product) and it gives guidelines and advice on how a customer might derive the maximum benefit from the product. It assumes a general knowledge of geographic information. If you find an error or omission in this guide, or otherwise wish to make a comment or suggestion as to how we can improve the guide, please contact us at the address shown below under contact details or complete the product and service performance report form at [annexe A](#) and return it to us.

## Contact details

Our Customer Service Centre will be pleased to deal with your enquiries:

Customer Service Centre  
Ordnance Survey  
Romsey Road  
SOUTHAMPTON  
SO16 4GU

General enquiries (calls charged at local rate): 08456 05 05 05

Dedicated Welsh Language HelpLine: 08456 05 05 04

Textphone (deaf and hard of hearing users only please): +44 (0)23 8079 2906

Email: [customerservices@ordnancesurvey.co.uk](mailto:customerservices@ordnancesurvey.co.uk)

or visit the Ordnance Survey website at: [www.ordnancesurvey.co.uk](http://www.ordnancesurvey.co.uk)

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Intel is a registered trademark of Intel Corporation.

Motorola is a registered trademark of Motorola, Inc.

The National Trust is a registered trademark of The National Trust For Places Of Historic Interest Or Natural Beauty.

Unisys is a registered trademark of Unisys Corporation.

Unix is a registered trademark of X/Open Company Ltd.

## Back-up provision of the product

You are advised to copy the supplied data to a back-up medium.

## Using this guide

The documentation is supplied in portable document format (PDF) only. Free Adobe® Acrobat Reader® software, which displays the guide, incorporates search and zoom facilities and allows you to navigate within. Hyperlinks are used to navigate between associated parts of the guide and to relevant Internet resources by clicking on the blue hyperlinks and the table of contents.

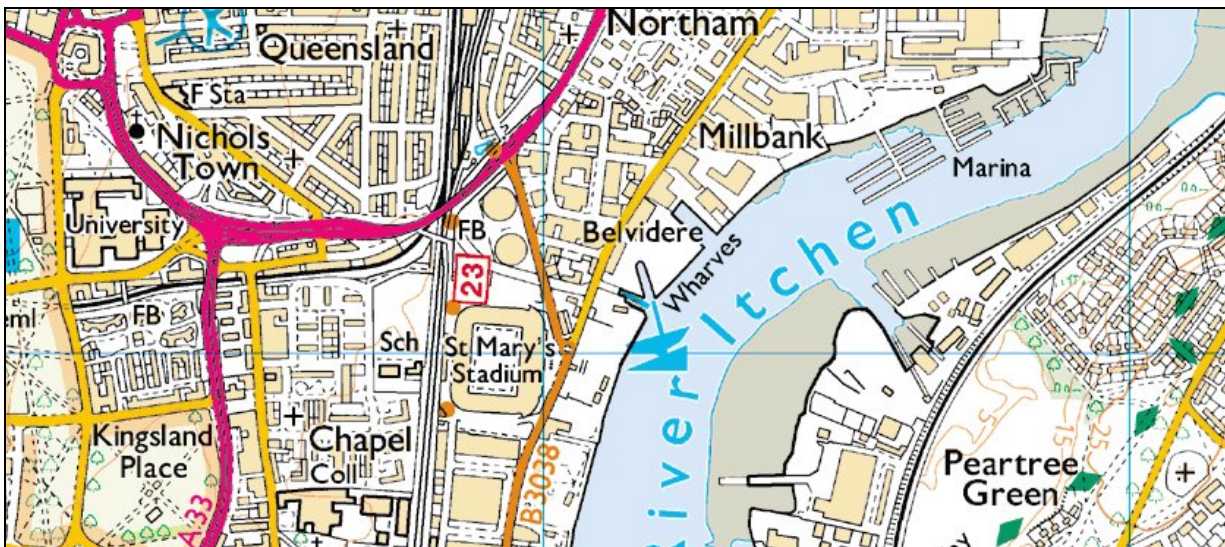
If you are unfamiliar with any words or terms used and require clarification please refer to the [glossary](#) at the end of the document.

## Chapter 1 Introduction

The 1:25 000 Scale Colour Raster data product mirrors the popular OS Explorer Map series, showing a detailed overview of environmental and leisure features. It can provide the ideal mapping backdrop upon which to overlay business information. 1:25 000 Scale Colour Raster's backdrop can then be overlaid with other Ordnance Survey vector products or a customer's own geographical/business data, besides being a useful background map in its own right. As 1:25 000 Scale Colour Raster is aimed at professional/business markets, its graphic specification can provide assistance with:

- Environmental applications
- Leisure applications
- Construction
- Engineering
- Planning and licence applications
- Farm/estate/property management
- Real estate

Screen images can be plotted to produce a high-quality map. An example of the data is shown in figure 1 below.



**Figure 1:** an extract of 1:25 000 Scale Colour Raster

## Chapter 2 Content

1:25 000 Scale Colour Raster includes the following features.

### Settlements

Buildings are generalised and shown with stipple infill and cartographically placed text to indicate settlement name and extent.

### Man-made structures

Structures are indicated by line, building or symbol and supplemented with text description for all distinctive named features.

### Transport

Transport features depicted include tracks, paths, roads, railway lines (single and multiple track), railway stations, airports and airstrips, cycle routes, ferries and ferry ports, coach and major bus stations.

### Water features

Water features are shown in blue with associated descriptive text. A distinction is made between natural (cyan) and man-made (black) water features, with the exception of canals (cyan).

### Natural landscape features

Different types of natural features and vegetation are shown by symbol or colour tint, including woods, rock, scree, boulders, sand, shingle, mud and slope.

### Rights of way and access land

The following routes are depicted on this product:

- Rights of way
- Footpaths, including permissive
- Bridleways, including permissive
- Byways open to all traffic
- Restricted byways
- Other routes with public access (ORPAs)
- National Trails and Long Distance Routes
- Recreational routes
- Rights of way are not shown in Scotland
- Access land

Portrayal of access land is intended as a guide to land that is normally available for access on foot, for example, access land created under the *Countryside and Rights of Way Act 2000*, and land managed by The National Trust™, Forestry Commission, Woodland Trust, National Parks and local authorities.

### Height

Ground survey heights and air survey heights are depicted.

Surface heights are to the nearest metre above mean sea level. Heights shown close to a triangulation pillar refer to the ground level height at the pillar and not necessarily at the summit.

## **Administrative boundaries**

National, county, district, unitary boundaries, civil parish and constituency boundaries are all depicted.

## **Tourist information**

Selected tourist and leisure information is normally restricted to features providing public access or services. Tourist information is shown by a cyan symbol using, where possible, nationally recognised symbols. Where appropriate, symbols also have black distinctive names, for example, all country parks, major gardens and so on. A full list of the tourist features in 1:25 000 Scale Colour Raster is at [annexe B](#).

## **Heritage and archaeological sites**

Depiction includes information supplied by English Heritage<sup>®</sup>, the Royal Commission on the Ancient and Historical Monuments of Scotland, and the Royal Commission on the Ancient and Historical Monuments of Wales.

## **Coastline and coastal features**

Low and high water, man-made and natural landscape features are all depicted.

## **National Grid lines**

National Grid lines shown at 1-km intervals.

## **Annotation**

Descriptive and distinctive names are depicted as text.

## Chapter 3 Scale

1:25 000 Scale Colour Raster is derived from the source data used to create its graphic counterpart, the OS Explorer Map series.

Generalisation is used to emphasise, simplify, select and sometimes omit features to produce a cartographic representation of the landscape at a scale of 1:25 000.

The nominal scale of the product is 1:25 000, but recommended minimum-to-maximum scale range is 1:8000 to 1:25 000 scale.

It is best viewed between 1:10 000 and 1:15 000 scale.

### Coordinates

1:25 000 Scale Colour Raster is available in National Grid coordinates, which are expressed in metres relative to an origin set to a point west of the Isles of Scilly. These coordinates can easily be spatially related to other surveys, drawings, datasets or Ordnance Survey products. Customers can visit the [British National Grid](#) pages of Ordnance Survey's website for more information.

### Coverage

1:25 000 Scale Colour Raster is supplied in standard 10 km by 10 km tiles aligned to the National Grid.



## Chapter 4 Formats

1:25 000 Scale Colour Raster comes in Tagged Image File Format (TIFF uncompressed and compressed), LZW and packbit compressed formats.

**LZW** (Lempel-Ziv-Welch) is a *loss/less* compression (see chapter 5).

**TIFF Packbit** is a lossless compression scheme that is supported by virtually all applications that can import TIFF graphics.

### TIFF

TIFF is a file-based format for storing and interchanging raster images, with the most recent version – 6.0 – published in 1992.

There are two types of architecture for a TIFF. Many mainframe computers use what is known as a big-endian (Motorola®) architecture. Most modern computers, including personal computers (PCs), use the little-endian (Intel®) system. 1:25 000 Scale Colour Raster TIFFs are supplied with Intel architecture. Converting between these two systems is possible but, as a general rule, modern software should be expected to handle both of these outputs without operator intervention.

The 1:25 000 Scale Colour Raster conforms to the TIFF 6.0 standard. Customers are recommended to contact their system suppliers to ensure that it can read the Intel/little-endian TIFF architecture.

## Chapter 5 Data compression

The data volumes for each file format are influenced by the level of data compression.

### Image compression

When an image is compressed, duplicated data that has no value is removed or saved in a shorter form, reducing a file's size. For example, if large areas of water are the same tone, only the value for one pixel needs to be saved, together with the locations of the other pixels with the same colour. When the image is edited or displayed, the compression process is reversed. When raster is compressed, not only are the data volumes reduced but the user can download, display, edit and transfer images more quickly.

There are two forms of compression: *lossless* and *lossy*:

#### Lossless compression

As its name suggests, lossless compression does not lose information within an image. A lossless compression retains the original quality of an image when it is uncompressed. This process doesn't provide much compression, so file sizes remain large. Lossless compression is used mainly where detail is important, such as when planning to make large prints.

#### Lossy compression

This process degrades images to some degree, meaning that the decompressed image isn't quite the same as the original. The more an image is compressed, the more degraded it becomes. In many situations, such as posting images on the Internet or printing small- to medium-sized prints, the image degradation isn't so obvious. If a lossy compressed image is over-enlarged the degradation will become apparent, and therefore 1:25 000 Scale Colour Raster is not supplied using this compression.

### TIFF

TIFF is one of the most commonly used *lossless* image formats. TIFF is primarily designed for raster data interchange, and is supported by numerous image-processing applications. This permits much more efficient access to very large files that have been compressed.

## Chapter 6 Georeferencing

To be able to view each tile in the correct geographic relation to the National Grid and to each other, the tiles must be georeferenced. GIS typically provide georeferencing as part of their functionality, but for each set of tiles it is necessary to provide the information on how the tiles should be ordered.

Ordnance Survey provides this information in a set of georeferencing files, also known as world files. A complete set for 1:25 000 Scale Colour Raster is available to download free of charge from the 1:25 000 Scale Colour Raster [product page](#) on the Ordnance Survey website.

There are several different types of world file. Prior to downloading one of the sets, customers are advised to check with their system suppliers to find out which type their system supports.

The conventions behind the files' creation can be found in [chapter 4](#) of the technical specification. By using the conventions outlined there, this means that other datasets using the same conventions can be imported into the same GIS to add value to the raster map; for example, overlaying a routing or logistics network over the map or displaying a customer's demographic information.

The georeferencing files should be saved in the same directory as the files of the map tiles themselves.

## Chapter 7 Revision

1:25 000 Scale Colour Raster is updated via a revision programme. The revision programme mirrors that of the OS Explorer Map series, and is determined by assessing the following factors:

- known surveyed change;
- change intelligence gathered from a range of sources; and
- consideration is given to how long since an area was last revised.

Priority is given to prestige sites categorised as significant items of change, such as major road construction projects. Significant items of survey change relevant to the scale are captured during the revision programme.

Where a line feature ends by intersecting the tile edge, it is matched with its corresponding feature on the adjacent tile so that both features end on the same unique coordinate. The representation of detail across the tile edge will be of a cartographically acceptable standard when plotted or displayed at scale.

Changes are applied to the data and supplied to customers in May and November each year. For 1:25 000 Scale Colour Raster only tiles that have changed since the previous supply are provided to help with customers' data management.

## Annexe A Product and service performance report form

Ordnance Survey welcomes feedback from its customers about 1:25 000 Scale Colour Raster.

If you would like to share your thoughts with us, please print a copy of this form and when completed post or fax it to the address below.

Your name: .....

Organisation: .....

Address: .....

.....

.....

Postcode: .....

Phone: .....

Fax: .....

Email: .....

Quotation or order reference: .....

Please record your comments or feedback in the space below. We will acknowledge receipt of your form within three (3) working days and provide you with a full reply or a status report within 21 working days.

If you are posting this form, please send it to:

1:25 000 Scale Colour Raster Product Manager,  
Ordnance Survey, Romsey Road, SOUTHAMPTON, SO16 4GU.

If you wish to return it by fax, please dial 023 8079 2615.

Any personal information that you supply with this report form will be used by Ordnance Survey only in the improvement of its products and services. It will not be made available to third parties.

# 1:25 000 Scale Colour Raster

## Technical specification

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# Introduction

## Purpose of this specification and disclaimer

This is the technical specification (hereafter referred to as the specification) applicable to the 1:25 000 Scale Colour Raster (hereafter referred to as the product) which is referred to in the Framework Direct Licence, Specific Use Framework Partner Licence or your other customer contract for the product.

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## Chapter 1 Specification

The following chapters include information about 1:25 000 Scale Colour Raster, file compression, symbology, georeferencing and formats.

### 1:25 000 Scale Colour Raster

Specification	1:25 000 Scale Colour Raster
Number of tiles in Great Britain	2 859 (edgematched) <ul style="list-style-type: none"><li>• England 1 508</li><li>• Scotland 1 130</li><li>• Wales 289</li></ul>
Tile size	10 km by 10 km
Availability	National coverage
Resolution	254 dots per inch
Data structure	Raster
Transfer format	TIFF Packbits compressed. TIFF Palette 8-bit (256 colours) with LZW* compression
Storage volumes per tile	1.5–3.0 Mb compressed
Update frequency	Half-yearly update in May and November (see <a href="#">chapter 7</a> in the user guide)

\* If LZW compressed formats are used then registration may be required. Information is available on the Unisys® website at [www.unisys.com/about\\_\\_unisys/lzw/](http://www.unisys.com/about__unisys/lzw/).



# Chapter 2 Legend

## 1:25 000 Scale Colour Raster / Graddfa 1:25 000 Raster Lliw

### Legend / Arysgrif

#### Communications / Cysylltiadau

#### Roads and paths / Ffyrdd a llwybrau

Not necessarily rights of way / Nid â hawliau tramwy o anghenraidd

	Motorway / Traffordd		Service area / Ardal Wasanaeth
	Junction number / Rhif y gyffordd		
	Dual carriageway / Ffordd ddeuol		
	Trunk or Main road / Prifffordd		
	Secondary road / Ffordd eilaidd		
	Narrow road with passing places / Ffordd cul gyda manau pasio wedi'u nodi		
	Road under construction / Ffordd yn cael ei hadelladu		
	Road generally more than 4 m wide / Ffordd sy'n lletach na 4 m yn gyffredinol		
	Road generally less than 4 m wide / Ffordd sy'n gulach na 4 m yn gyffredinol		
	Other road, drive or track, fenced and unfenced / Ffordd, dreif neu drac arall wedi neu heb eu ffensio		
	Gradient: steeper than 20% (1 in 5); 14% (1 in 7) to 20% (1 in 5) / Rhediad: 20% (1 mewn 5) ac yn fwy serth; 14% (1 mewn 7) i 20% (1 mewn 5)		
	Ferry; Ferry (P) – passenger only / Fferi; Fferi (T) – teithiwr yn unig		
	Path / Llwybr		

#### Railways / Rheilffyrdd

	Multiple track / Trac lluosog	} standard gauge / rheilffordd safonol
	Single track / Trac sengl	
	Narrow gauge / Rheilffordd gul Light rapid transport system (LRTS) / System gludo ysgafn gyflym	
	Road over, road under, level crossing / Heol drosodd; heol o dan; croesfan rheilffordd	
	Cutting; tunnel; embankment / Trychfa; twnnel; arglawdd	
	Station, open to passengers; siding / Gorsaf, ar agor i deithwyr; cilffordd	

#### Public rights of way / Hawliau tramwy cyhoeddus

(Rights of way are not shown on maps of Scotland) /  
(Ni ddangosir hawliau tramwy ar fapiau Yr Alban)

	Footpath / Llwybr troed
	Bridleway / Llwybr march
	Byway open to all traffic / Cilffordd yn agored i bob trafniadaeth
	Road used as a public path (from late 2004 roads used as public paths are to be redesignated as Restricted byways. Restricted byways provide a right of way for walkers, horse riders, cyclists and other non-mechanically propelled vehicles). / Ffordd a ddefnyddir fel llwybr cyhoeddus (o hwyr 2004 bydd ffyrdd a ddefnyddir fel llwybrau cyhoeddus yn cael eu ail-ddisgrifio fel Cilffyrdd cyfyngedig. Mae Cilffyrdd cyfyngedig yn rhoi hawliau tramwy ar gyfer cerddwyr, beicwyr a cerbydau ddi-beiriannol eraill).

The representation on this map of any other road, track or path is no evidence of the existence of a right of way. / Nid yw ymddangosiad unrhyw ffordd neu drac neu llwybr arall ar y map hwn yn profi bod hawl i dramwy ar hyd-ddynt.

#### Other public access / Mynediad cyhoeddus arall

	Other routes with public access. The exact nature of the rights on these routes and the existence of any restrictions may be checked with the local highway authority. Alignments are based on the best information available. / Llwybrau eraill gyda mynediad i'r cyhoedd. Gellir holi'r awdurdod ffyrdd lleol am union natur yr hawliau ar y llwybrau hyn ac unrhyw gyfyngiadau sy'n bodoli. Mae'r aliniadau yn seiliedig ar yr wybodaeth orau sydd ar gael.
	National Trail/Long Distance Route; Recreational route / Llwybr Cenedlaethol neu Llwybr Hirbell; Llwybr hamdden
	Permitted footpath / Llwybr troed caniatool
	Permitted bridleway / Llwybr merlota caniatool






































Footpaths and bridleways along which landowners have permitted public use but which are not rights of way. The agreement may be withdrawn. / Llwybrau a llwybrau merlota y mae tirfeddianwyr wedi caniatáu i'r cyhoedd eu defnyddio ond nad dynt yn hawliau tramwy. Gellir diddymu'r cytundeb.

	Traffic free cycle route / Trywydd beicio yn rhydd o drafnidiaeth
	National cycle network route number – traffic free Rhif trywydd rhywydwaith beicio cenedlaethol – yn rhydd o drafnidiaeth
	Regional cycle network route number – on road Rhif trywydd rhywydwaith beicio rhanbarthol – ar ffordd

# 1:25 000 Scale Colour Raster / Graddfa 1:25 000 Raster Lliw

## Legend / Arysgrif

Selected tourist and leisure information / Gwybodaeth twristiaeth a hamdden ddethol

 Building of historic interest / Adeilad o ddiddordeb hanesyddol	 Other tourist feature / Atyniadau eraill i ymwelwyr
 Cadw: Welsh Historic Monuments / Cadw	 Parking / Parcio
 Camp site/caravan site / Safle gweryll/safle carafanau	 Park and ride, all year/seasonal / Parcio a chludo, drwy'r flwyddyn/tymhorol
 Castle/fort / Caer/castell	 Picnic site / Safle picnic
 Cathedral/abbey / Eglwys gadeiriol/abaty	 Preserved railway / Rheilffordd a ddiogelwyd
 Country park / Parc gwledig	 Public convenience / Cyfleusterau cyhoeddus
 Cycle trail / Llwybr beiciau	 Public house/s / Tŷ tafarn/au
 English Heritage	 Recreation/leisure/sports centre / Canolfan adloniant/hamdden/chwaraeon
 Fishing / Pysgota	 Slipway / Lithrfa
 Forestry Commission Visitor centre	 Telephone, public/motoring organisation/emergency / Ffôn, cyhoeddus/cymdeithas foduro/argyfwng
 Garden/arboretum / Gardd/gardd goed	 Theme/pleasure park / Parc thema/pleser
 Golf course or links / Cwrs neu lain golff	 Viewpoint / Gwyffa
 Historic Scotland	 Visitor centre or National Park information point / Canolfan ymwelwyr neu pwynt hysbysrwydd Parc Cenedlaethol
 Information centre, all year/seasonal / Canolfan wybodaeth drwy'r flwyddyn/tymhorol	 Walks/trails / Llwybrau
 Horse riding / Marchogaeth	 Water activities / Chwaraeon dŵr
 Museum / Amgueddfa	 Roman site / Safle Rufeinig
 Nature reserve / Gwarchodfa natur	 Moorings (free) / Angorfa (yn rhad ac am ddim)
 National Trust	 Electric boat charging point / Pwynt trydan llong drydan
	 Windmill (open to the public) / Melyn wynt (ar agor i'r cyhoedd)
	} selected areas only / ardaloedd detholedig yn unig

# 1:25 000 Scale Colour Raster / Graddfa 1:25 000 Raster Lliw






## Legend / Arysgrif

### General information / Gwybodaeth cyffredinol































#### Access land / Tir mynediad

Portrayal of access land on this map is intended as a guide to land which is normally available for access on foot, for example, access land created under the Countryside and Rights of Way Act 2000, and land managed by the National Trust, Forestry Commission and Woodland Trust. Access for other activities may also exist. Some restrictions will apply; some land will be excluded from open access rights. The depiction of rights of access does not imply or express any warranty as to its accuracy or completeness. Observe local signs and follow the Countryside Code. / Canllaw ar gyfer tir ble mae mynediad ar droed fel arfer, er enghraifft tir wedi'u creu o dan Deddf Cefn Gwlad a Hawliau Tramwy 2000, a tir wedi'u rheoli gan yr Ymddiriedolaeth Genedlaethol, Y Comisiwn Coedwigaeth a Ymddiriedolaeth y Coediannau. Gall fod mynediad ar gyfer gweithgareddau eraill yn bodoli. Gall fod cyfyngiadau; gall fod tir wedi'u eithrio o hawliau mynediad agored. Nid yw'r portread o hawliau mynediad yn cyfleu neu'n datgan unrhyw warant ynghylch eu cywirdeb neu eu cyflawnder. Cadwch at arwyddion lleol a dilynwch y rheolau cefn gwlad.

Visit [www.countrysideaccess.gov.uk](http://www.countrysideaccess.gov.uk) for up to date information.  
Ymwelwch â [www.countrysideaccess.gov.uk](http://www.countrysideaccess.gov.uk) ar gyfer yr wybodaeth diweddaraf.

	Access land boundary and tint / Ffin tir mynediad ac arlliw
	Access land in woodland area / Tir mynediad mewn ardal coedog
	Access information point / Pwynt gwybodaeth mynediad
	Firing and test ranges in the area. Danger! Observe warning notices / Meysydd tanio a phrofi yn yr ardal. Perygl! Rhaid ufuddhau arwyddion rhybudd
	Access permitted within managed controls, for example, local byelaws / Caniatâd mynediad o fewn rheolaeth, er enghraifft, deddf leol Visit <a href="http://www.mod.uk/access">www.mod.uk/access</a> for information Ewch i <a href="http://www.mod.uk/access">www.mod.uk/access</a> ar gyfer wybodaeth

#### General features / Arweddion cyffredinol

	Gravel pit / Grobwll		Windmill, with or without sails / Melin, wynt gyda hwyllau neu hebddynt				
	Sand pit / Pwll tywod		Wind pump; wind generator / Pwmp gwynt; generadur gwynt				
	Other pit or quarry / Pwll neu chwared arall		Electricity transmission line / Lein trawsyrru trydan				
	Landfill site or slag heap / Tomen sbwriel neu sorod		Slopes / Liethrau				
	<table border="0"> <tr> <td rowspan="2">} Current or former place of worship / Lleoedd addoli</td> <td rowspan="2">}</td> <td>with tower / gyda thŵr</td> </tr> <tr> <td>with spire, minaret or dome / gyda meindwr, minarét neu gromen</td> </tr> </table>	} Current or former place of worship / Lleoedd addoli	}	with tower / gyda thŵr	with spire, minaret or dome / gyda meindwr, minarét neu gromen		Boundary post / Polyn ffin
} Current or former place of worship / Lleoedd addoli	}			with tower / gyda thŵr			
		with spire, minaret or dome / gyda meindwr, minarét neu gromen					
	Place of worship / Lleoedd addoli		Boundary stone / Carreg ffin				
	Building; important building / Adeilad; adeilad pwysig		Clubhouse / Tŷ clwb				
	Glasshouse / Tŷ gwydr		Footbridge / Pont troed				
	Youth hostel / Hostel ieuencid		Milepost; milestone / Postyn milltir; carreg milltir				
	Bunkhouse, camping barn, other hostel (selected areas only) / Byncws, ysgubor wersylla, hostel eraill (ardaloedd detholedig yn unig)		Monument / Cofadail				
	Bus or coach station / Gorsaf fysiau		<table border="0"> <tr> <td rowspan="2">} selected areas only / ardaloedd detholedig yn unig</td> <td rowspan="2">}</td> <td>Post office / Swyddfa'r post</td> </tr> <tr> <td>Police station / Swyddfa'r heddlu</td> </tr> </table>	} selected areas only / ardaloedd detholedig yn unig	}	Post office / Swyddfa'r post	Police station / Swyddfa'r heddlu
} selected areas only / ardaloedd detholedig yn unig	}	Post office / Swyddfa'r post					
		Police station / Swyddfa'r heddlu					
	Lighthouse; disused lighthouse / Goleudy; goleudy nas defnyddir		School / Ysgol				
	Beacon / Goleufa		Town hall / Neuadd y dref				
	Triangulation pillar / piler triangli		Normal tidal limit / Terfyn arferol y llanw				
	Mast / Mast		Well; spring / Ffynnon; tarddiad				








# 1:25 000 Scale Colour Raster / Graddfa 1:25 000 Raster Lliw

## Legend / Arysgrif

### General information / Gwybodaeth cyffredinol

#### Vegetation / Planhigion










Limits of vegetation are defined by positioning of symbols /  
Mae terfynnu planhigion yn cael eu dangos trwy osod symbolau

	Coniferous trees / Coed conwydd
	Non-coniferous trees / Coed di-gôn
	Coppice / Coedlan
	Orchard / Perllan
	Scrub / Prysgoid
	Bracken, heath or rough grassland / Rhodyn, rhosydd neu lastir garw
	Marsh, reeds or saltings / Corsydd, brwyn neu forfa







#### Heights and natural features / Uchderau a nodweddion naturiol

52	Ground survey height / Uchder arolwg tir
284	Air survey height / Uchder arolwg awyr






Surface heights are to the nearest metre above mean sea level. Heights shown close to a triangulation pillar refer to the ground level height at the pillar and not necessarily at the summit / Mae uchder arwynebau i'r fetr agosaf uwchben lefel y mor. Mae uchderau sy'n cael eu dangos yn agos i biler triogli yn cyfeirio at uchder lefel y ddaear wrth y piler ac nid ei gopa o reidwydd

	Vertical face/cliff / Wyneb unionsyth/clogwyn
	Contours are at 5 or 10 metres vertical interval / Mae cyfng fertigol o 5 i 10 metr rhwng y cyfuchinau
	Loose rock / Creigiau rhydd
	Boulders / Cerrig mawrion
	Outcrop / Brig
	Scree / Sgri
	Water / Dŵr
	Mud / Llaidd
	Sand; sand and shingle / Tywod; tywod a cherrig mân

#### Boundaries / Ffiniau

	National / Cenedlaethol
	County / Sir
	Unitary Authority (UA), Metropolitan District (Met Dist), London Borough (LB) or District / Awdurdod Unedol, Dosbath Prifddinesig, Bwrdeistref neu Ddosbath Llundain
	Civil Parish (CP) or Community (C) / Plwyf neu Gymuned Ddinesig
	Constituency (Const) or Electoral Region (ER) / Westminster: County (Co Const), Borough (Boro Const) or Burgh Const; Scotland: Parliamentary Const (P Const), Parliamentary ER (PER); Wales: Assembly Const (Asly Const), Assembly ER (Asly ER); European: European ER (Euro ER), European Const (Euro Const); Etholaeth neu Eitholaeth Rhanbarthol; Westminster: Sir (Co Const), Bwrdeistref (Boro Const) neu Burgh Const; Alban: Etholaeth Seneddol (P Const), ER Seneddol (PER); Cymru: Etholaeth Cynulliad (Asly Const), ER Cynulliad (Asly ER); Ewropeaidd: ER Ewropeaidd (Euro ER), Etholaeth Ewropeaidd (Euro Const)
	National Park boundary / Ffin Parc Cenedlaethol

#### Archaeological and historical information / Gwybodaeth archeolegol a hanesyddol

	Site of antiquity / Safle heneb
	Site of battle (with date) / Safle brwydyr (gyda dyddiad)
	VILLA Roman / Rhufeinig
	Castle Non-Roman / Anrhufeinig
	Visible earthwork / Cloddwaith i'w weld

Information provided by English Heritage for England and the Royal Commissions on the Ancient and Historical Monuments for Scotland and Wales / Darparwyd gwybodaeth gan y Comisiwn Brenhinol ar Gofebau Hanesyddol Lloegr a Henebion a Chofebau Hanesyddol Yr Alban a Chymru



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## Chapter 3 Georeferencing

A definition for registering raster images within a geographic framework is the process of assigning map coordinates to the raster image data and resampling the pixels of the image to conform to the map projection grid. This allows tiles of map data to be located in their correct geographic position relative to the map projection and also to themselves.

Great Britain is surveyed and mapped using the Transverse Mercator (or Gauss-Kruger) projection, so all raster tiles will be mapped to this projection as it applies to Ordnance Survey National Grid if using World or TAB files supplied by Ordnance Survey.

Within the MIF record header the following information will be found under COORDSYS:

CoordSys Earth Projection 8, 79, "m", -2, 49, 0.9996012717, 400000, -100000 Bounds  
(4.17232513428e-011, 7.7486038208e-011) (700000, 1300000)

This information relates to the Transverse Mercator projection, its position relative to the rest of the world and also an individual tile's position relative to the projection. The record header is constructed as (not all fields have to be used):

CoordSys Earth Projection 8	The 8 relates to a MapInfo® identifier, in this case the Transverse Mercator projection.
79	A MapInfo identifier, in this case this relates to Ordnance Survey of Great Britain 1936, Airy ellipsoid.
"m"	Relates to the unit of measurement, in this case metres.
-2	This is the origin of the projection in respect of longitude.
49	This is the origin of the projection in respect of latitude.
0.9996012717	Indicates the distortion of the tile at the central meridian. A value of 1.0 would indicate no distortion at all. However, distortion within this projection is minimal, even at the far western or eastern limits.
400000, -100000	These figures indicate the false origin of the British National Grid. They represent the south-west corner of the Transverse Mercator projection, which overlays Great Britain, so all coordinates for any tile, no matter what scale, will always be positive.
Bounds: (4.17232513428e-011, 7.7486038208e-011)	These values represent the minimum bounding X and Y coordinates for the tile.
(700000, 1300000)	These values represent the maximum bounding X and Y coordinates for the tile.

## Chapter 4 Image file directory (TIFF)

The image file directory for TIFF will contain a selection of the following entries:

### Tag 254 (NewSubfileType)

An indication of the kind of data contained in this sub-file, for example, value = 0

### Tag 256 (ImageWidth)

The number of columns in the image, the number of pixels per row, for example, value = 4000

### Tag 257 (ImageLength)

The number of rows of pixels in the image, for example, value = 4000

### Tag 258 (BitsPerSample)

Number of bits per component, for example, value = 8

### Tag 259 (Compression)

Compression scheme used on the image data, for example, value = 5 (LZW)

### Tag 262 (Photo.Interpretation)

The colour space of the image data, for example, value = 3 (RGB Palette).

### Tag 270 (ImageDescription)

A string that describes the subject of the image, for example, value = 1:25 000 SU41

### Tag 273 (StripOffsets)

For each strip, the byte offset of that strip, for example, 1st 4 values = 5640 19678 35692 51409

### Tag 278 (RowsPerStrip)

The number of rows in each strip, for example, value = 8

### Tag 279 (StripByteCounts)

For each strip, the number of bytes in that strip after compression, for example, 1st 4 values = 14038 16014 15717 15442

### Tag 282 (XResolution)

The number of pixels per Resolution Unit in the Image Width, for example, value = 100/1

### Tag 283 (YResolution)

The number of pixels per Resolution Unit in the Image Length, for example, value = 100/1

### Tag 296 (ResolutionUnit)

Units used for Resolution, for example, value = 3 (Centimetre)

### Tag 306 (DateTime)

Date and time of image creation, for example, value = 2007:06:30 12:38:41

### Tag 320 (ColourMap)

Look-up table, for example, value = 1st 4 values = 22873 31354 39321 59110

### Tag 33432 (Copyright)

Copyright notice, for example, value = ORDNANCE SURVEY CROWN COPYRIGHT 2007

*NOTE: The values given above are relevant to 1:25 000 scale TIFF data with LZW compression.*

## TIFF

### Colour image directory (TIFF)

	Tag number	TIFF 8-bit uncompressed	TIFF 8-bit LZW compressed
File Byte Order :		MM (Little-endian)	MM (Little-endian)
Magic Number :		42	42
Number of fields in IFD :		18	18
NewSubfileType	254	0	0
Image Width	256	4 000	4 000
ImageLength	257	4 000	4 000
BitsPerSample	258	8	8
Compression	259	1 (Uncompressed)	5 (LZW)
Photo.Interpretation	262	3 (RGB Palette)	3 (RGB Palette)
ImageDescription	270	1:25 000 TILE SU41	1:25 000 TILE SU41
XResolution	282	100/1	100/1
YResolution	283	100/1	100/1
ResolutionUnit	296	3 (Centimetre)	3 (Centimetre)
DateTime	306	2007:09:20 11:20:04	2007:09:20 11:20:04
ColorMap	320	1st 4 values = 22873 31354 39321 59110	1st 4 values = 22873 31354 39321 59110
Copyright	33432	ORDNANCE SURVEY CROWN COPYRIGHT 2007	ORDNANCE SURVEY CROWN COPYRIGHT 2007

The tag values listed in the above table are relevant to 1:25 000 scale Intel® TIFF raster data.

It should be noted that customers can access tag information from a raster file image by right clicking on a TIFF data image and looking at properties, and then left clicking on summary.

## Annexe A Glossary

The purpose of this chapter is to provide a glossary of terms used in the definition of products, services, licensing and other terms and conditions for 1:25 000 Scale Colour Raster.

### **American Standard Code for Information Interchange (ASCII)**

A standard binary coding system used to represent characters within a computer.

### **binary digit (BIT)**

The smallest possible unit of data, resulting from a choice between 0 and 1.

### **boundary**

A boundary forms the division between two similar real-world objects, for example, property boundary or administrative boundary, and is defined by one or more lines.

### **byte**

A unit of computer storage of binary data, usually comprising 8 bits, equivalent to a character.

### **character**

A distinctive mark; an inscribed letter; one of a set of writing symbols.

### **character code**

The binary representation of a single element of a character set; for example, EBCDIC, ASCII.

### **coordinate pair**

A coordinate pair is an easting and a northing.

### **coordinate transformation**

A computational process of converting an image or map from one coordinate system to another.

### **compact disc**

Read-only memory (CD-ROM). A data storage medium. A 12-cm disc similar to the audio CD. It is an alloy disc pitted with tiny holes and then coated in plastic. A laser head reads the pattern of the holes and translates them into binary data.

### **copyright**

The sole legal right to print or publish a work. Crown Copyright subsists in all Ordnance Survey publications for a 50-year period, from the end of the year in which they were first published, by virtue of the *Copyright Designs and Patents Act 1988*.

### **customer**

An organisation or individual that makes use of Ordnance Survey's data supply facilities. This includes both direct sales customers of Ordnance Survey as well as customers of Licensed Partners. It does not include anyone, or any organisation, that has access to Ordnance Survey material without charge.

### **data**

A representation of facts, concepts or instructions in a formalised manner suitable for communication, interpretation or processing.

### **database**

An organised, integrated collection of geographic data, which may or may not be spatial data. It is stored so that specific applications can access the data by different logical paths. A database is accessed and managed by a database management system (software for managing database information).

### **data format**

A specification that defines the order in which data is stored or a description of the way data is held in a file or record.

### **data quality**

Attributes of a dataset that define its suitability for a particular purpose, such as completeness, positional accuracy, currency and so on.



**data structure**

The defined logical arrangement of data as used by a system for data management; a representation of a data model in computer form.

**data transfer medium**

This is the means by which computer files are transferred from one computer to another. Transfer media may be subdivided into communications media and physical media.

**dataset**

Data as supplied in a particular format to customers, whether internal or external to Ordnance Survey.

**density**

A measure of the number of units of data held on a stated length of storage surface. For example, some magnetic tapes may be recorded at a density of 1 600 bits per inch (bpi). Often referred to as packing density.

**delivery mechanism**

The method of supply of data to a customer (such as offline and online).

**descriptive name**

A name describing a real-world object or feature (for example, School) as shown on the 1:25 000 Scale Colour Raster map.

**definitive name**

The name as shown on the 1:25 000 Scale Colour Raster map.

**digital**

Data that is expressed as numbers (digits) in computer-readable form.

**digital update**

The supply of revised digital data to a customer at a predetermined interval of time.

**direct sale**

A direct transaction between Ordnance Survey and a customer.

**distinctive name**

A text feature that forms a name that distinguishes it from other text features of the same type, for example, Millbrook School.

**dots per inch (dpi)**

The resolution, or fineness, of a raster image.

**eastings**

See [rectangular coordinates](#).

**JPEG**

An image named after the Joint Photographic Experts Group, it uses a lossy compression format. It is designed for compressing a full colour or greyscale images of natural, real-world scenes and works well on photographs. It is the de facto standard for photographs on the web.

**encoding**

The process of converting information to a computer-readable form, for example, digitising maps.

**feature**

A geographic entity such as a building or stream, either taken from a map or surveyed directly from the real world. Can be a point/symbol, text or line.

**format**

The specified arrangement of data, for example, the layout of a printed document, the arrangement of the parts of a computer instruction, the arrangement of data in a record.

**generalisation**

The cartographic process of simplifying the depiction of features to fit the output scale. For example road widening is necessary at smaller scales to enhance their visibility.

**geocode**

Assigning a geographic location to data, for example, adding coordinates to an address.

**geographic coordinates**

Coordinates, usually expressed as latitudes and longitudes, which define position on the Earth's surface.

**georef**

A definition for registering raster images within a geographic framework is the process of assigning map coordinates to the raster image data and resampling the pixels of the image to conform to the map projection grid.

**gigabyte (Gb)**

1 073 741 824 bytes, a measure of data storage capacity (see [megabyte](#)).

**kilobyte (Kb)**

1 024 bytes, a measure of data storage capacity.

**Licensed Partner**

Any organisation that has entered into a formal licence agreement with Ordnance Survey to market map information or to incorporate map data with their application or service.

**linear feature**

Map feature in the form of a line (for example, river, and boundary) that may or may not represent a real world (existent) feature.

**local origin**

The local origin of rectangular coordinates is the south-west corner of the 1 km by 1 km National Grid square they identify.

**map scale**

The ratio between the extent of a feature on the map and its extent on the ground, normally expressed as a representative fraction, for example, 1:1250, 1:50 000 and so on.

**megabyte (Mb)**

1 048 576 bytes, a measure of data storage capacity (see [gigabyte](#)).

**National Grid**

The metric grid on the Transverse Mercator projection used by Ordnance Survey on all post-Second World War mapping to provide an unambiguous spatial reference in Great Britain for any place or entity, whatever the map scale.

**northings**

See [rectangular coordinates](#).

**origin**

The zero point in a system of [rectangular coordinates](#).

**pixel**

In the 1:25 000 scale product a pixel is a single point represented by a square.

**points**

A pair of coordinates.

**raster data**

Attribute data expressed as an array of pixels, with spatial position implicit in the ordering of the pixels.

**real-world object**

The real-world feature represented by a feature, for example, a building, a fence, a wood.

**rectangular coordinates**

Also known as x-y coordinates and as eastings and northings. These are two-dimensional coordinates that measure the position of any point relative to an arbitrary origin on a plane surface (for example, a map projection, a digitising table or a VDU screen).

**stipple**

Used to produce light or dark shading (for example, building/water fill); this is dependent on spacing of the dots – the denser the dots, the darker the effect.

**string**

A set of items that can be arranged into a sequence according to a rule.

**supply format**

The file format in which the data is supplied to the customer.

**tag**

Tags are unique numbers that are used for identifying specific information in TIFF files, for example, image width, image length, bits per sample, photo interpretation and resolution.

**terminator**

Character, or character string, or field, or record used to signal the end of a record, or section, or volume or database.

**tile**

A unit of map used to divide large areas into regular and more manageable sizes.

**TIFF**

TIFF is a tagged image file format-based file format for storing and interchanging raster images with the most recent version – 6.0 published in 1992.

**transfer format**

The format used to transfer data between computer systems. In general usage, this can refer not only to the organisation of data but also to the associated information, such as attribute codes, which are required in order to successfully complete the transfer.

**transfer medium**

The physical medium on which digital data is transferred from one computer system to another. For example, compact disc.

**UNIX®**

An operating system that supports multitasking and is used by many workstations and mini computers.

**update**

The process of adding to and revising existing digital map data to take account of change.

**volume**

A physical unit of the transfer medium that is a single disk, or a single DVD.

## Annexe B Tourist features

Abbey	National Trust property (England and Wales)
Adventure activity centre	Nature reserve
Amusement park	Observatory
Angling	Oceanarium
Aquarium	Open farm
Arboretum	Ornamental drive
Art centre – major centres only	Owl sanctuary
Art gallery – major galleries only	Park and ride – all year/seasonal
Artificial ski slope	Parking (rural only)
Bird garden	Picnic site
Bird sanctuary – not when in nature reserve	Pinetum
Boat hire	Pleasure flights
Boat trips	Pleasure park
Botanical gardens	Planetarium
Brass rubbing centre	Pony trekking
Butterfly farm	Pottery
Camp site	Preserved railway
Canal trips	Public convenience (rural only)
Canoeing centre – including coastal features	Public hard
Caravan site	Public house
Camp/Caravan site	Public slipway
Castle	Public telephone
Cathedral	Rare breeds centre
Cave, cavern	Recreation centre
Country park	Reindeer park
Craft centre	Reptiliary
Cycle hire	River cruises
Cycle trails	Roman site – shown on 'Hadrian's Wall' sheets only
Deer sanctuary	Safari park
Deer park	Sailing centre
Distillery	Seal sanctuary
Donkey sanctuary – major sanctuaries only	Shire horse centre
Dry ski slope	Skiing
Electric boat charging point – shown on 'The Broads' sheets only	Ski centre
Emergency telephone	Ski slope – described only when artificial
Falconry centre	Sports centre
Forestry Commission visitor centre	Swannery
Fort	Tennis centre
Garden	Theme park
Golf course/Links	Tide mill
Hawk conservancy centre	Tourist information centre – all year/seasonal; includes Tourist board, Trail
Hawk reserve	Viewpoint
Hawk sanctuary	Vineyard
Heritage centre	Visitor centre
Hill fort	Walks
Hill figure – shown if accessible to the public	Waterfall
Historic house	Water mill
Horse riding	Water skiing centre – including coastal features
Inn (rural only)	Water sports/activities – inland water areas only
Karting	Wildfowl centre
Leisure centre	Wildfowl reserve
Leisure pool	Wildlife centre
Model village	Wildlife park
24 hour moorings – shown on 'The Broads' sheet only	Windmill
Motoring organisation telephone	Wind surfing centre – including coastal features
Museum national heritage	Working farm
National Park information centre	Zoo