1:25 000 Scale Colour Raster
User guide and technical specification
# 1:25 000 Scale Colour Raster

## User guide

### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>3</td>
</tr>
<tr>
<td>Contact details</td>
<td>3</td>
</tr>
<tr>
<td>Use of the product</td>
<td>3</td>
</tr>
<tr>
<td>Purpose and disclaimer</td>
<td>3</td>
</tr>
<tr>
<td>Copyright in this guide</td>
<td>4</td>
</tr>
<tr>
<td>Data copyright and other intellectual property rights</td>
<td>4</td>
</tr>
<tr>
<td>Trademarks</td>
<td>4</td>
</tr>
<tr>
<td>Back-up provision of the product</td>
<td>4</td>
</tr>
<tr>
<td>Using this guide</td>
<td>4</td>
</tr>
<tr>
<td><strong>Chapter 1</strong></td>
<td><strong>5</strong></td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chapter 2</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td></td>
</tr>
<tr>
<td>Settlements</td>
<td>6</td>
</tr>
<tr>
<td>Man-made structures</td>
<td>6</td>
</tr>
<tr>
<td>Transport</td>
<td>6</td>
</tr>
<tr>
<td>Water features</td>
<td>6</td>
</tr>
<tr>
<td>Natural landscape features</td>
<td>6</td>
</tr>
<tr>
<td>Rights of way and access land</td>
<td>6</td>
</tr>
<tr>
<td>Height</td>
<td>6</td>
</tr>
<tr>
<td>Administrative boundaries</td>
<td>7</td>
</tr>
<tr>
<td>Tourist information</td>
<td>7</td>
</tr>
<tr>
<td>Heritage and archaeological sites</td>
<td>7</td>
</tr>
<tr>
<td>Coastline and coastal features</td>
<td>7</td>
</tr>
<tr>
<td>National Grid lines</td>
<td>7</td>
</tr>
<tr>
<td>Annotation</td>
<td>7</td>
</tr>
<tr>
<td><strong>Chapter 3</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td></td>
</tr>
<tr>
<td>Coordinates</td>
<td>8</td>
</tr>
<tr>
<td>Coverage</td>
<td>8</td>
</tr>
<tr>
<td><strong>Chapter 4</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td></td>
</tr>
<tr>
<td>TIFF</td>
<td>9</td>
</tr>
<tr>
<td><strong>Chapter 5</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td><strong>Data compression</strong></td>
<td></td>
</tr>
<tr>
<td>Image compression</td>
<td>10</td>
</tr>
<tr>
<td>Lossless compression</td>
<td>10</td>
</tr>
<tr>
<td>Lossy compression</td>
<td>10</td>
</tr>
<tr>
<td>TIFF</td>
<td>10</td>
</tr>
<tr>
<td><strong>Chapter 6</strong></td>
<td><strong>11</strong></td>
</tr>
<tr>
<td><strong>Georeferencing</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chapter 7</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td><strong>Revision</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chapter 8</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>Data measures</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Annexe A</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td><strong>Case study</strong></td>
<td></td>
</tr>
<tr>
<td>Transport Direct</td>
<td>14</td>
</tr>
<tr>
<td>Underpinning multi-mode transport services</td>
<td>14</td>
</tr>
<tr>
<td><strong>Annexe B</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td>Metadata</td>
<td></td>
</tr>
<tr>
<td><strong>Annexe C</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>Product and service performance report form</td>
<td>16</td>
</tr>
</tbody>
</table>
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 C and return it to us.

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

Customer Service Centre
Ordnance Survey
Adanac Drive
SOUTHAMPTON
SO16 0AS

General enquiries (calls charged at local rate): +44 (0)8456 05 05 05
Dedicated Welsh Language HelpLine: 08456 05 05 04
Textphone (deaf and hard of hearing users only please): +44 (0)23 8005 6146

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

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You are advised to copy the supplied data to a backup medium.

Using this guide

The documentation is supplied in portable document format (PDF) only. Free Adobe® 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 geographic/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®, 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 1:8 000 to 1:25 000 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 *lossless* compression (see chapter 5).

**TIFF PackBits** 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 data 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. Lossless compression retains the original quality of an image when it is uncompressed. This process does not 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 is not 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 is not 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. Geographical information systems (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.
**Chapter 8  Data measures**

Ordnance Survey measures the data in its products in one or more of the ways set out in table 1 below.

**Table 1 Definitions of data measures**

<table>
<thead>
<tr>
<th>Data measure</th>
<th>Definition</th>
<th>Sub-measure</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Completeness</strong></td>
<td>Presence and absence of features against the specified data content*</td>
<td>Omission</td>
<td>Features representing objects that conform to the specified data content but are not present in the data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commission</td>
<td>Features representing objects that do not conform to the specified data content but are present in the data</td>
</tr>
<tr>
<td><strong>Logical consistency</strong></td>
<td>Degree of adherence to logical rules of data structure, attribution and relationships</td>
<td>Conceptual consistency</td>
<td>How closely the data follows the conceptual rules (or model)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Domain consistency</td>
<td>How closely the data values in the dataset match the range of values in the dataset specification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Format consistency</td>
<td>The physical structure (syntax): how closely the data stored and delivered fits the database schema and agreed supply formats</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Topological consistency</td>
<td>The explicit topological references between features (connectivity) – according to specification</td>
</tr>
<tr>
<td><strong>Positional accuracy</strong></td>
<td>Accuracy of the position of features</td>
<td>Absolute accuracy</td>
<td>How closely the coordinates of a point in the dataset agree with the coordinates of the same point on the ground (in the British National Grid reference system)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relative accuracy</td>
<td>Positional consistency of a data point or feature in relation to other local data points or features within the same or another reference dataset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geometric fidelity</td>
<td>The ‘trueness’ of features to the shapes and alignments of the objects they represent*</td>
</tr>
<tr>
<td><strong>Temporal accuracy</strong></td>
<td>Accuracy of temporal attributes and temporal relationships of features</td>
<td>Temporal consistency</td>
<td>How well ordered events are recorded in the dataset (life cycles)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporal validity (currency)</td>
<td>Validity of data with respect to time: the amount of real-world change that has been incorporated in the dataset that is scheduled for capture under current specifications</td>
</tr>
<tr>
<td><strong>Thematic accuracy (attribute accuracy)</strong></td>
<td>Classification of features and their attributes</td>
<td>Classification correctness</td>
<td>How accurately the attributes within the dataset record the information about objects*</td>
</tr>
</tbody>
</table>

*When testing the data according to the dataset specification against the ‘real world’ or reference dataset.*
Annexe A  Case study

Transport Direct

Underpinning multi-mode transport services

Transport Direct is the first ever web portal giving instant access to comprehensive journey information by both public and private transport across Great Britain. It includes a journey planner, maps, live travel information and onward links to coach and rail fares and ticketing services from different travel retailers. As it develops, the portal will also incorporate services such as information on hotels, restaurants and other points of interest. Read more at:

Annexe B  Metadata

ISO 19115 compliant UK GEMINI discovery level metadata is provided for the data and can be found on the GIGateway® (www.gigateway.org.uk)

The following is a detailed description of the metadata elements that are provided on the GIGateway:

Title: The title of the product.

Abstract: The abstract gives a brief description of the product.

Currency: The currency takes the form of date of last update for the feature.

Lineage: The lineage metadata takes the form of product specification name and date of product specification.

Spatial extent: The spatial extent is supplied in the form of geographic identifiers (for example, England, Scotland and Wales) and in the form of geographic coordinates.

Spatial reference system: The spatial reference system for all products takes the form of a British National Grid system, namely OSGB36®.

Data format: Data format takes the form of the name of the format or formats the product is supplied in.

Frequency of updates: Frequency of update takes the form of a stated period of time.

Distributor contact details: Distributor contact details include with postal address, phone number, fax number, email address and website.

Data originator: Given as the company having primary responsibility for the intellectual content of the data source; in all cases this will be Ordnance Survey.

Other metadata available includes keywords, start date of data capture, access constraints, use constraints, level of spatial data, supply media and presentation details.
Annexe C  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: .............................................................................................................................................................
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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,
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# 1:25 000 Scale Colour Raster

Technical specification

## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>18</td>
</tr>
<tr>
<td>Purpose of this specification and disclaimer</td>
<td>18</td>
</tr>
<tr>
<td>Copyright in this specification</td>
<td>18</td>
</tr>
<tr>
<td><strong>Chapter 1</strong> Specification</td>
<td>19</td>
</tr>
<tr>
<td>1:25 000 Scale Colour Raster</td>
<td>19</td>
</tr>
<tr>
<td><strong>Chapter 2</strong> Legend</td>
<td>20</td>
</tr>
<tr>
<td>Welsh</td>
<td>22</td>
</tr>
<tr>
<td>Unique symbols used on 1:25 000 scale mapping</td>
<td>24</td>
</tr>
<tr>
<td>Common abbreviations</td>
<td>25</td>
</tr>
<tr>
<td><strong>Chapter 3</strong> Georeferencing</td>
<td>26</td>
</tr>
<tr>
<td><strong>Chapter 4</strong> Image file directory (TIFF)</td>
<td>27</td>
</tr>
<tr>
<td>TIFF</td>
<td>28</td>
</tr>
<tr>
<td>Colour image directory (TIFF)</td>
<td>28</td>
</tr>
<tr>
<td><strong>Annexe A</strong> Glossary</td>
<td>29</td>
</tr>
</tbody>
</table>
Introduction

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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)
  - England 1 508
  - Scotland 1 130
  - Wales 289

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 chapter 7 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/.
Chapter 2 Legend

English

1:25 000 Scale Colour Raster

Communications

ROADS AND PATHS

Not necessary rights of way

Motorway

Service area

A6

A30

B9079

Junction number

Mains road

Secondary road

Narrow road with passing places

Road under construction

Road generally more than 4m wide

Road generally less than 4m wide

Other road, drive or track, fenced and untended

Path

Ferry

Pictorial

OTHER PUBLIC ACCESS

Other routes with public access (not normally shown in urban areas)

National Trail

Long Distance Route

Pemissive footpath

Permissive bridleway

Traffic-free cycle route

National cycle network route number

Scotland

In Scotland, everyone has access rights in law to most land and inland water, provided access is exercised reasonably. This includes walking, cycling, horse-riding and water access, for recreational and educational purposes, and for crossing land or water. Access rights do not apply to motorised activities, hunting, shooting or fishing, nor if your dog is not under proper control. The Scottish Outdoor Access Code is the reference point for responsible behaviour, and can be obtained at www.scottishaccess.com or by phoning your local Scottish Natural Heritage office. “Land Reform (Scotland) Act 2003”

National Trust for Scotland

Forestry Commission Land / Woodland Trust Land

England and Scotland


ACCESS LAND

England

Portion of access land on this map is intended as a guide to land which is normally accessible for access on foot, for example access land classed 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. Visit www.countrywideaccess.gov.uk for up-to-date information

Access land boundary and list

Access land in current test area

Access information point

Access permitted within managed land for examples, local byelaws. Visit www.accessarea.gov.uk for information

PUBLIC RIGHTS OF WAY (Rights of way are not shown on maps of Scotland)

Footpath

Bridleway

Byway open to all traffic

Restricted byway (from 2nd May 2009 roads used as public paths were redesignated as restricted byways. They provide a right of way for walkers, horse riders, cyclists and other non-mechanically propelled vehicles)

PUBLIC RIGHTS OF WAY shown on this map have been taken from local authority definitive maps and later amendments.

Rights of way are liable to change and may not be clearly defined on the ground.

Please check with the relevant local authority for the latest information.

The representation on this map of any other road, track or path is no evidence of the existence of a right of way

1:25 000 Scale Colour Raster technical specification chapter 2  v2.4 – 11/2010  © Crown copyright  Page 20 of 33
Unique symbols used on 1:25 000 scale mapping

- World Heritage
- Codew
- Roman Sites
- London River Services
- London Underground Station
- Glasgow Underground Station
- 'A' Road Service Area
- Toll Road Junction

Viewpoint Symbol represents approximate angle of view from the viewpoint:
- 90°
- 160°
- 180°
- 225°
- 360°

National Park Visitor Centres:
- North York Moors
- Northumberland
- Yorkshire Dales
- Lake District
- Pembrokeshire
- Exmoor

The Norfolk Broads only (Explorer OL40)
- Windmill (open to the public)
- Moorings (Free)
- Electric Boat Charging Point

Isles of Scilly only (Explorer 101)
- Closed
- Always open
- Limited opening
- Isles of Scilly Wildlife Trust Visitor Centre

Purbeck & South Dorset only (Explorer OL15)
- Ministry of Defence (MOD) area
- Restricted access to the public within Firing Ranges
- Contact MOD for Range Live Firing and Access Information
- Range walk starting point
- Range walks
- Roads open when range walks open
- WEB Address (for information on access to MOD areas)
  - www.royalnavy.mod.uk

Eastbourne & Beachy Head only (Explorer 123)
- Point of Access to the foreshore

Changes to Natural Features:
- Natural features may appear in Black or Grey
- Vertical face/ridge
- Loose rock
- Boulders
- Outcrop
- Sand
- From Mid 2007 Rock features are being changed from Black to Grey

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## Common abbreviations

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allot Gdns</td>
<td>Allotment gardens</td>
<td>Met Sta</td>
<td>Meteorological station</td>
</tr>
<tr>
<td>Amb Sta</td>
<td>Ambulance station</td>
<td>MHW</td>
<td>Mean high water</td>
</tr>
<tr>
<td>B Rock</td>
<td>Boundary rock</td>
<td>MHWS</td>
<td>Mean high water springs</td>
</tr>
<tr>
<td>Bdy</td>
<td>Boundary</td>
<td>Mkt</td>
<td>Market</td>
</tr>
<tr>
<td>BP</td>
<td>Boundary post or plate</td>
<td>MLW</td>
<td>Mean low water</td>
</tr>
<tr>
<td>Br</td>
<td>Bridge</td>
<td>MLWS</td>
<td>Mean low water springs</td>
</tr>
<tr>
<td>BS</td>
<td>Boundary stone</td>
<td>Mon</td>
<td>Monument</td>
</tr>
<tr>
<td>Burial Gd</td>
<td>Burial ground</td>
<td>MP</td>
<td>Milepost</td>
</tr>
<tr>
<td>Car Pk</td>
<td>Car park</td>
<td>MS</td>
<td>Milestone</td>
</tr>
<tr>
<td>Cath</td>
<td>Cathedral</td>
<td>Multi Car</td>
<td>Multi-storey car park</td>
</tr>
<tr>
<td>Cemty</td>
<td>Cemetery</td>
<td>Munl</td>
<td>Municipal</td>
</tr>
<tr>
<td>CG</td>
<td>Cattle grid</td>
<td>Mus</td>
<td>Museum</td>
</tr>
<tr>
<td>CG Sta</td>
<td>Coastguard station</td>
<td>N</td>
<td>North</td>
</tr>
<tr>
<td>CH</td>
<td>Clubhouse</td>
<td>NTL</td>
<td>Normal tidal limit</td>
</tr>
<tr>
<td>Chy</td>
<td>Chimney</td>
<td>Obsy</td>
<td>Observatory</td>
</tr>
<tr>
<td>Coll</td>
<td>College</td>
<td>P</td>
<td>Post (on 1:25 000)</td>
</tr>
<tr>
<td>Comm Cen</td>
<td>Community centre</td>
<td>P</td>
<td>Post Office (on 1:50 000)</td>
</tr>
<tr>
<td>Conv Home</td>
<td>Convalescent home</td>
<td>PC</td>
<td>Public convenience</td>
</tr>
<tr>
<td>Cott</td>
<td>Cottage</td>
<td>PH</td>
<td>Public house</td>
</tr>
<tr>
<td>Crem</td>
<td>Crematorium</td>
<td>PL</td>
<td>Pipeline</td>
</tr>
<tr>
<td>Cvt</td>
<td>Convent</td>
<td>PO</td>
<td>Post Office</td>
</tr>
<tr>
<td>Dis</td>
<td>Disused</td>
<td>Pol Sta</td>
<td>Police station</td>
</tr>
<tr>
<td>Dismtd Rly</td>
<td>Dismantled railway</td>
<td>Pp</td>
<td>Pump</td>
</tr>
<tr>
<td>ELDR</td>
<td>European Long Distance Route</td>
<td>Pp Ho</td>
<td>Pump house</td>
</tr>
<tr>
<td>El Gen Sta</td>
<td>Electricity generating station</td>
<td>Ppg Sta</td>
<td>Pumping station</td>
</tr>
<tr>
<td>El Sub Sta</td>
<td>Electricity substation</td>
<td>Presby</td>
<td>Presbytery</td>
</tr>
<tr>
<td>Ex</td>
<td>Exchange</td>
<td>R</td>
<td>River</td>
</tr>
<tr>
<td>Fall</td>
<td>Waterfall</td>
<td>Rec</td>
<td>Rectory</td>
</tr>
<tr>
<td>FB</td>
<td>Footbridge</td>
<td>Recn Gd</td>
<td>Recreation ground</td>
</tr>
<tr>
<td>Ferry P</td>
<td>Ferry, passenger</td>
<td>Rems of</td>
<td>Remains of</td>
</tr>
<tr>
<td>Ferry V</td>
<td>Ferry, vehicular</td>
<td>Resr</td>
<td>Reservoir</td>
</tr>
<tr>
<td>Fm</td>
<td>Farm</td>
<td>Rly</td>
<td>Railway</td>
</tr>
<tr>
<td>F Sta</td>
<td>Fire station</td>
<td>S</td>
<td>South</td>
</tr>
<tr>
<td>Gdns</td>
<td>Gardens</td>
<td>S</td>
<td>Stone</td>
</tr>
<tr>
<td>Govt</td>
<td>Government (offices)</td>
<td>Sanatm</td>
<td>Sanatorium</td>
</tr>
<tr>
<td>Ho</td>
<td>House</td>
<td>Sch</td>
<td>School</td>
</tr>
<tr>
<td>Hosp</td>
<td>Hospital</td>
<td>Sl</td>
<td>Sluice</td>
</tr>
<tr>
<td>HPO</td>
<td>Head Post Office®</td>
<td>Spr</td>
<td>Spring</td>
</tr>
<tr>
<td>HQ</td>
<td>Headquarters</td>
<td>Sprs</td>
<td>Springs</td>
</tr>
<tr>
<td>H Ram</td>
<td>Hydraulic ram</td>
<td>St</td>
<td>Saint</td>
</tr>
<tr>
<td>Ind Est</td>
<td>Industrial estate</td>
<td>Sta</td>
<td>Station</td>
</tr>
<tr>
<td>Infmy</td>
<td>Infirmary</td>
<td>TA</td>
<td>Territorial Army</td>
</tr>
<tr>
<td>IRB Sta</td>
<td>Inshore rescue boat station</td>
<td>Tech Coll</td>
<td>Technical college</td>
</tr>
<tr>
<td>Inst</td>
<td>Institute</td>
<td>Tel Ex</td>
<td>Telephone exchange</td>
</tr>
<tr>
<td>Instn</td>
<td>Institution</td>
<td>TH</td>
<td>Town hall</td>
</tr>
<tr>
<td>Isoln Hospl</td>
<td>Isolation hospital</td>
<td>Tk</td>
<td>Track</td>
</tr>
<tr>
<td>Km</td>
<td>Kilometres</td>
<td>Toll</td>
<td>Toll bridge or gate</td>
</tr>
<tr>
<td>L</td>
<td>Loch</td>
<td>TV Sta</td>
<td>Television station</td>
</tr>
<tr>
<td>L Twr</td>
<td>Lighting tower</td>
<td>Twr</td>
<td>Tower</td>
</tr>
<tr>
<td>LB</td>
<td>London borough</td>
<td>Univ</td>
<td>University</td>
</tr>
<tr>
<td>LB Ho</td>
<td>Lifeboat house</td>
<td>Vic</td>
<td>Vicarage</td>
</tr>
<tr>
<td>LB Sta</td>
<td>Lifeboat station</td>
<td>W</td>
<td>Well</td>
</tr>
<tr>
<td>LC</td>
<td>Level crossing</td>
<td>War Meml</td>
<td>War memorial</td>
</tr>
<tr>
<td>Liby</td>
<td>Library</td>
<td>Wks</td>
<td>Works</td>
</tr>
<tr>
<td>Look Sta</td>
<td>Lookout station</td>
<td>Wr Twr</td>
<td>Water tower</td>
</tr>
<tr>
<td>LRTS</td>
<td>Light rapid transit system</td>
<td>Wr Wks</td>
<td>Water works</td>
</tr>
<tr>
<td>M</td>
<td>Metres</td>
<td>WT Sta</td>
<td>Wireless transmitting station</td>
</tr>
<tr>
<td>Meml</td>
<td>Memorial</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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
79
"m"
-2
49
0.9996012717
```

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) (700000, 1300000)
```

These values represent the minimum and 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)

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

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.

corrective
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 (CD)
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 which 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.

Digital Versatile Disc (DVD)
A data storage medium.

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 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, that 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).

**MIF**
MapInfo format.

**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.

TAB
MapInfo format.

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 minicomputers.

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

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