

# Soil Site Report

## Soil Report



## Sample Soil Report 3km

Easting: 482740

Northing: 261246

Site Area: 3km x 3km

Prepared for: Caroline Keay, Cranfield University

Date: 06 Nov 2024



## Citation

Citations to this report should be made as follows:

Cranfield University (2024) Soil site report, Soil Report for location 482740E, 261246N, 3km x 3km, Cranfield University.

Produced using [Soil Site Reporter](#)

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## About this Report

This Soils Site Report aims to support the teaching of soil science at undergraduate (BSc, NVQ etc.) or equivalent level. If you are a researcher, we suggest you contact us for access to more comprehensive Soils Site Reports and their underlying data.

This Soils Site Report identifies and describes the properties and capacities of the soil at your specified location as recorded in the National Soil Map for England and Wales. It has been produced by Cranfield University's [National Soil Resources Institute](#).

The National Soil Map represents the most accurate and comprehensive source of information about the soil at the national coverage in England and Wales. It maps the distribution of soil mapping units (termed soil associations) which are defined in terms of the main soil types (or soil series) that were recorded for each soil association during field soil survey. Each soil association is named after its principal soil series and these bear the location name from where they were first described (e.g. Windsor). Each of these soil associations have differing environmental characteristics (physical, chemical and biological) and it is by mapping these properties that the range of thematic maps in this report have been produced.

Soil types and properties vary locally, as well as at the landscape scale. It is not possible to identify precisely the soil conditions at a specific location without first making a site visit. We have therefore provided you with information about the range of soil types we have identified at and around your selected location. Schematic diagrams are also provided to aid accurate identification of the soil series at your site.

Whilst an eight-figure national grid reference should be accurate to within 100m, a single rural Postcode can cover a relatively large geographical area. Postcodes can therefore be a less precise basis for specifying a location. The maps indicate the bounded area the reports relate to.

Your Site Soil Report will enable you to:

- identify the soils most likely to be present at and immediately around your specified location;
- understand the patterns of soil variation around your location and how these correlate with changes in landscape;
- identify the nature and properties of each soil type present within the area;
- understand the relevant capacities and limitations of each of the soils and how these might impact on a range of factors such as surface water quality.

Provided that this Soils Site Report is not modified in any way and it is used in the context of your undergraduate course work, you may reproduce it for a third-party.

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# 1. Soil Thematic Maps

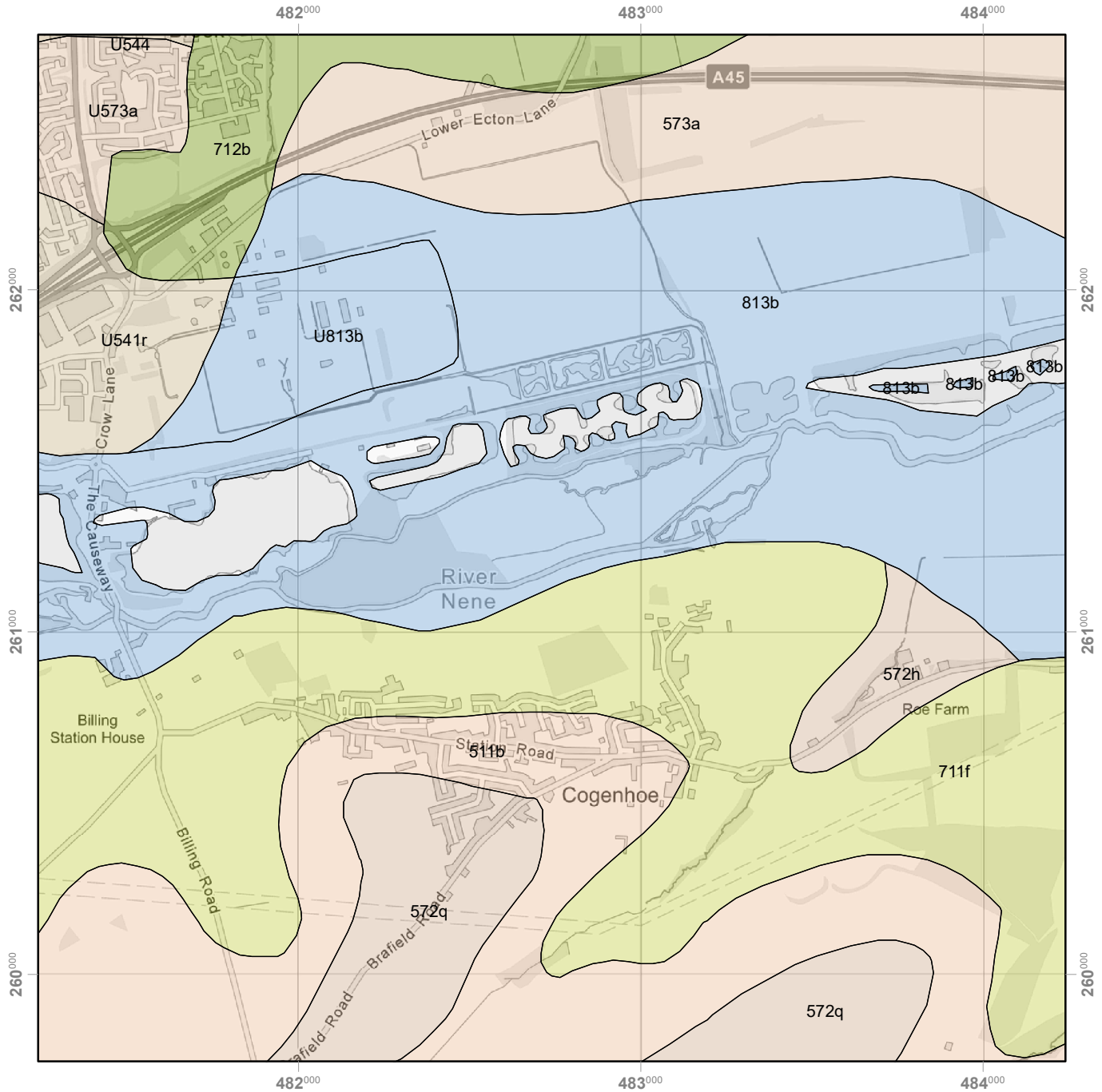
This section contains a series of maps of the area surrounding your selected location, presenting a number of themes relating to the characteristics of the soils. These provide an overview of the nature and condition of the local soil conditions. It is these conditions that may be used to infer the response of an area to certain events (with the soil as a receptor), such as pollution contamination from a chemical spill, or an inappropriate pesticide application and the likelihood of these materials passing through the soil to groundwater. Other assessments provide an insight into the way a location may impact, by corrosive attack or ground movement, upon structures or assets within the ground, for example building or engineering foundations or pipes and street furniture.

Soil is a dynamic environment with many intersecting processes, chemical, physical and biological at play. Even soils 'sealed' over by concrete and bitumen are not completely dormant. The way soils respond to events and actions can vary considerably according to the properties of the soil as well as other related factors such as land-use, vegetation, topography and climate. There are many threats facing our national soil resource today and importance should be given to identifying the best measures aimed towards soil protection and ensuring the usage of soils in the most sustainable way. This report is therefore a useful snapshot of the soil properties for your given area, providing a summary of a broad range of ground conditions



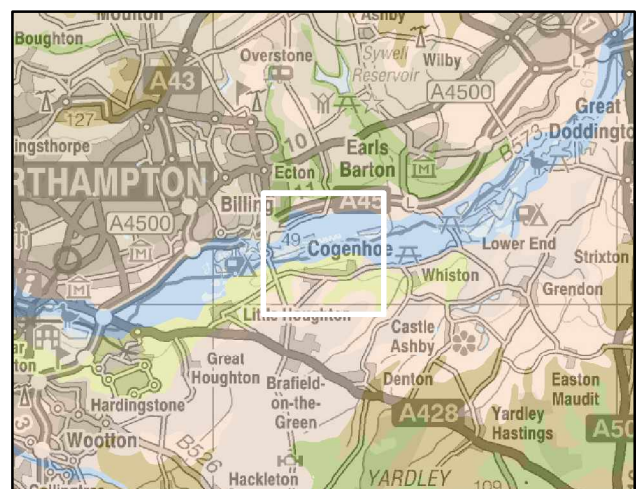
Figure 1: Location of study area

# 1a Soils - Spatial Distribution



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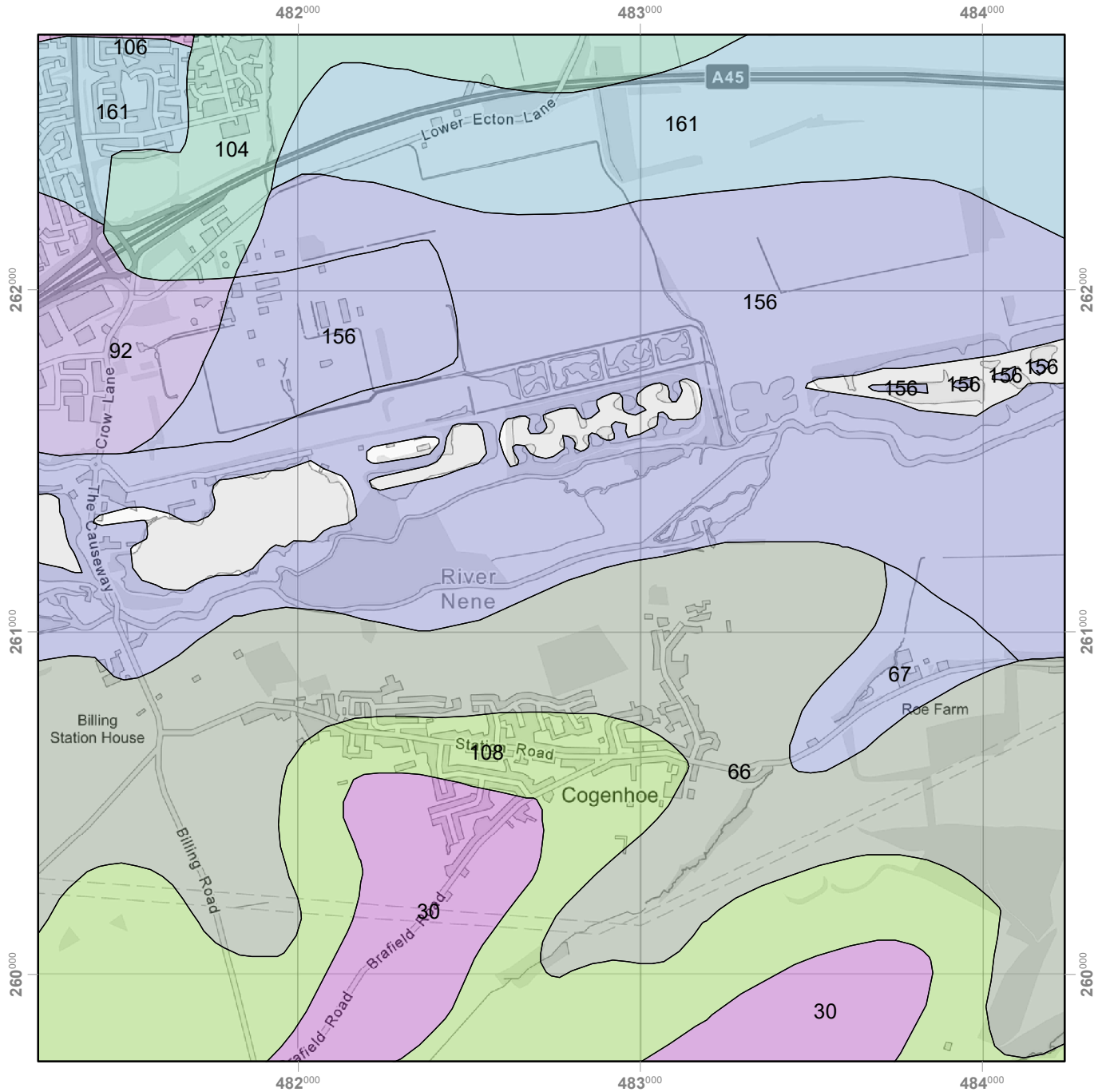
## Soils - Spatial Distribution Key

-  511b Moreton  
*Well drained calcareous clayey and fine loamy soils over limestone, in places shallow and brashy.*
-  541r WICK 1  
*Deep well drained coarse loamy and sandy soils locally over gravel.*
-  544 BANBURY  
*Well drained brashy fine and coarse loamy ferruginous soils over ironstone.*
-  572h OXPASTURE  
*Fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging.*
-  572q ASHLEY  
*Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar but wetter soils.*
-  573a WATERSTOCK  
*Deep permeable mainly fine loamy soils variably affected by groundwater.*
-  711f WICKHAM 2  
*Slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils.*
-  712b DENCHWORTH  
*Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.*
-  813b FLADBURY 1  
*Stoneless clayey soils, in places calcareous variably affected by groundwater.*

## SOIL ASSOCIATION DESCRIPTION

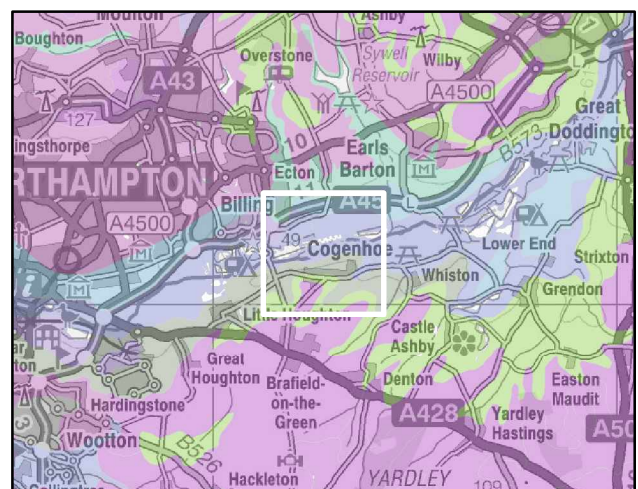
Soil associations represent a group of soil series (soil types) which are typically found occurring together, associated in the landscape (Avery, 1973; 1980; Clayden and Hollis, 1984). Soil associations may occur in many geographical locations around the country where the environmental conditions are comparable. For each of these soil associations, a collection of soil types (or soil series) are recorded together with their approximate proportions within the association. Soil associations have codes as well as textual names, thus code '554a' refers to the 'Frilford' association. Where a code is prefixed with 'U', the area is predominantly urbanised (e.g. 'U571v'). The soil associations for your location, as mapped above, are described in more detail in Section 2: Soil Association Descriptions.

# 1b Soil Parent Material












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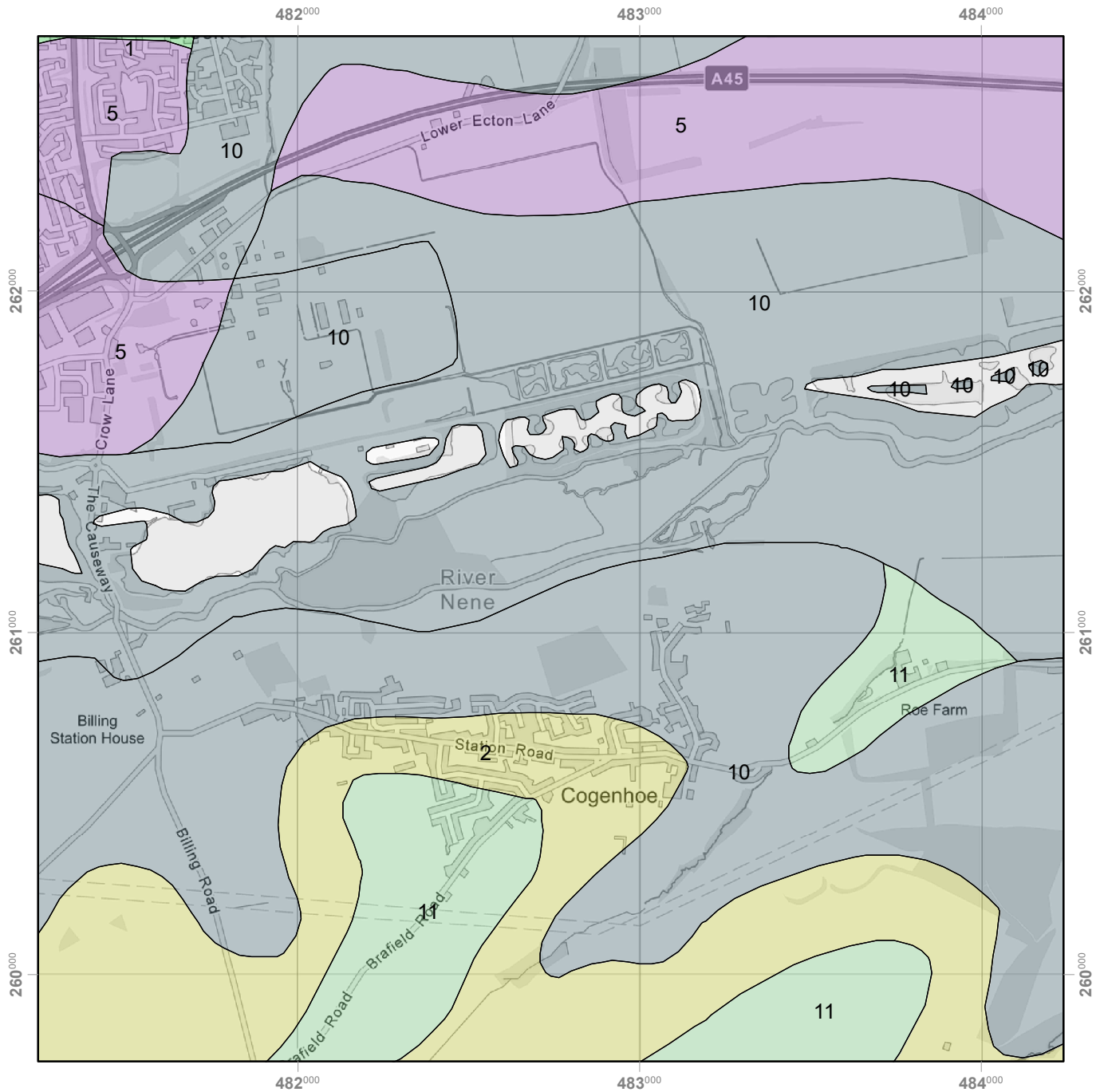
## Soil Parent Material Key

-  30 Chalky till
-  66 Drift over Jurassic and Cretaceous clay or mudstone
-  67 Drift over Jurassic and Cretaceous clay shale
-  92 Glaciofluvial or river terrace drift
-  104 Jurassic and Cretaceous clay
-  106 Jurassic and Cretaceous ironstone
-  108 Jurassic clay and limestone
-  156 River alluvium
-  161 River terrace drift

## SOIL PARENT MATERIAL DESCRIPTION

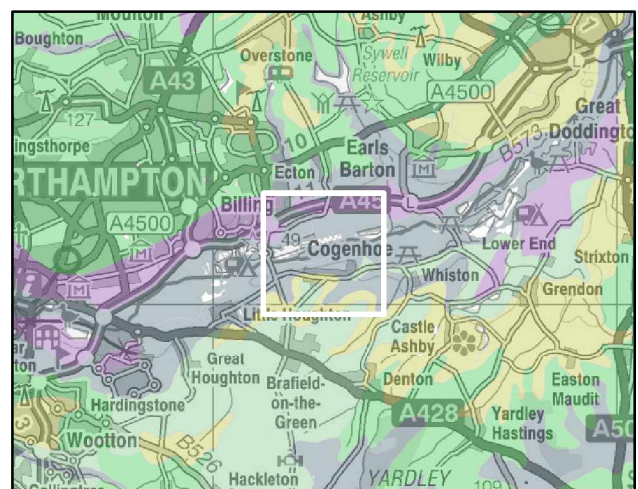
Along with the effects of climate, relief, organisms and time, the underlying geology or 'parent material' has a very strong influence on the development of the soils of England and Wales. Through weathering, rocks contribute inorganic mineral grains to the soils and thus exhibit control on the soil texture. During the course of the creation of the national soil map, soil surveyors noted the parent material underlying each soil in England and Wales. It is these general descriptions of the regional geology which is provided in this map.

## 1c Natural Soil Fertility



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## Natural Soil Fertility Key



1 High



2 Lime-rich



5 Low



10 Moderate

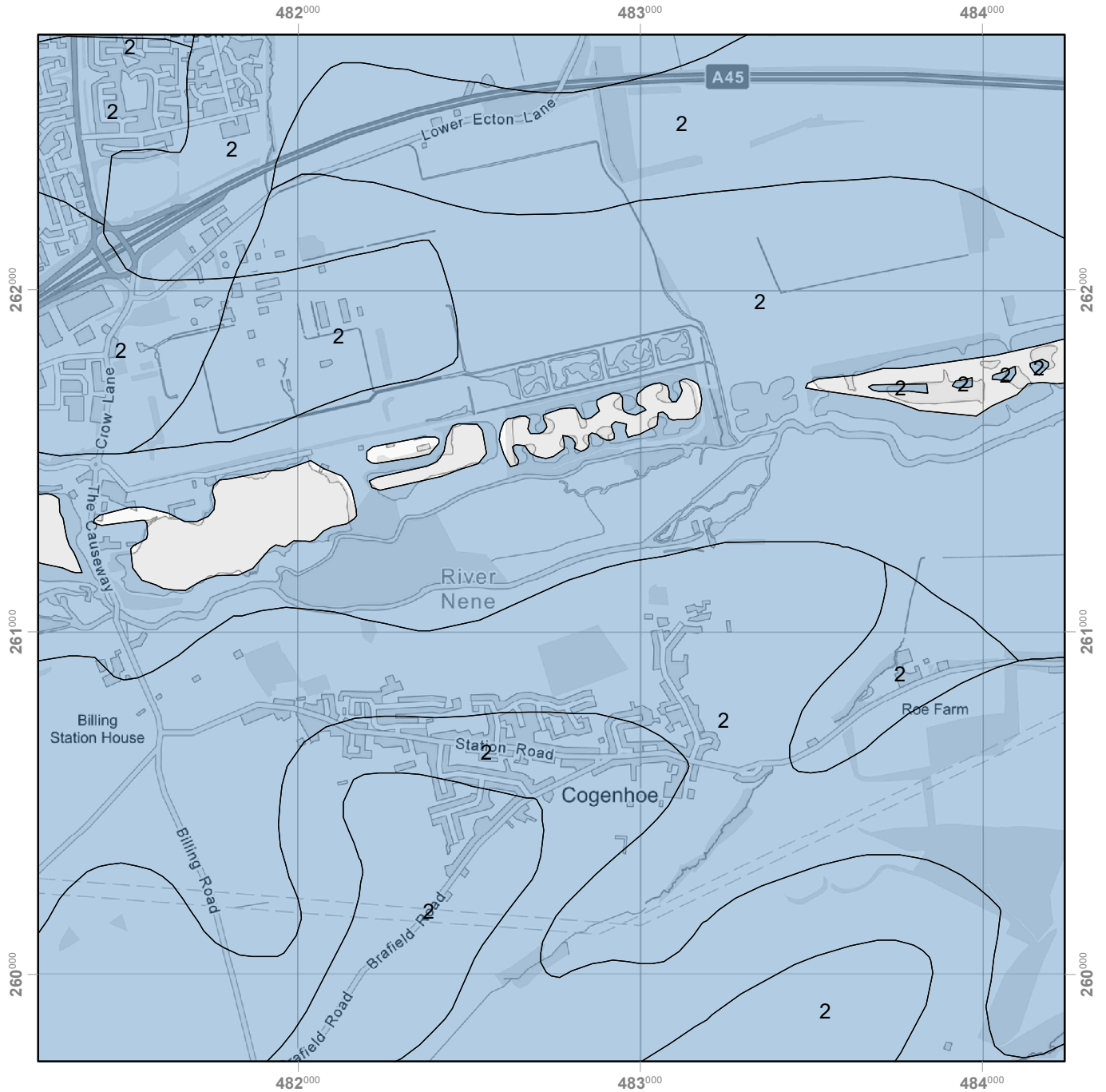


11 Moderate to high

## NATURAL SOIL FERTILITY DESCRIPTION

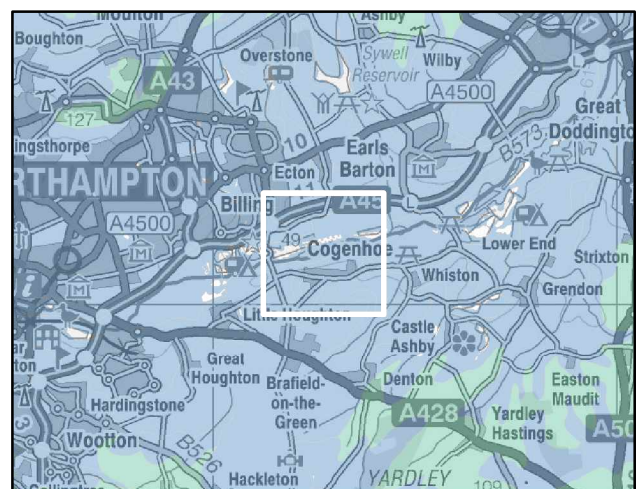
Soil fertility can be greatly altered by land management especially through the application of manures, lime and mineral fertilisers. What is shown in this map, however, is the likely natural fertility of each soil type. Soils that are very acid have low numbers of soil-living organisms and support heathland and acid woodland habitats. These are shown as of very low natural fertility. Soils identified as of low natural fertility are usually acid in reaction and are associated with a wide range of habitat types. The moderate class contains neutral to slightly acid soils, again with a wide range of potential habitats. Soil of high natural fertility are both naturally productive and able to support the base-rich pastures and woodlands that are now rarely encountered. Lime-rich soils contain chalk and limestone in excess, and are associated with downland, herb-rich pastures and chalk and limestone woodlands.

# 1d Simple Topsoil Texture




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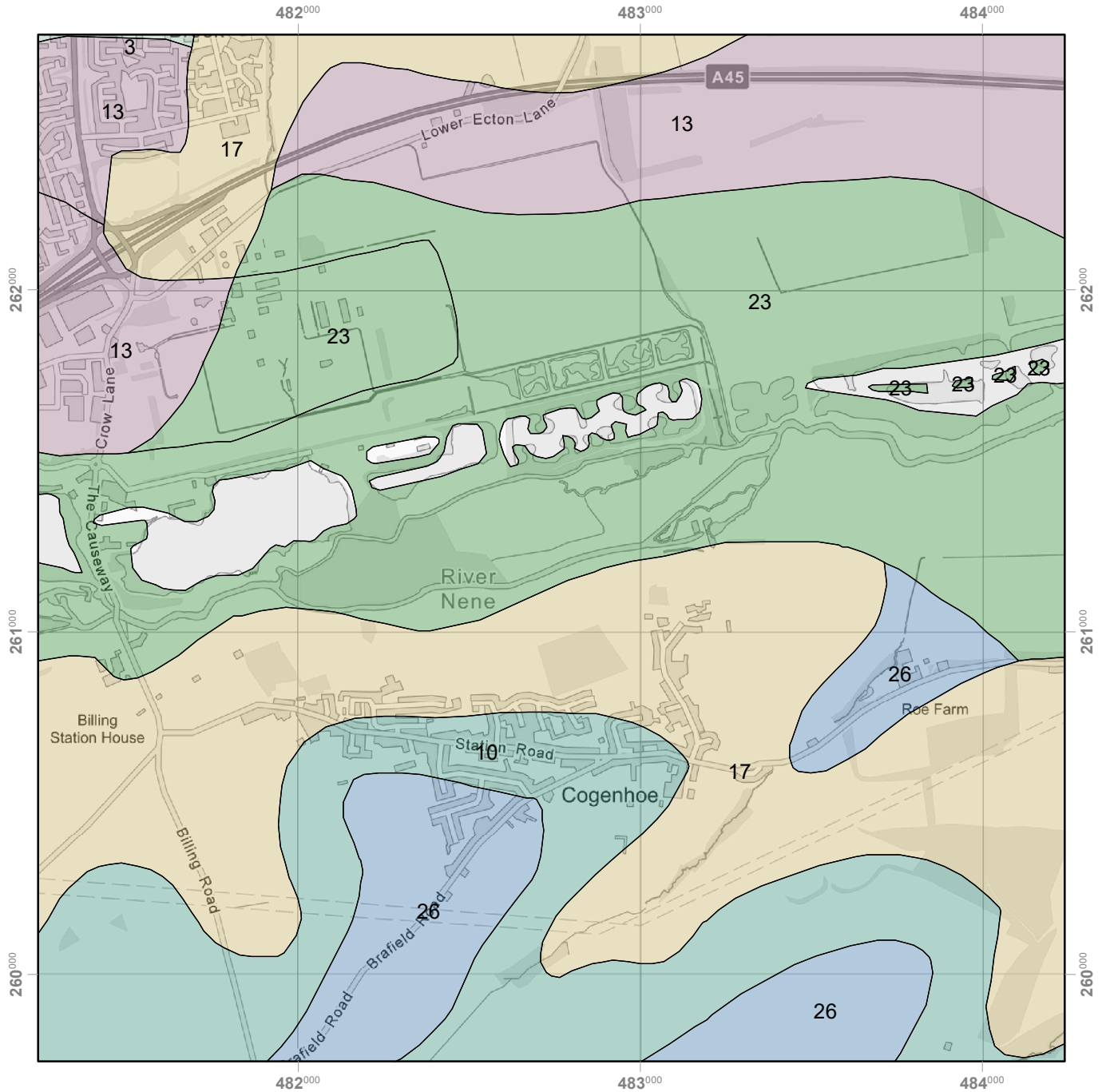
## Simple Topsoil Texture Key

 2 Loamy

### SIMPLE TOPSOIL TEXTURE DESCRIPTION

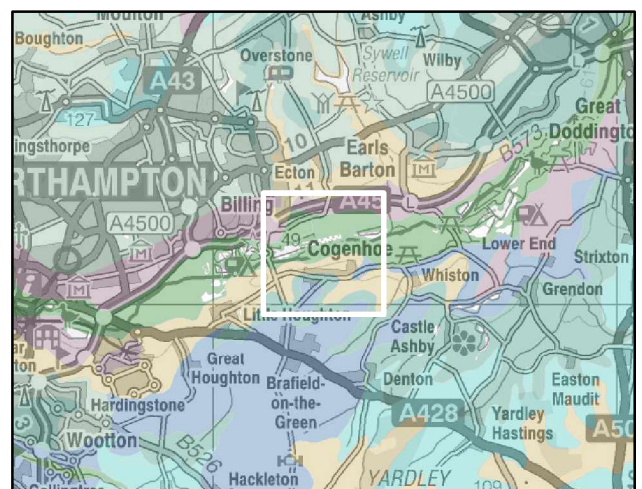
Soil texture is a term used in soil science to describe the physical composition of the soil in terms of the size of mineral particles in the soil. Specifically, we are concerned with the relative proportions of sand, silt and clay. Soil texture can vary between each soil layer or horizon as one moves down the profile. This map indicates the soil texture group of the upper 30 cm of the soil. Loamy soils have a mix of sand, silt and clay-sized particles and are intermediate in character. Soils with a surface layer that is dominantly organic are described as Peaty. A good understanding of soil texture can enable better land management.

# 1e Typical Habitats









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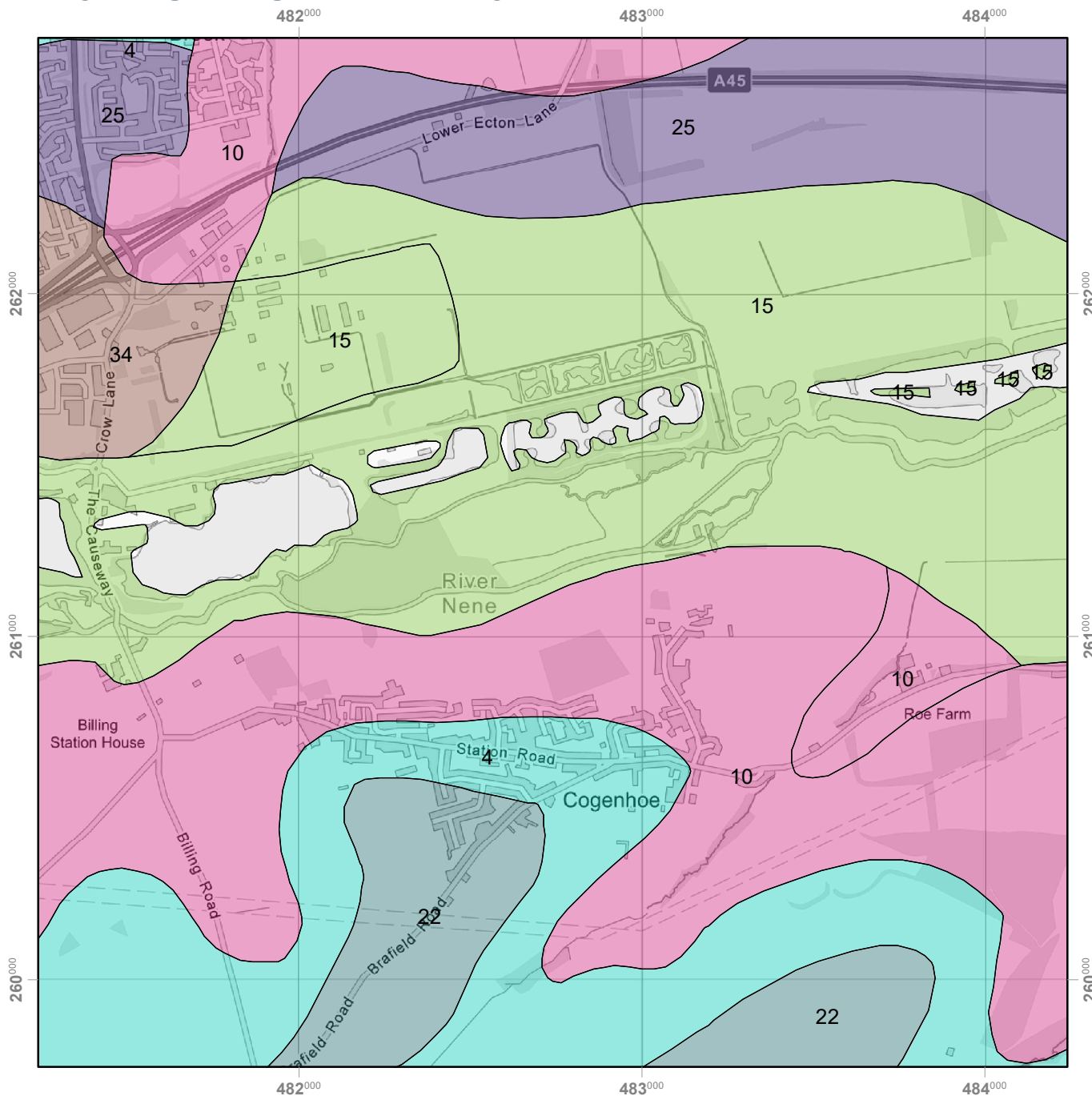
## Typical Habitats Key

-  3 Base-rich pastures and deciduous woodlands
-  10 Herb-rich chalk and limestone pastures; lime-rich deciduous woodlands
-  13 Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands
-  17 Seasonally wet pastures and woodlands
-  23 Wet flood meadows with wet carr woodlands in old river meanders
-  26 Wide range of pasture and woodland types

## TYPICAL HABITATS DESCRIPTION

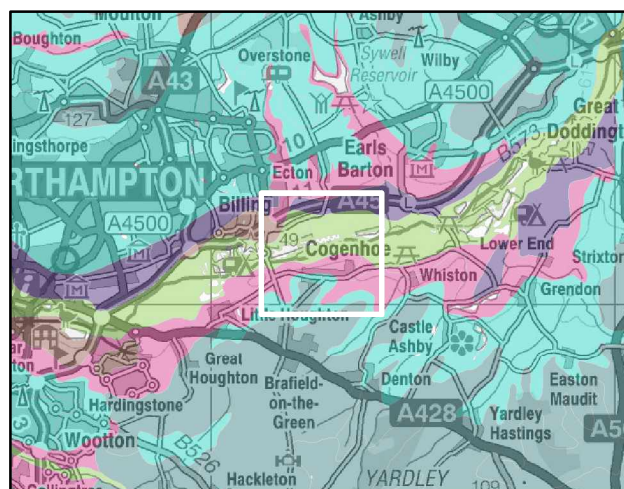
There is a close relationship between vegetation and the underlying soil. Information about the types of broad habitat associated with each soil type is provided in this map. Soil fertility, pH, drainage and texture are important factors in determining the types of habitats which can be established. Elevation above sea level and sometimes even the aspect, the orientation of a hillslope, can affect the species present. This map does not take into account the recent land management, but provides the likely natural habitats assuming good management has been carried out.

# 1f Hydrogeological Rock Type









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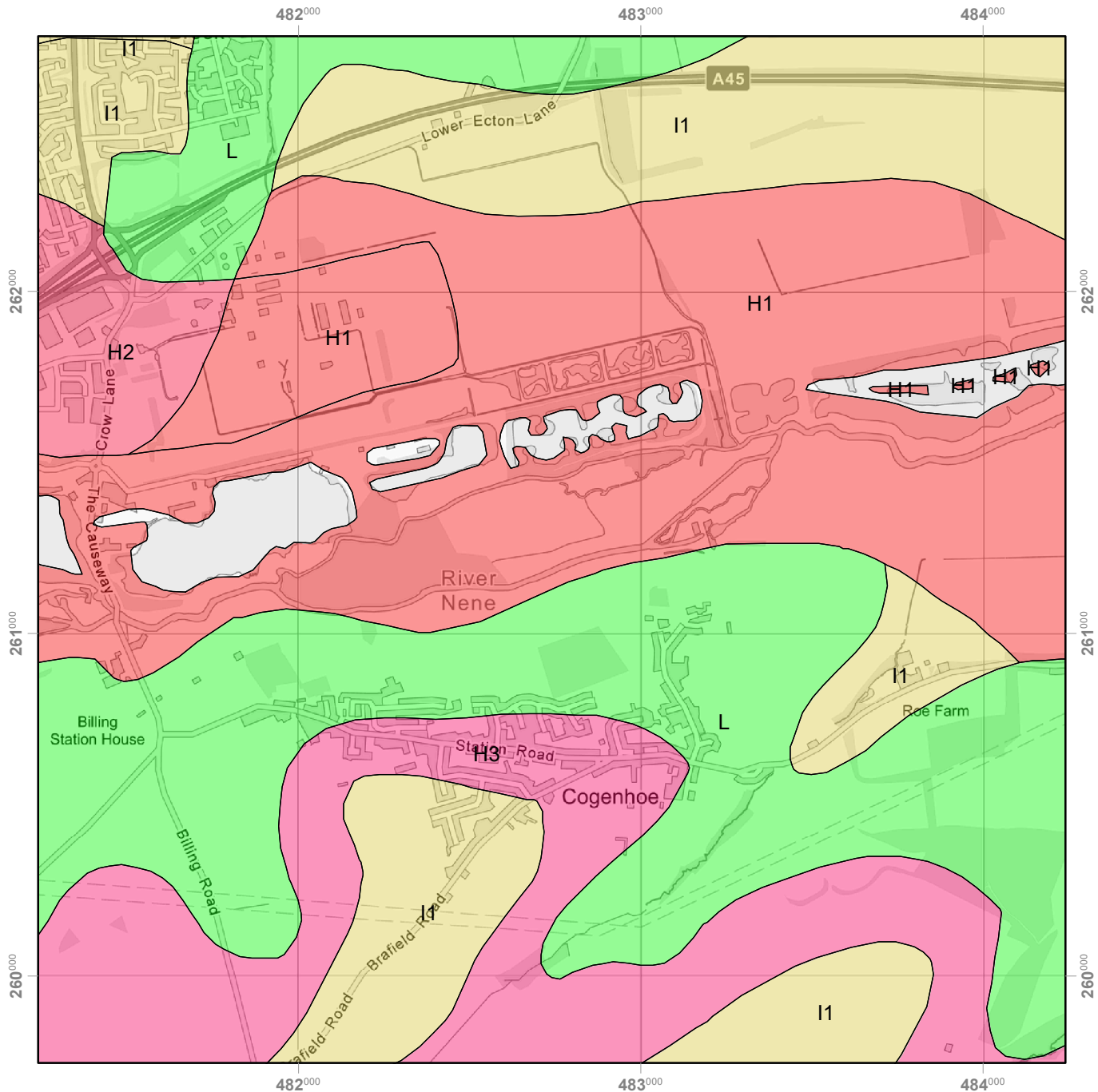
## Hydrogeological Rock Type Key

-  4 soft Magnesian, brashy or Oolitic limestone and ironstone
-  10 very soft massive clays
-  15 river alluvium
-  22 till and compact Head
-  25 loamy drift
-  34 sand

## HYDROGEOLOGICAL ROCK TYPE DESCRIPTION

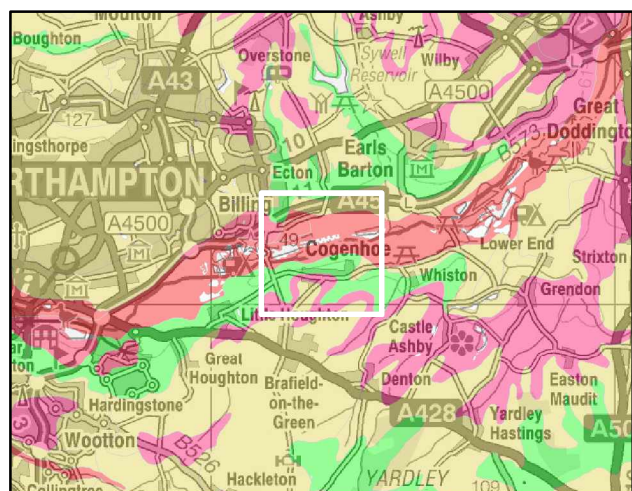
The hydrogeological classification of the soil parent materials provides a framework for distinguishing between soil substrates according to their general permeability and whether they are likely to overlie an aquifer. Every soil series has been assigned one of the 32 substrate classes and each of these is characterised according to its permeability (being characterised as permeable, slowly permeable or impermeable). For further information, see Boorman et al (1995).

# 1g Ground Water Protection Policy (GWPP)








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## Ground Water Protection Policy (GWPP) Key










-  H1 Soils of high leaching potential, which readily transmit liquid discharges because they are either shallow, or susceptible to rapid bypass flow directly to rock, gravel or groundwater
-  H2 Deep, permeable coarse textured soils of high leaching potential, which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential
-  H3 Coarse textured or moderately shallow soils of high leaching potential, which readily transmit non-adsorbed pollutants and liquid discharges but which have some ability to attenuate adsorbed pollutants because of their relatively large organic matter or clay content
-  I1 Soils of intermediate leaching potential which have a moderate ability to attenuate a wide range of diffuse source pollutants but in which it is possible that some non-adsorbed diffuse source pollutants and liquid discharges could penetrate the soil layer
-  L Soils in which pollutants are unlikely to penetrate the soil layer either because water movement is largely horizontal or because they have a large ability to attenuate diffuse source pollutants

### GWPP LEACHING CLASS DESCRIPTION

The Ground Water Protection Policy classes describe the leaching potential of pollutants through the soil (Hollis, 1991; Palmer et al, 1995). The likelihood of pollutants reaching ground water is described. Different classes of pollutants are described, including liquid discharges adsorbed and non-adsorbed pollutants.

## 2. Soil Association Descriptions

The following pages describe the following soil map units, (soil associations), in more detail.

-  Moreton 511b  
*Well drained calcareous clayey and fine loamy soils over limestone, in places shallow and brashy.*
-  WICK 1 541r  
*Deep well drained coarse loamy and sandy soils locally over gravel.*
-  BANBURY 544  
*Well drained brashy fine and coarse loamy ferruginous soils over ironstone.*
-  OXPASTURE 572h  
*Fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging.*
-  ASHLEY 572q  
*Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar but wetter soils.*
-  WATERSTOCK 573a  
*Deep permeable mainly fine loamy soils variably affected by groundwater.*
-  WICKHAM 2 711f  
*Slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils.*
-  DENCHWORTH 712b  
*Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.*
-  FLADBURY 1 813b  
*Stoneless clayey soils, in places calcareous variably affected by groundwater.*

The soil associations are described in terms of their texture and drainage properties and potential risks may be identified. The distribution of the soils across England and Wales are provided. Further to this, properties of each association's component soil series are described in relation to each other. Lastly, schematic diagrams of each component series are provided for greater understanding and in-field verification purposes. Further information on the soil associations and soil series can be found at [the LandIS Soils Guide](#)

## Moreton (511b)

*Well drained calcareous clayey and fine loamy soils over limestone, in places shallow and brashy.*

### a. General Description

Well drained calcareous clayey and fine loamy soils over limestone, in places shallow and brashy. Some deeper slowly permeable calcareous clayey soils. The major landuse on this association is defined as Winter cereals; some short term grassland and potatoes.

### b. Distribution (England and Wales)

The Moreton association covers 276 km<sup>2</sup> of England and Wales which accounts for 0.18% of the landmass. The distribution of this association is shown in figure 2. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

### c. Comprising Soil Series

Multiple soil series comprise a soil association. The soil series of the Moreton association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 1.

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

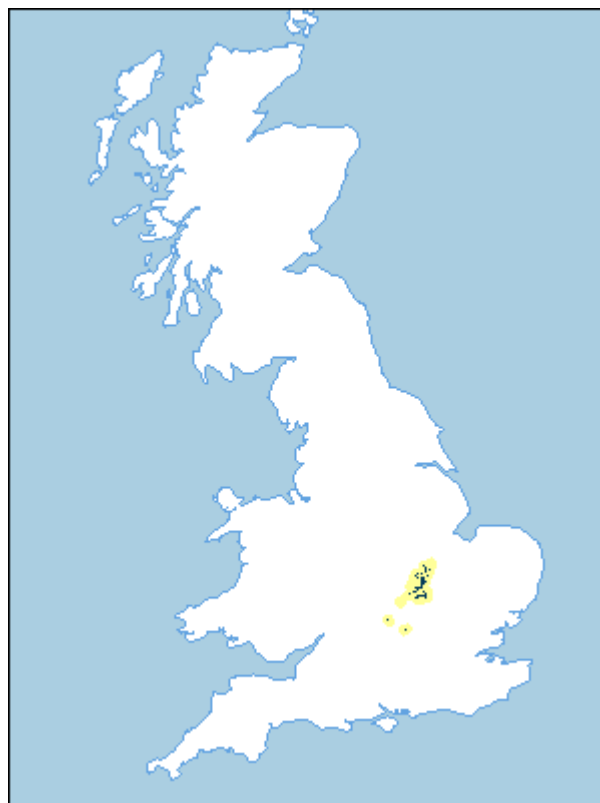


Figure 2: Association Distribution

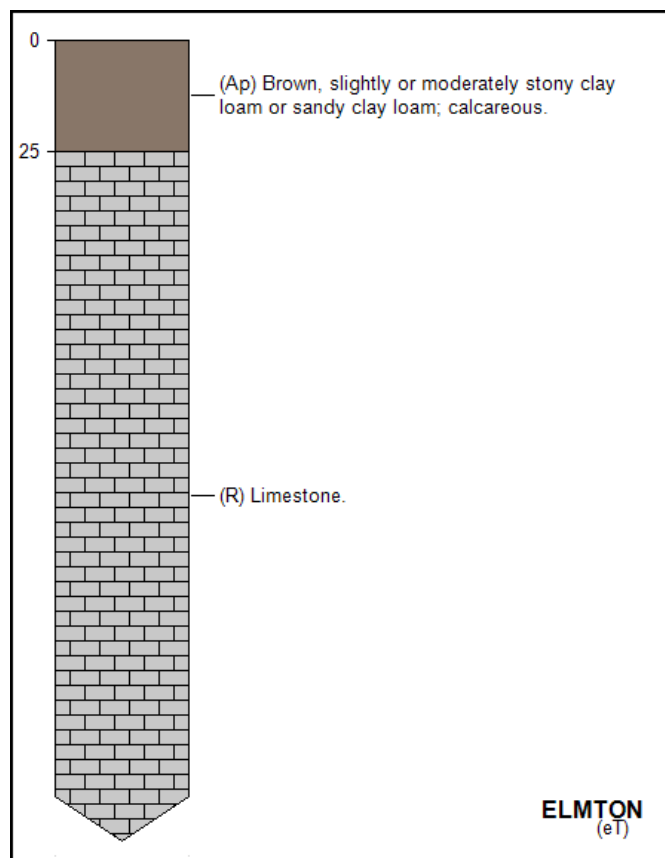
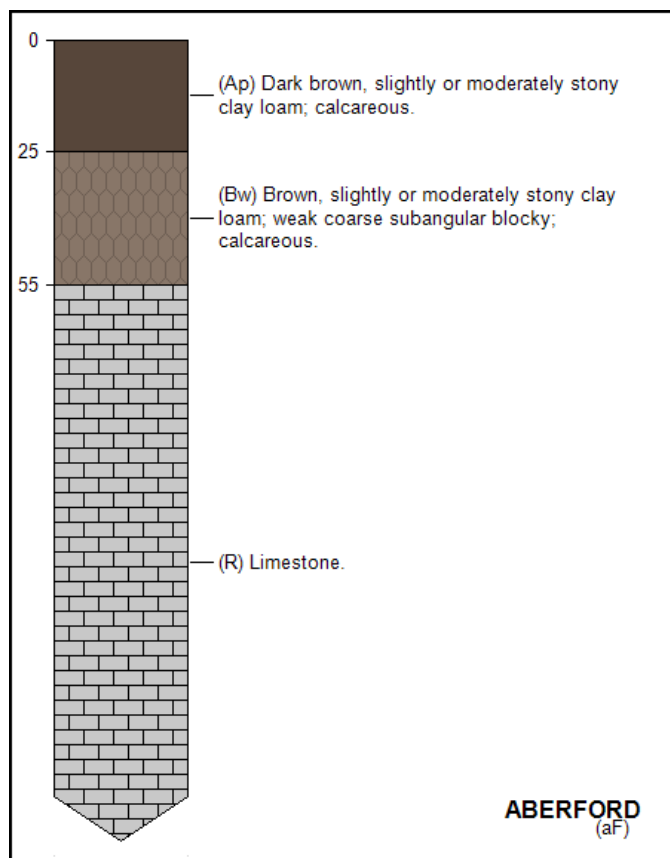
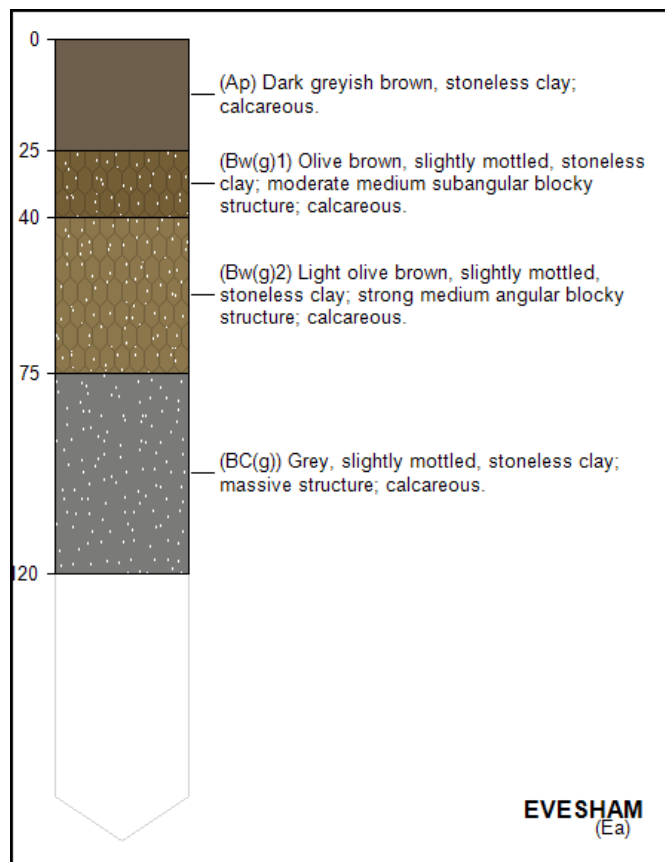
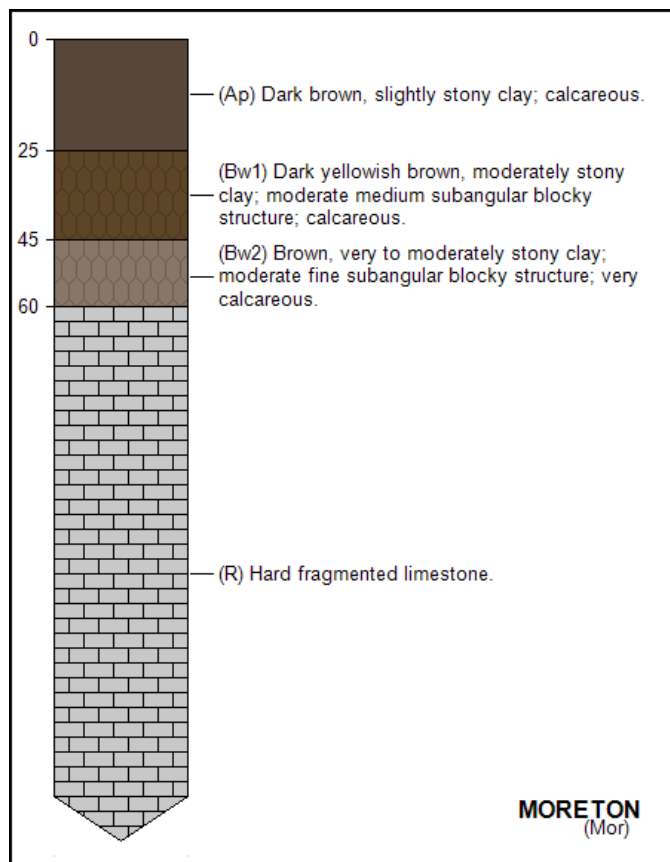
**Table 1: The component soil series of the Moreton soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.**

Soil Series	Description	Area %
MORETON (Mor)	clayey material over lithoskeletal limestone	32%
EVESHAM (Ea)	swelling clayey material passing to clay or soft mudstone	22%
ABERFORD (aF)	medium loamy material over lithoskeletal limestone	10%
ELMTON (eT)	medium loamy lithoskeletal limestone	10%
HASELOR (Hb)	swelling clayey material passing to clay with interbedded limestone	10%
SHERBORNE (Si)	clayey lithoskeletal limestone	10%
OTHER	other minor soils	6%

## Moreton (511b)

*Well drained calcareous clayey and fine loamy soils over limestone, in places shallow and brashy.*

### d. Moreton Component Series Profiles

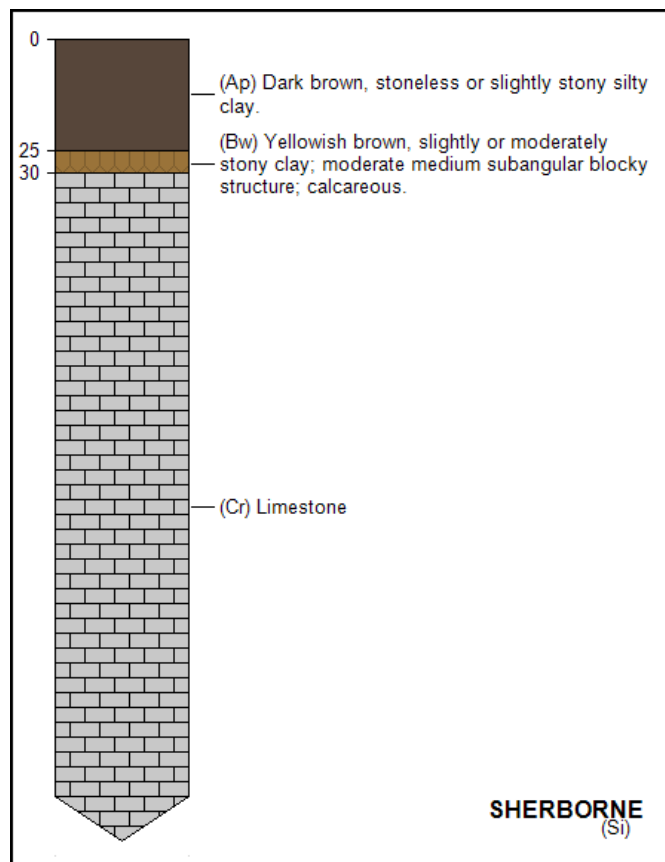
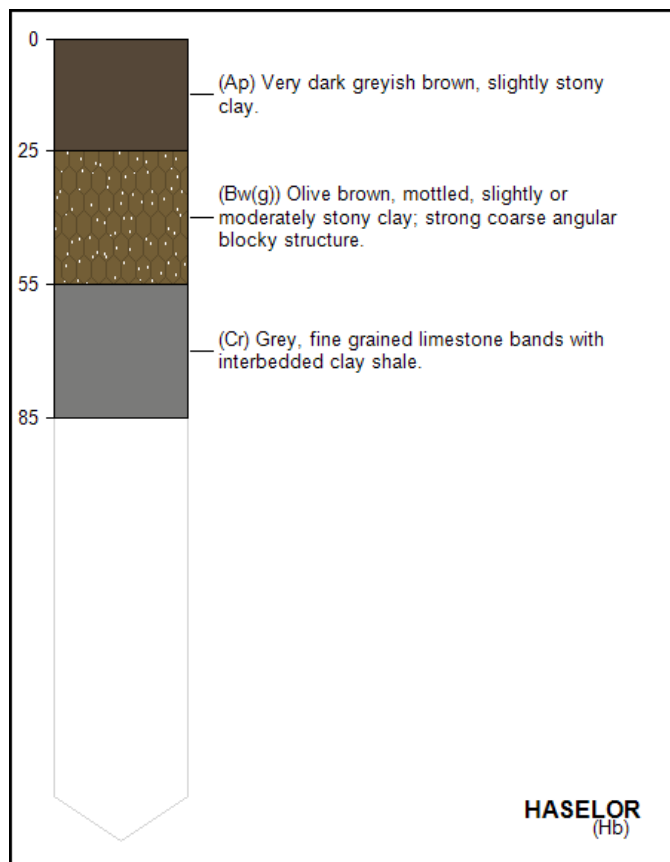




## Moreton (511b)

*Well drained calcareous clayey and fine loamy soils over limestone, in places shallow and brashy.*

### d. Moreton Component Series Profiles continued



**WICK 1 (541r)**

*Deep well drained coarse loamy and sandy soils locally over gravel.*

**a. General Description**

Deep well drained coarse loamy and sandy soils locally over gravel. Some similar soils affected by groundwater.

The major landuse on this association is defined as Cereals and some horticultural crops in drier lowlands; stock rearing and dairying in Cumbria.

**b. Distribution (England and Wales)**

The WICK 1 association covers 2531 km<sup>2</sup> of England and Wales which accounts for 1.67% of the landmass. The distribution of this association is shown in figure 3. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

**c. Comprising Soil Series**

Multiple soil series comprise a soil association. The soil series of the WICK 1 association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 2.

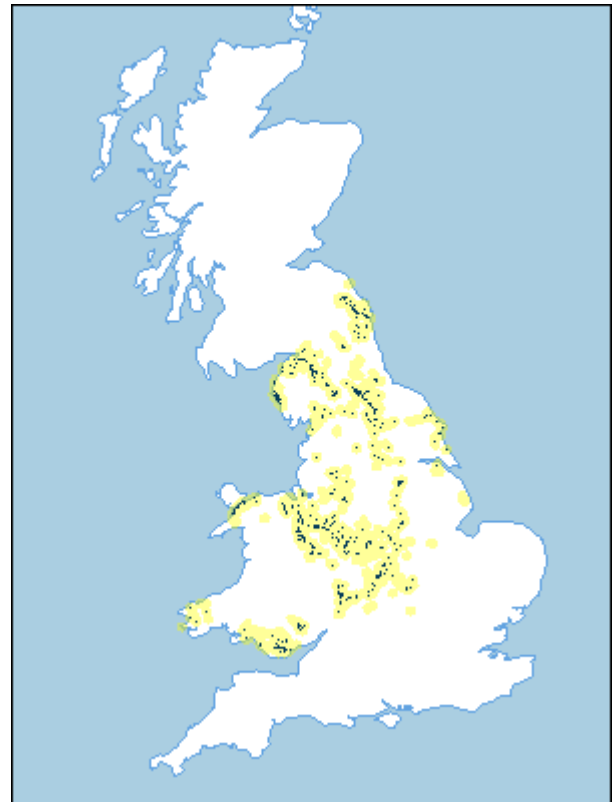


Figure 3: Association Distribution

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

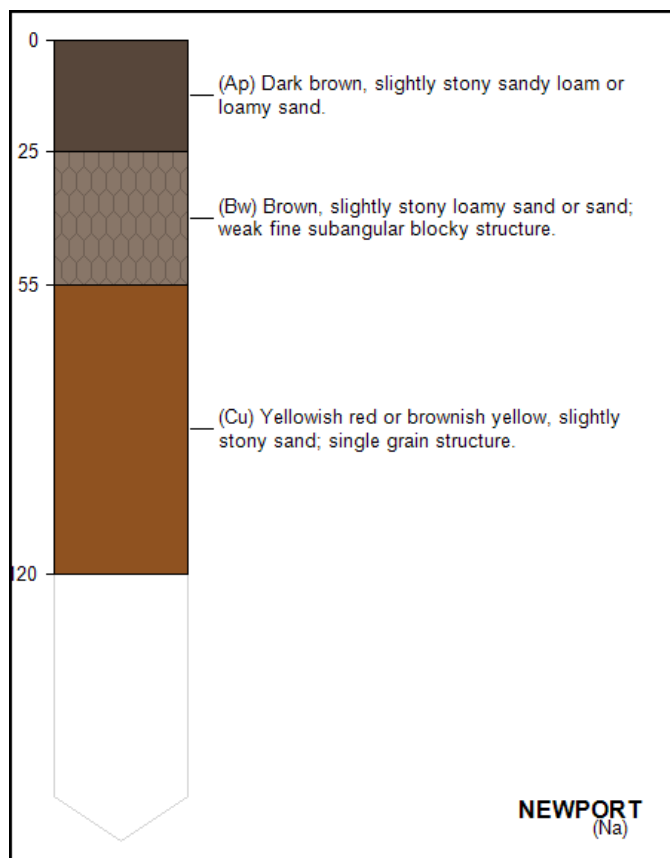
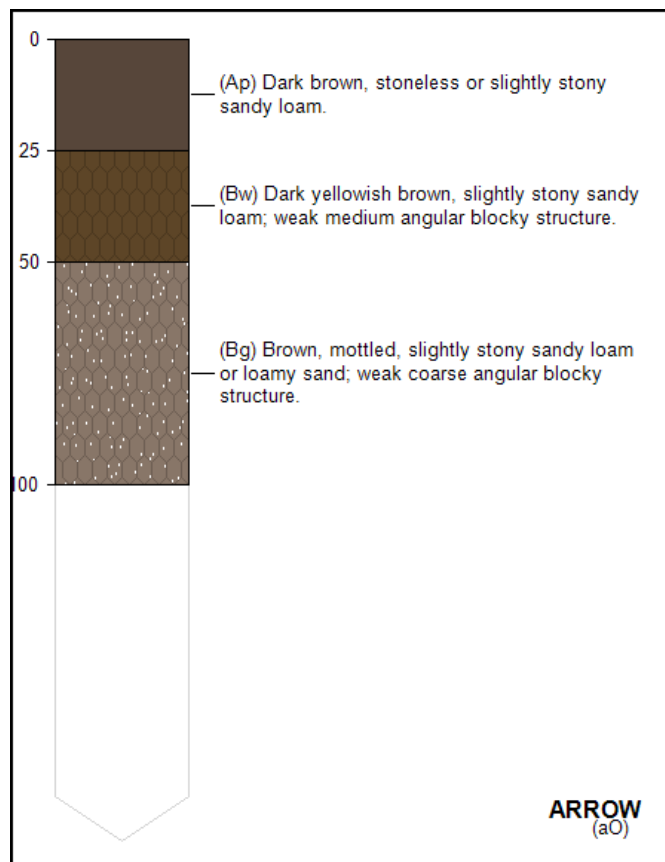
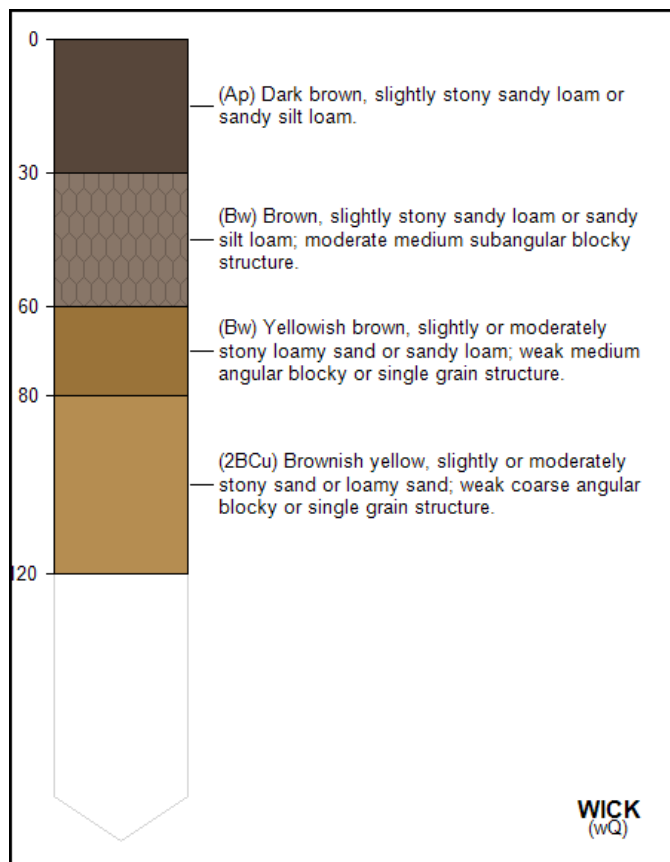
Table 2: The component soil series of the WICK 1 soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.

Soil Series	Description	Area %
WICK (wQ)	light loamy drift with siliceous stones	45%
ARROW (aO)	light loamy drift with siliceous stones	20%
NEWPORT (Na)	sandy drift with siliceous stones	15%
OTHER	other minor soils	20%

## WICK 1 (541r)

*Deep well drained coarse loamy and sandy soils locally over gravel.*

### d. WICK 1 Component Series Profiles



## BANBURY (544)

*Well drained brashy fine and coarse loamy ferruginous soils over ironstone.*

### a. General Description

Well drained brashy fine and coarse loamy ferruginous soils over ironstone. Some deep fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

The major landuse on this association is defined as Winter cereals with short term grassland, some potatoes; permanent grassland on valley slopes; some sugar beet In Eastern Region.

### b. Distribution (England and Wales)

The BANBURY association covers 712 km<sup>2</sup> of England and Wales which accounts for 0.47% of the landmass. The distribution of this association is shown in figure 4. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

### c. Comprising Soil Series

Multiple soil series comprise a soil association. The soil series of the BANBURY association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 3.

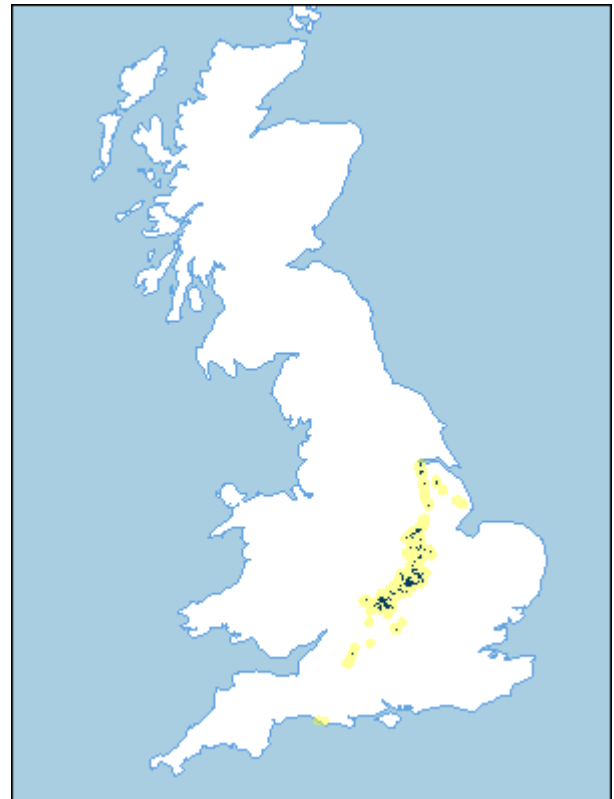


Figure 4: Association Distribution

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

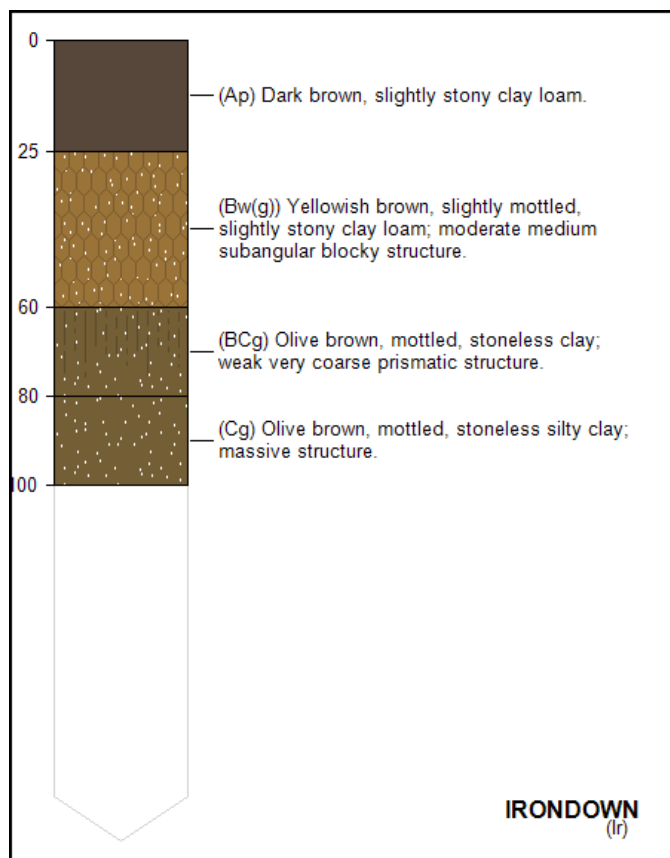
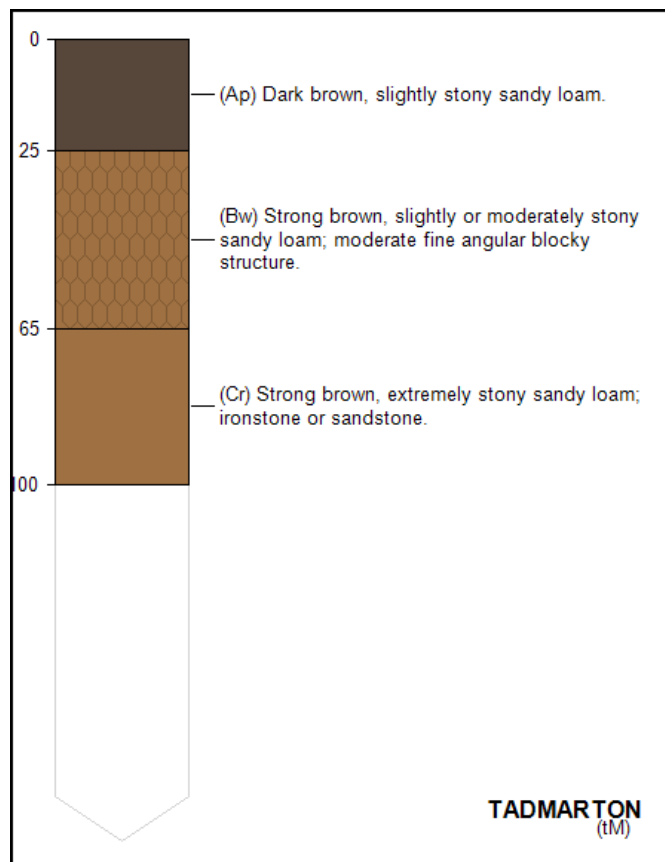
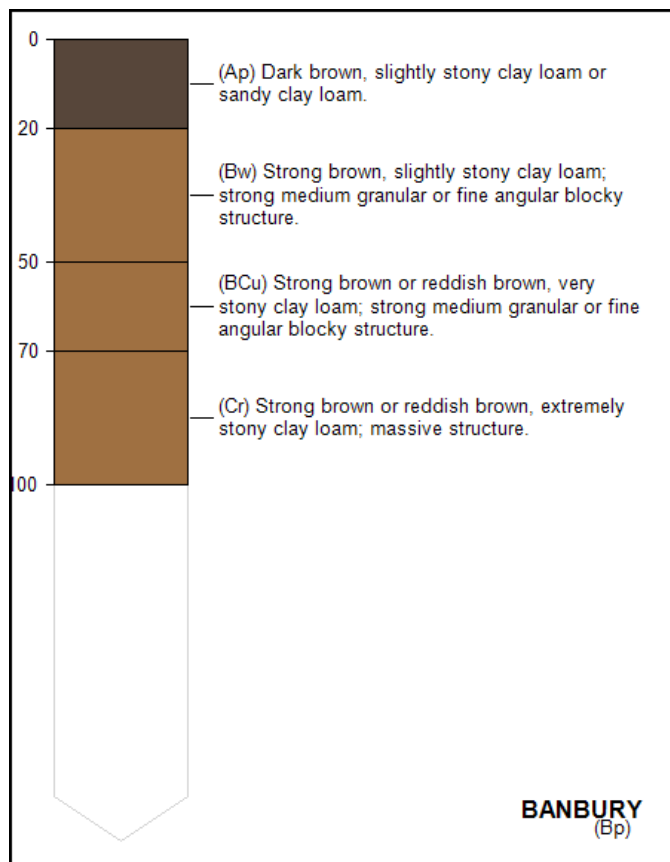
**Table 3: The component soil series of the BANBURY soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.**

Soil Series	Description	Area %
BANBURY (Bp)	ferruginous medium loamy material over lithoskeletal ironstone	50%
TADMARTON (tM)	ferruginous light loamy material over lithoskeletal ironstone	25%
IRONDOWN (Ir)	ferruginous medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	15%
OTHER	other minor soils	10%

## BANBURY (544)

*Well drained brashy fine and coarse loamy ferruginous soils over ironstone.*

### d. BANBURY Component Series Profiles



## XPASTURE (572h)

*Fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging.*

### a. General Description

Fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged clayey soils.

The major landuse on this association is defined as Winter cereals and short term grassland dairying in moist lowlands of the South West.

### b. Distribution (England and Wales)

The XPASTURE association covers 491 km<sup>2</sup> of England and Wales which accounts for 0.32% of the landmass. The distribution of this association is shown in figure 5. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

### c. Comprising Soil Series

Multiple soil series comprise a soil association. The soil series of the XPASTURE association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 4.

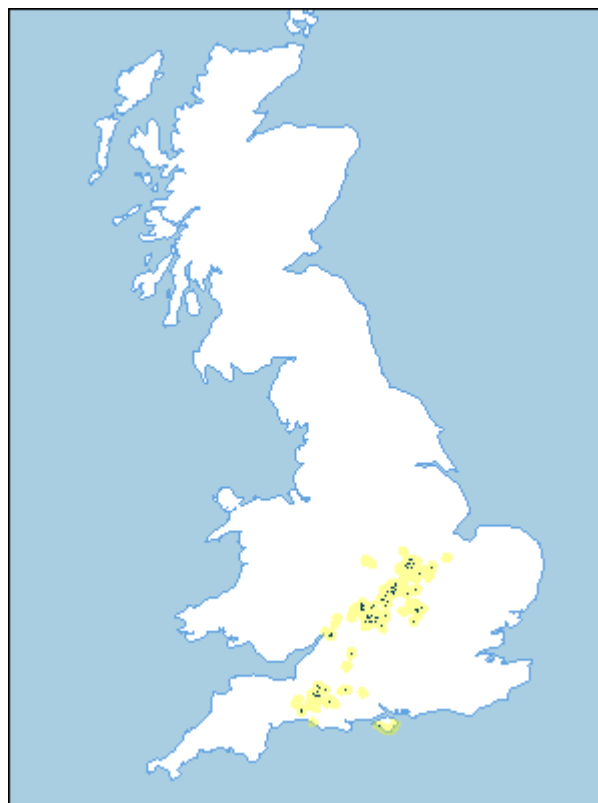


Figure 5: Association Distribution

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

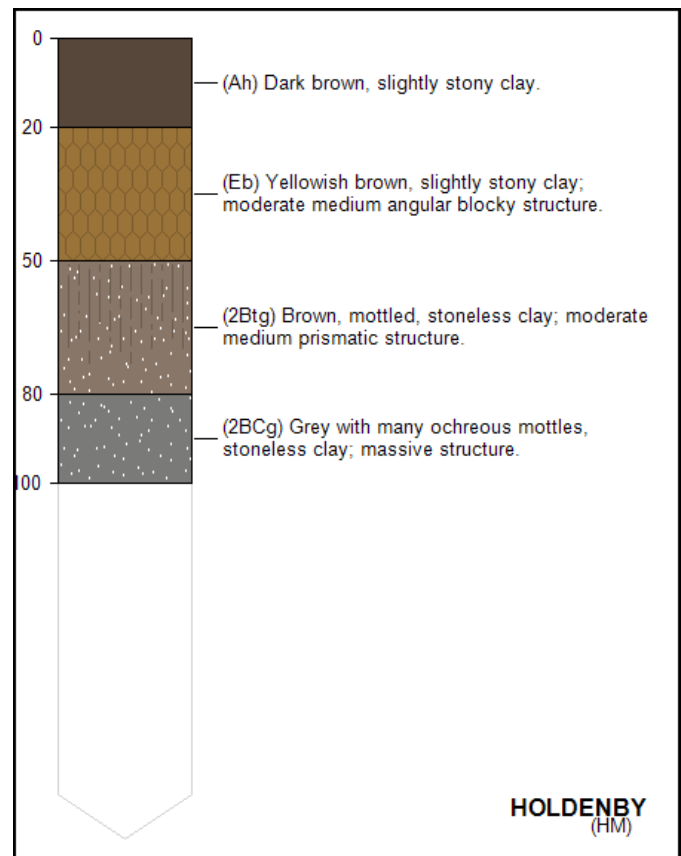
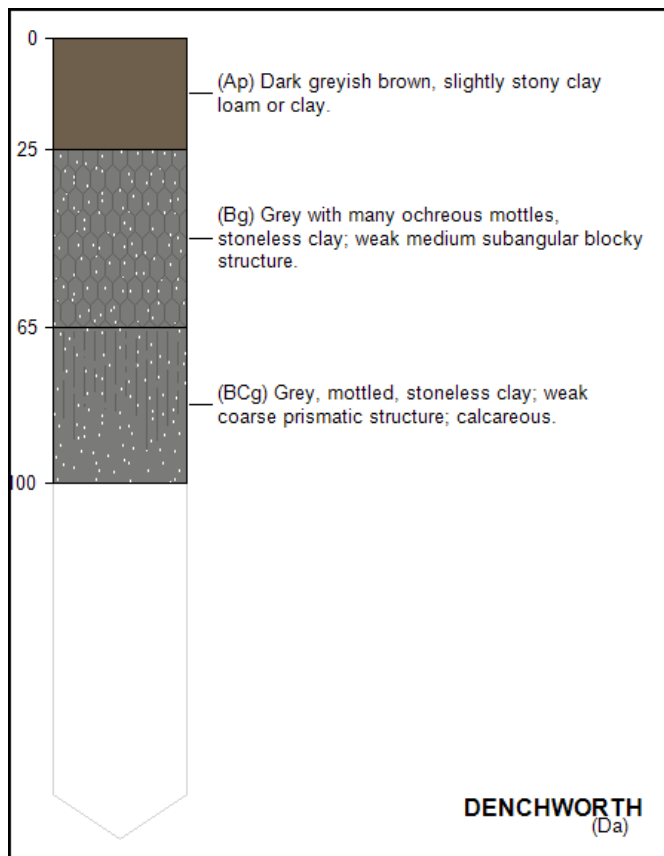
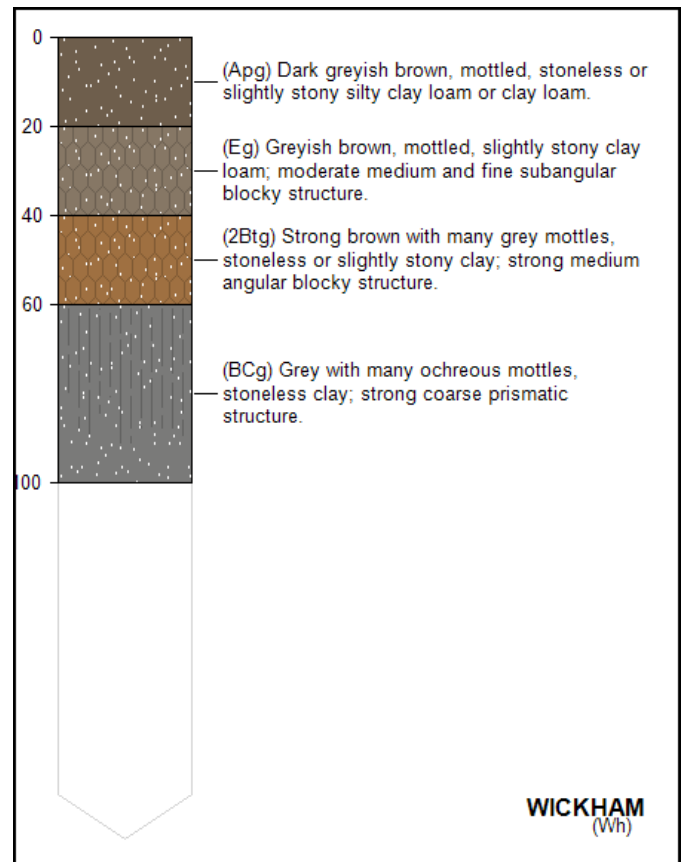
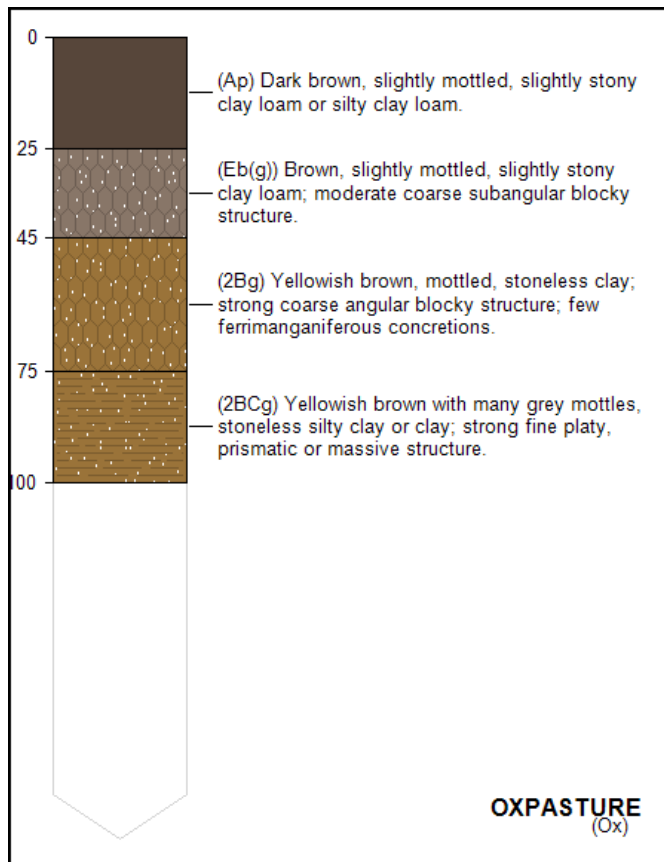
Table 4: The component soil series of the XPASTURE soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.

Soil Series	Description	Area %
XPASTURE (Ox)	medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	42%
WICKHAM (Wh)	medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	18%
DENCHWORTH (Da)	swelling clayey material passing to clay or soft mudstone	10%
HOLDENBY (HM)	clayey drift material passing to clay or soft mudstone	10%
OTHER	other minor soils	20%

## OXPASTURE (572h)

*Fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging.*

### d. OXPASTURE Component Series Profiles



## ASHLEY (572q)

*Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar but wetter soils.*

### a. General Description

Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar but wetter soils. Some calcareous and non-calcareous slowly permeable clayey soils.

The major landuse on this association is defined as Winter cereals and some short term grassland; some sugar beet in the Eastern Region.

### b. Distribution (England and Wales)

The ASHLEY association covers 471 km<sup>2</sup> of England and Wales which accounts for 0.31% of the landmass. The distribution of this association is shown in figure 6. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

### c. Comprising Soil Series

Multiple soil series comprise a soil association. The soil series of the ASHLEY association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 5.

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

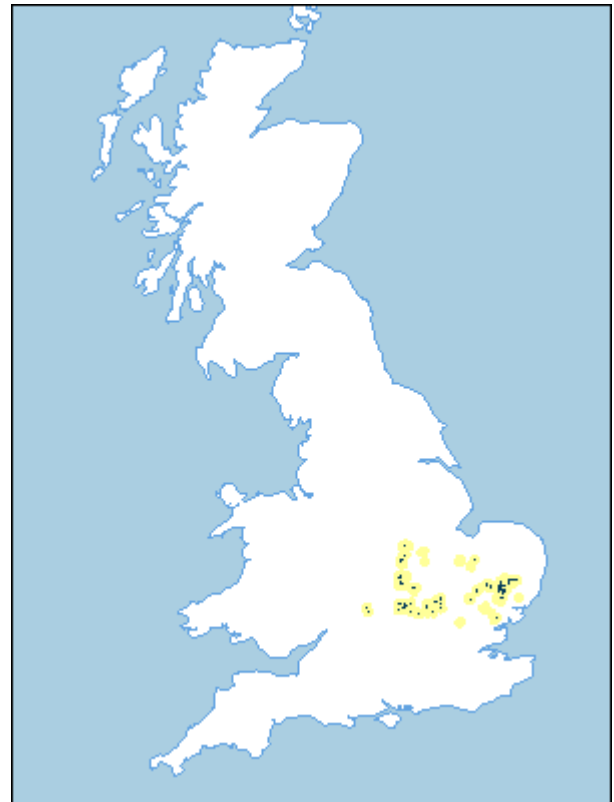


Figure 6: Association Distribution

Table 5: The component soil series of the ASHLEY soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.

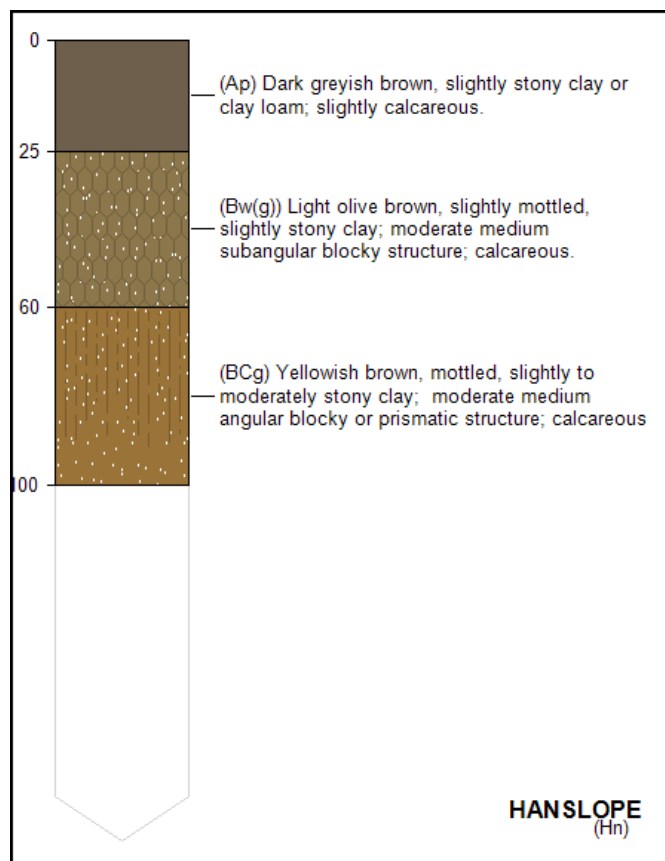
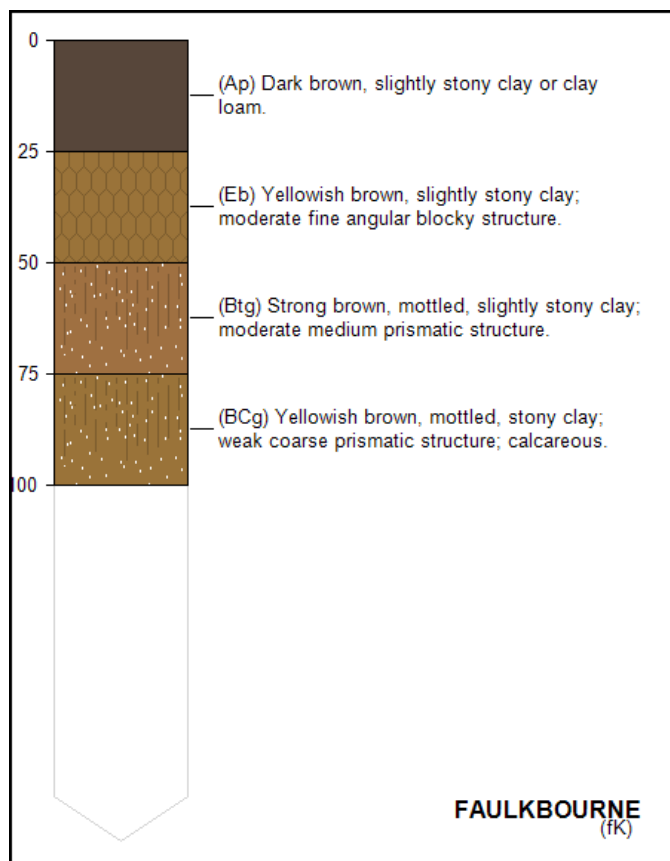
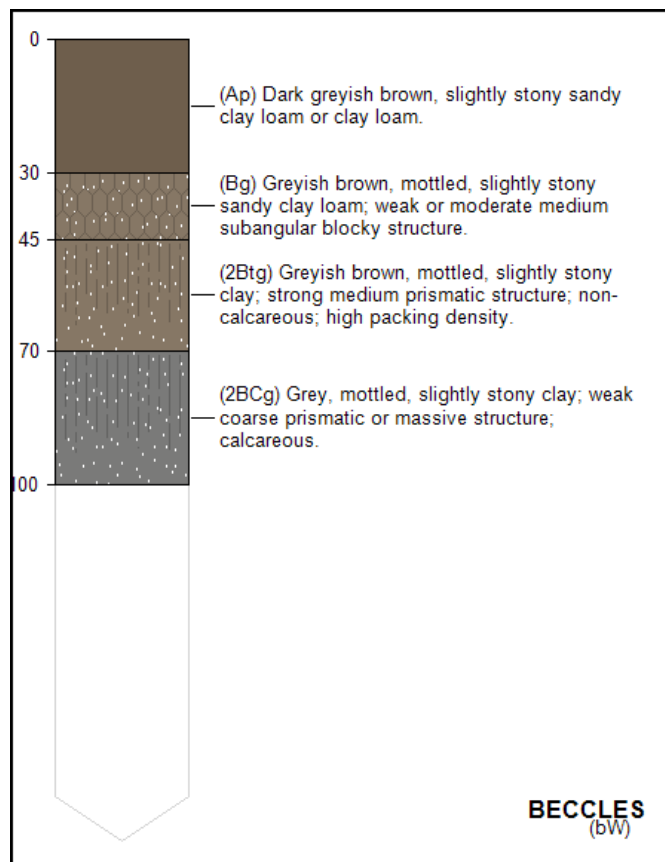
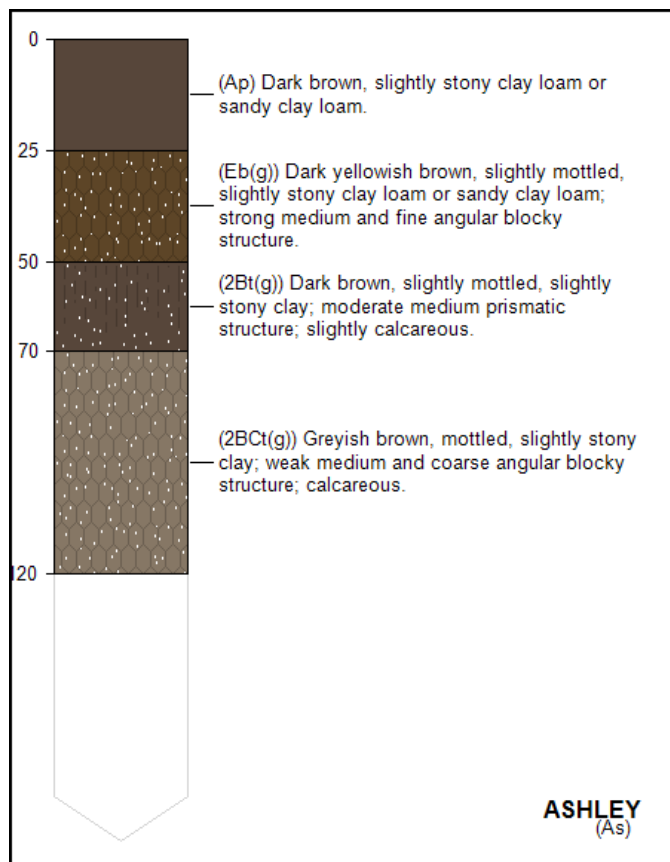
Soil Series	Description	Area %
ASHLEY (As)	medium loamy over clayey chalky drift	55%
BECCLES (bW)	medium loamy over clayey chalky drift	10%
FAULKBOURNE (fK)	clayey chalky drift	10%
HANSLOPE (Hn)	clayey chalky drift	10%
OTHER	other minor soils	15%



## ASHLEY (572q)

*Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar but wetter soils.*

### d. ASHLEY Component Series Profiles



**WATERSTOCK (573a)**

*Deep permeable mainly fine loamy soils variably affected by groundwater.*

**a. General Description**

Deep permeable mainly fine loamy soils variably affected by groundwater. Some deep well drained fine and coarse loamy soils.

The major landuse on this association is defined as Short term grassland and cereals; some field vegetables and fruit in drier districts; dairying in Dorset and Somerset.

**b. Distribution (England and Wales)**

The WATERSTOCK association covers 248 km<sup>2</sup> of England and Wales which accounts for 0.16% of the landmass. The distribution of this association is shown in figure 7. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

**c. Comprising Soil Series**

Multiple soil series comprise a soil association. The soil series of the WATERSTOCK association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 6.

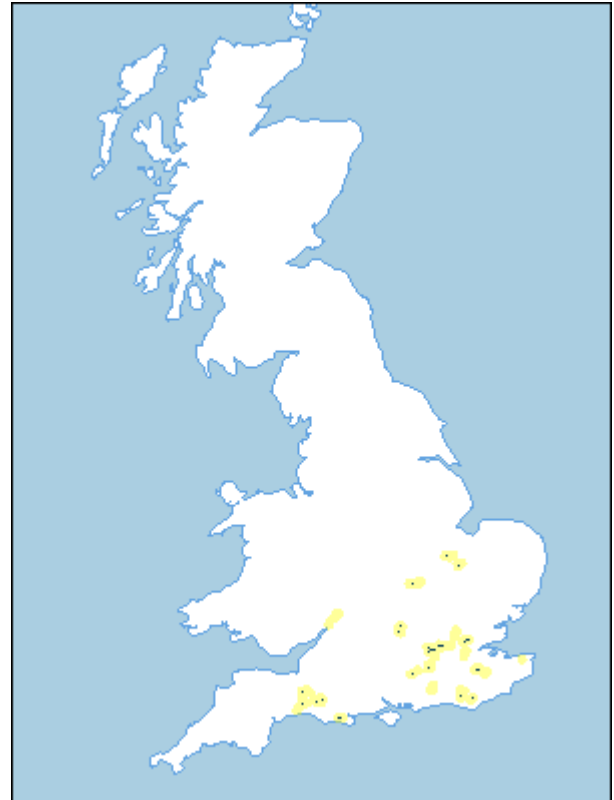


Figure 7: Association Distribution

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

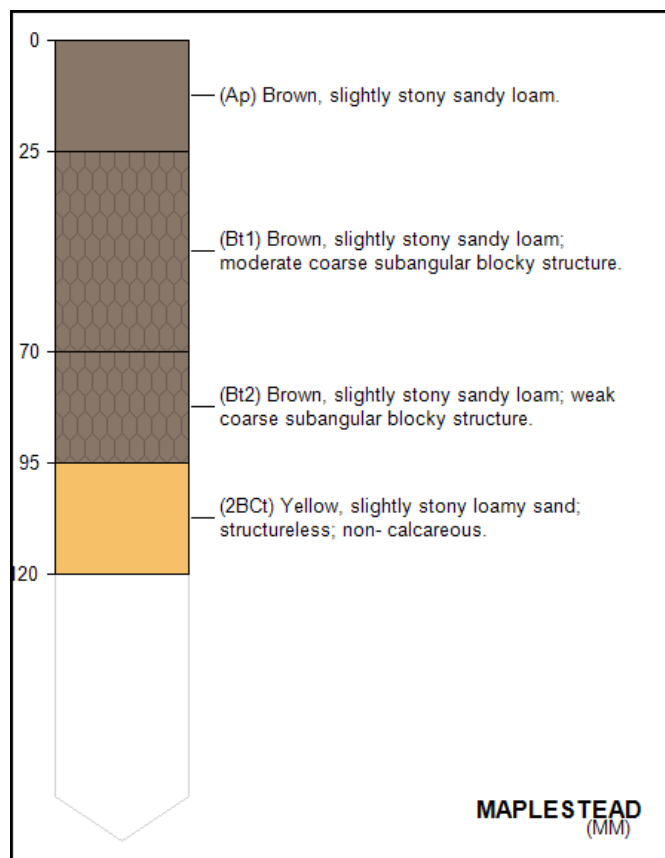
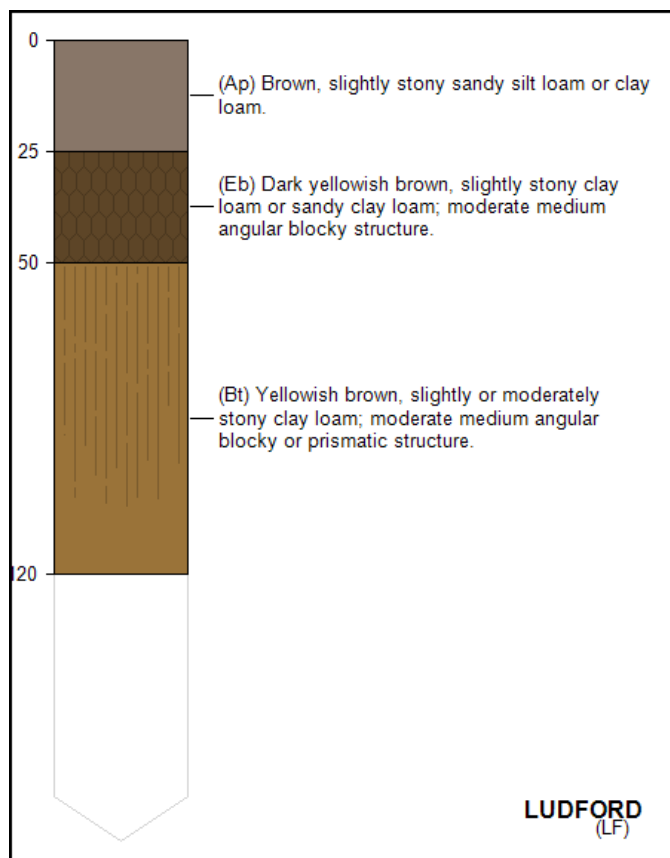
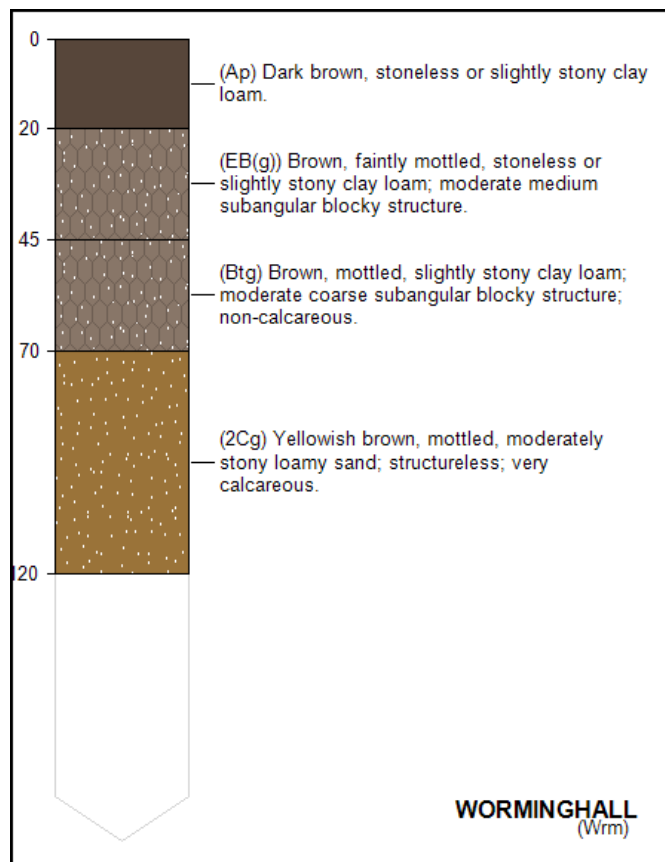
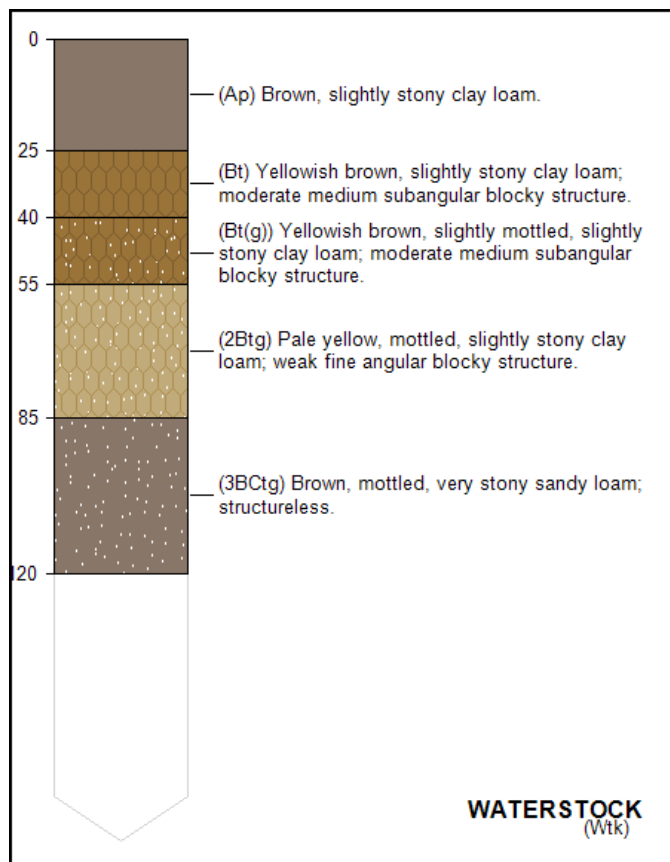
**Table 6: The component soil series of the WATERSTOCK soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.**

Soil Series	Description	Area %
WATERSTOCK (Wtk)	medium loamy drift with siliceous stones	30%
WORMINGHALL (Wrm)	medium loamy over sandy drift with siliceous stones	20%
LUDFORD (LF)	medium loamy drift with siliceous stones	15%
MAPLESTEAD (MM)	light loamy drift with siliceous stones	10%
SHABBINGTON (Shb)	medium loamy drift with siliceous stones	10%
OTHER	other minor soils	15%

## WATERSTOCK (573a)

*Deep permeable mainly fine loamy soils variably affected by groundwater.*

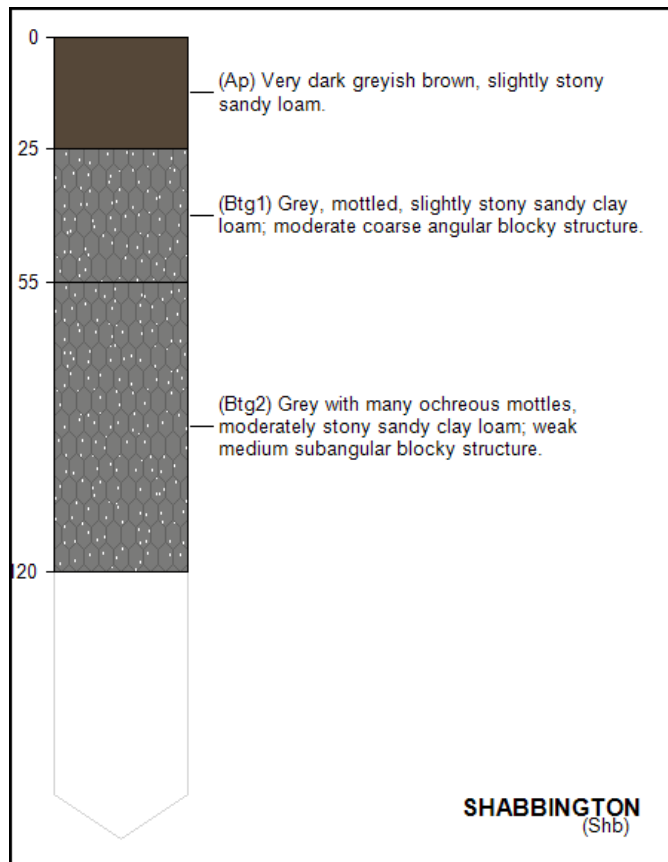
### d. WATERSTOCK Component Series Profiles



## WATERSTOCK (573a)

*Deep permeable mainly fine loamy soils variably affected by groundwater.*

### d. WATERSTOCK Component Series Profiles continued



**WICKHAM 2 (711f)**

*Slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils.*

**a. General Description**

Slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils. Small areas of slowly permeable calcareous soils on steeper slopes.

The major landuse on this association is defined as Winter cereals and grassland in the Midlands; cereals in the Eastern Region dairying in the South West.

**b. Distribution (England and Wales)**

The WICKHAM 2 association covers 1485 km<sup>2</sup> of England and Wales which accounts for 0.98% of the landmass. The distribution of this association is shown in figure 8. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

**c. Comprising Soil Series**

Multiple soil series comprise a soil association. The soil series of the WICKHAM 2 association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 7.

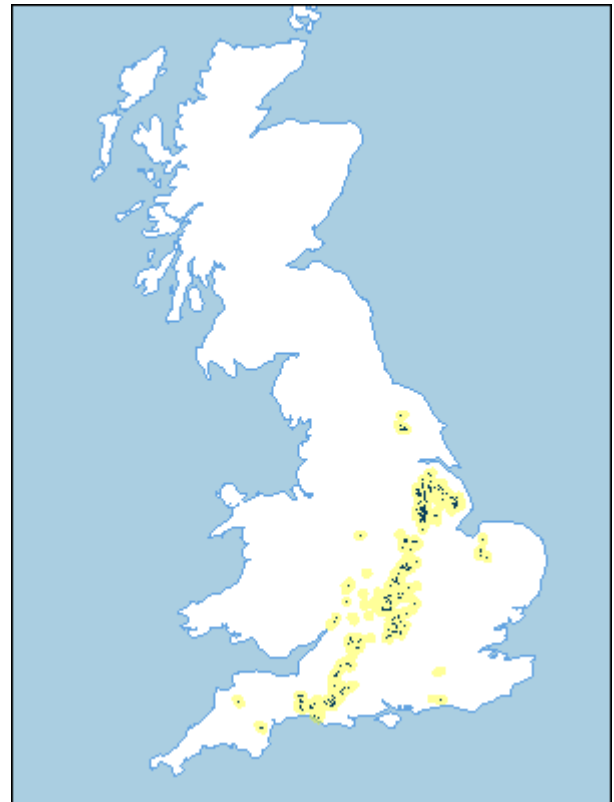


Figure 8: Association Distribution

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

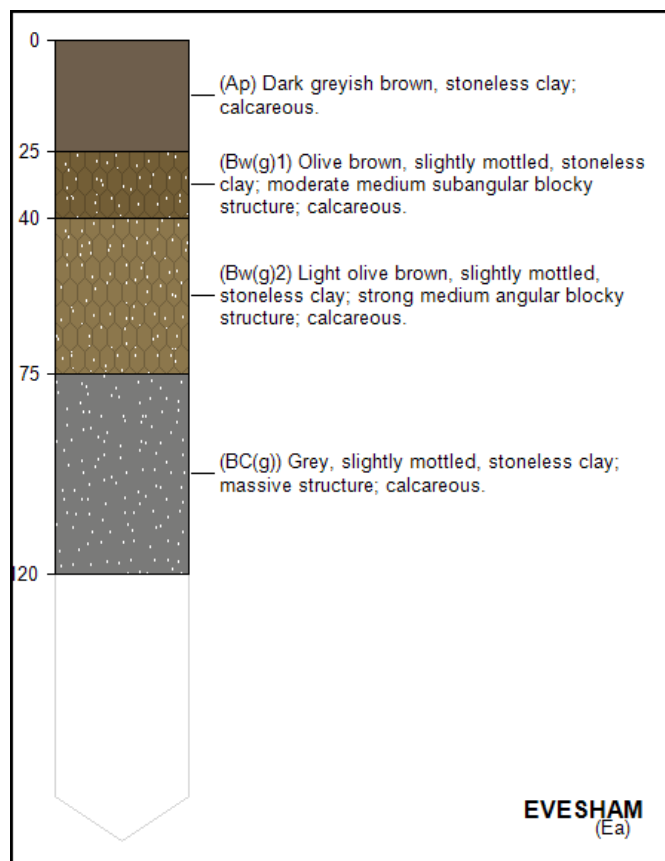
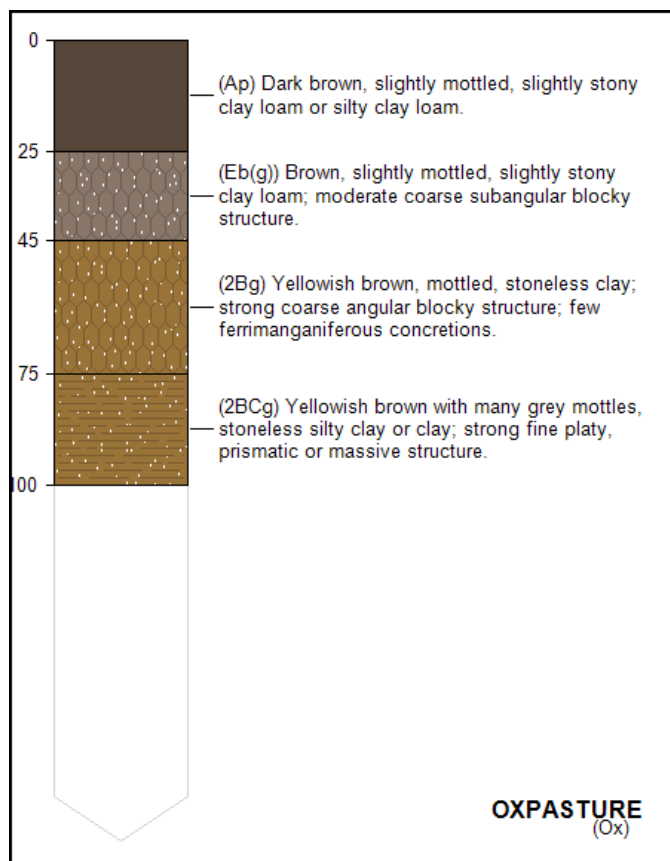
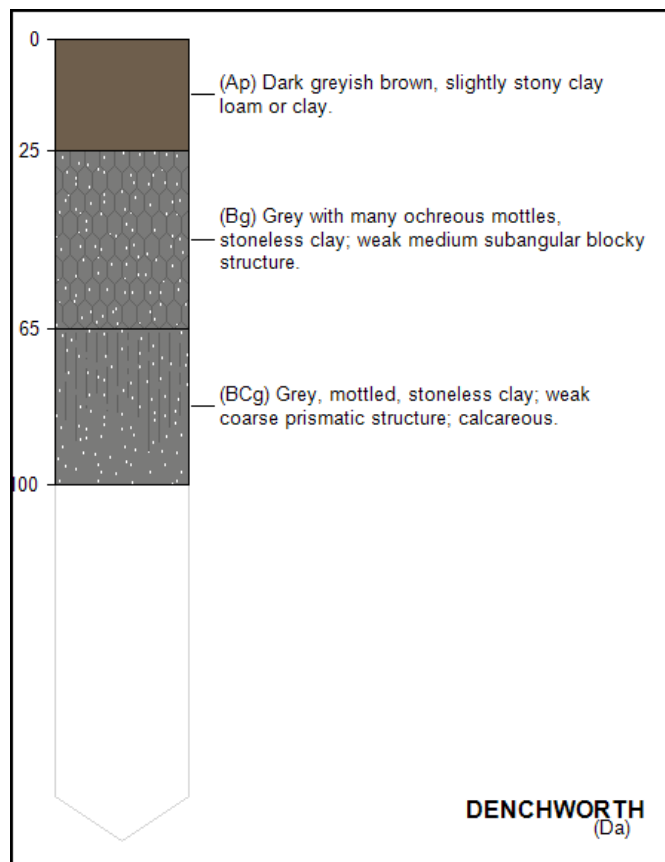
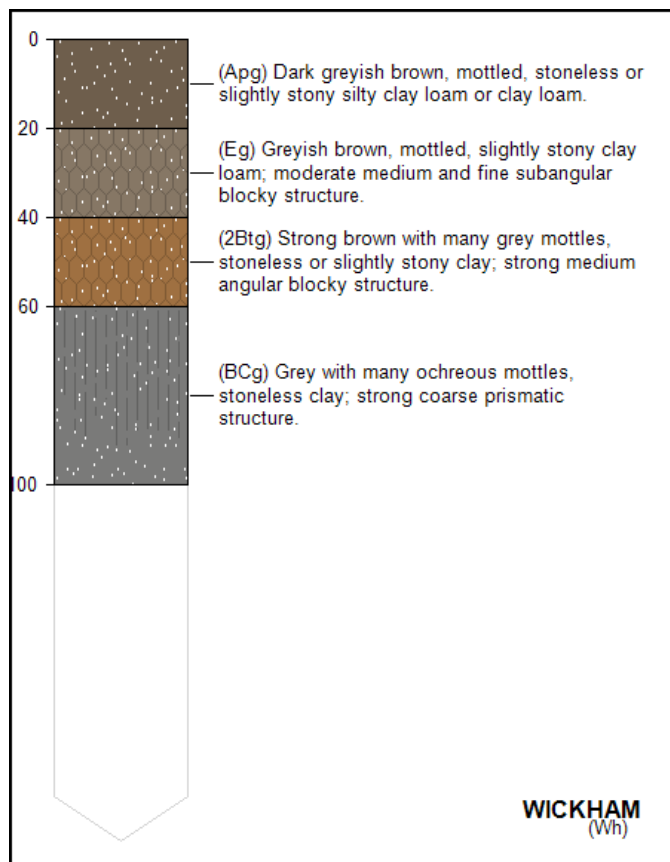
Table 7: The component soil series of the WICKHAM 2 soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.

Soil Series	Description	Area %
WICKHAM (Wh)	medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	50%
DENCHWORTH (Da)	swelling clayey material passing to clay or soft mudstone	15%
XPASTURE (Ox)	medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	15%
EVESHAM (Ea)	swelling clayey material passing to clay or soft mudstone	10%
OTHER	other minor soils	10%

## WICKHAM 2 (711f)

*Slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils.*

### d. WICKHAM 2 Component Series Profiles



## DENCHWORTH (712b)

*Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.*

### a. General Description

Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. Some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils.

The major landuse on this association is defined as Winter cereals and short term grassland in drier lowlands; dairying on permanent grassland in moist districts.

### b. Distribution (England and Wales)

The DENCHWORTH association covers 3469 km<sup>2</sup> of England and Wales which accounts for 2.29% of the landmass. The distribution of this association is shown in figure 9. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

### c. Comprising Soil Series

Multiple soil series comprise a soil association. The soil series of the DENCHWORTH association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 8.

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

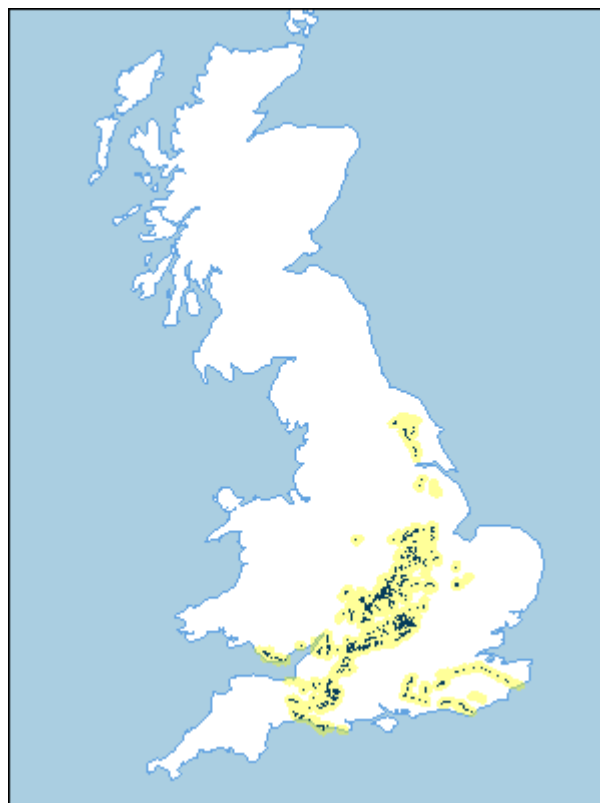


Figure 9: Association Distribution

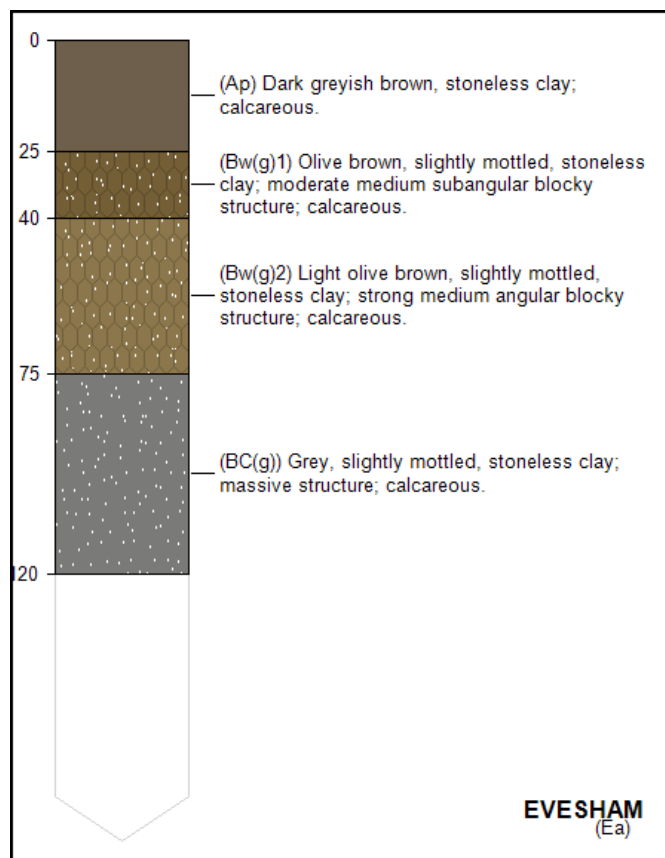
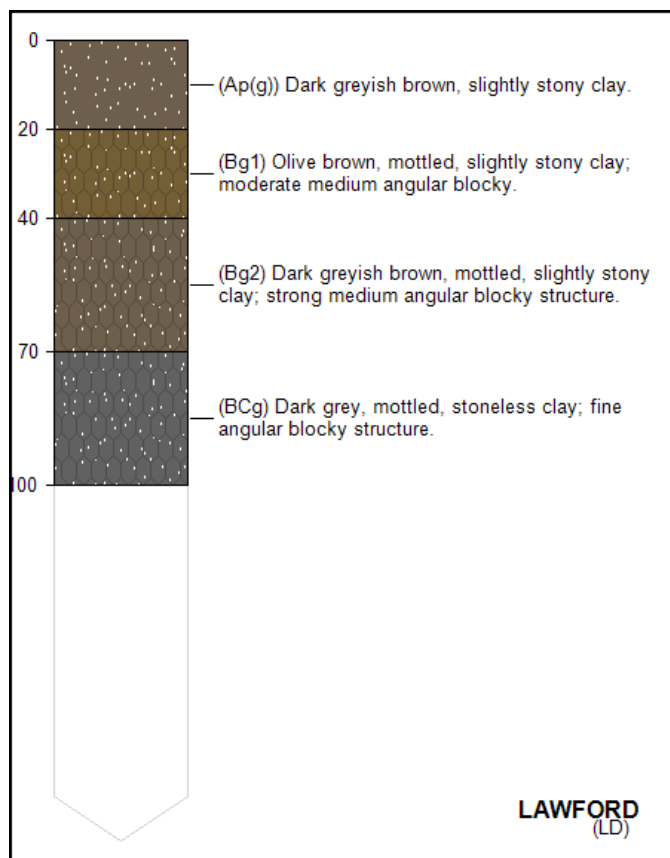
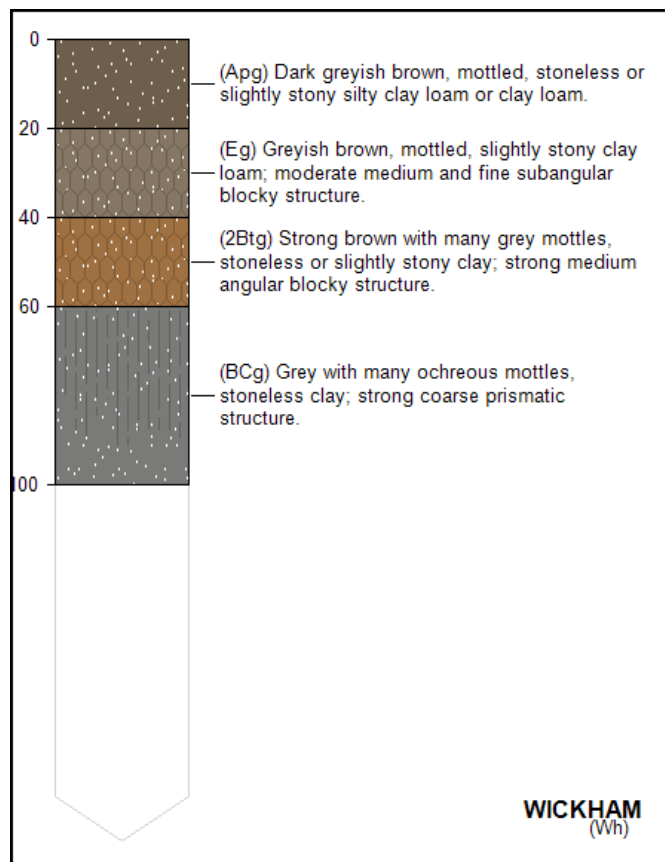
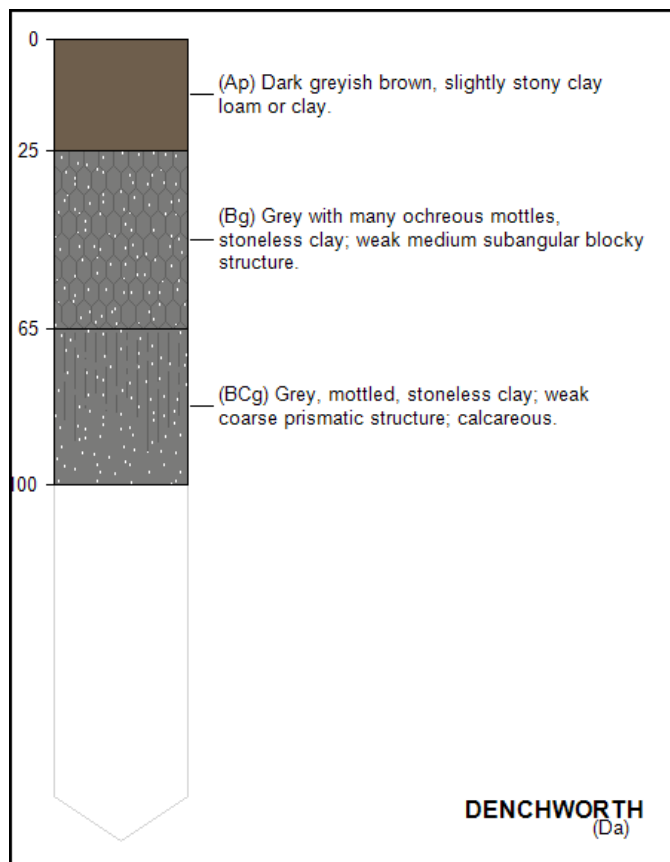
**Table 8: The component soil series of the DENCHWORTH soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.**

Soil Series	Description	Area %
DENCHWORTH (Da)	swelling clayey material passing to clay or soft mudstone	38%
WICKHAM (Wh)	medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	19%
LAWFORD (LD)	swelling clayey drift material passing to clay or soft mudstone	15%
EVESHAM (Ea)	swelling clayey material passing to clay or soft mudstone	14%
XPASTURE (Ox)	medium loamy or medium silty drift over clayey material passing to clay or soft mudstone	14%

## DENCHWORTH (712b)

*Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.*

### d. DENCHWORTH Component Series Profiles

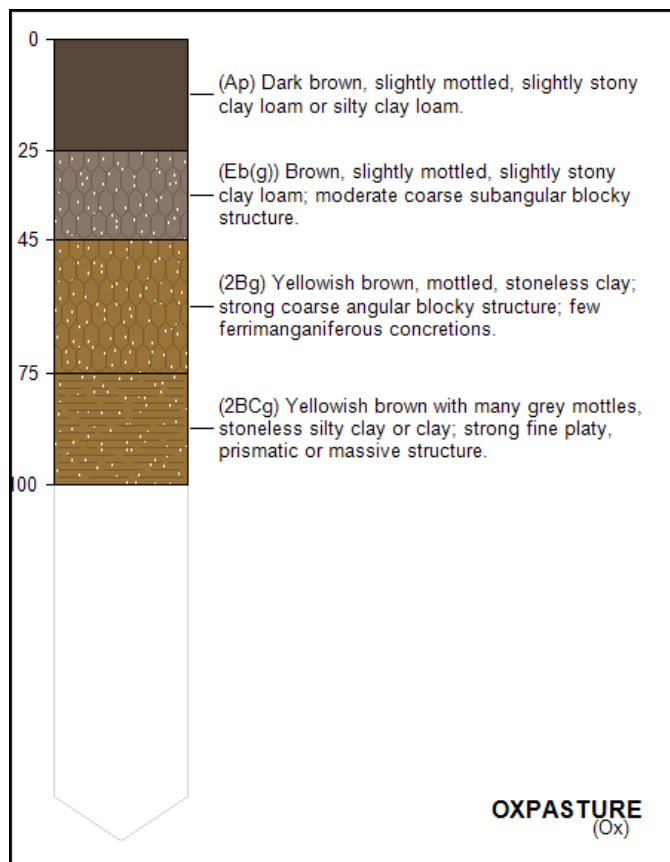




## DENCHWORTH (712b)

*Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.*

### d. DENCHWORTH Component Series Profiles continued



**FLADBURY 1 (813b)**

*Stoneless clayey soils, in places calcareous variably affected by groundwater.*

**a. General Description**

Stoneless clayey soils, in places calcareous variably affected by groundwater.

The major landuse on this association is defined as Stock rearing on permanent grassland; cereals where flood risk low.

**b. Distribution (England and Wales)**

The FLADBURY 1 association covers 821 km<sup>2</sup> of England and Wales which accounts for 0.54% of the landmass. The distribution of this association is shown in figure 10. Note that the yellow shading represents a buffer to highlight the location of very small areas of the association.

**c. Comprising Soil Series**

Multiple soil series comprise a soil association. The soil series of the FLADBURY 1 association are outlined in Table 1 below. In some cases other minor soil series are present at a particular site, and these have been grouped together under the heading 'OTHER'. We have endeavoured to present the likelihood of a minor, unnamed soil series occurring in your site in Table 9.

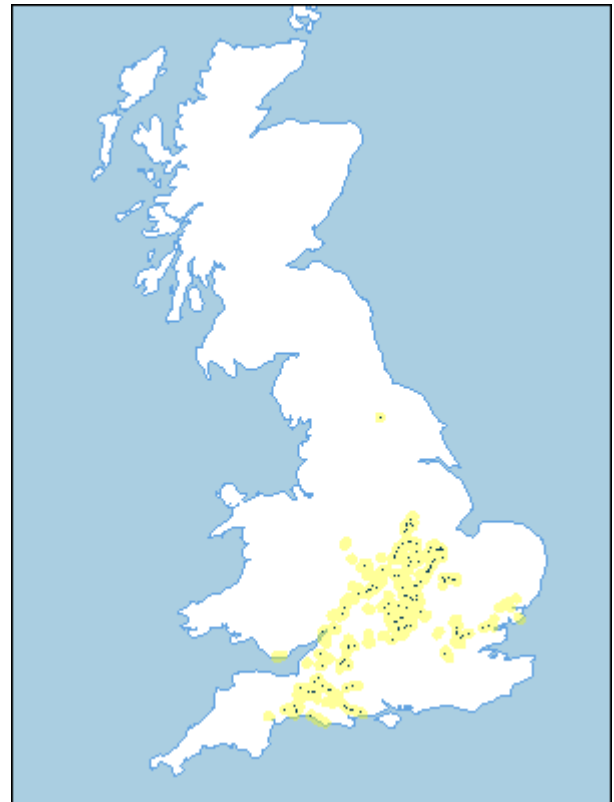


Figure 10: Association Distribution

Schematic diagrams of the vertical soil profile of the major constituent soil series are provided in Section D to allow easier identification of the particular soil series at your site.

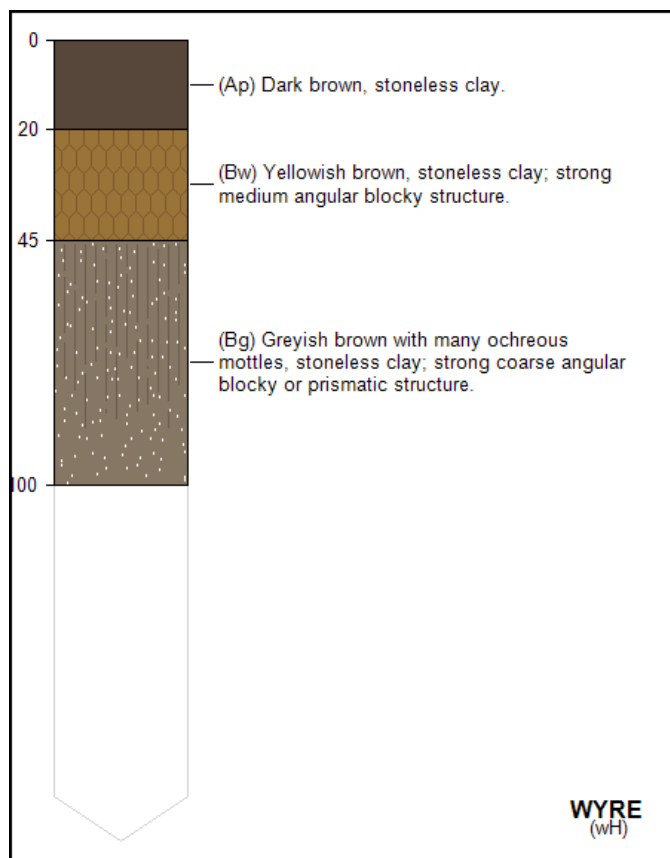
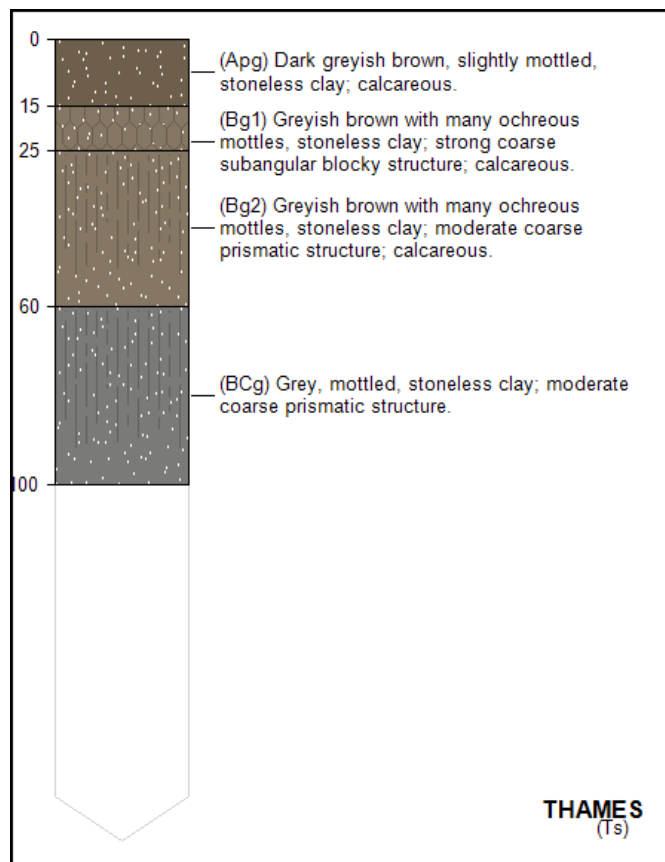
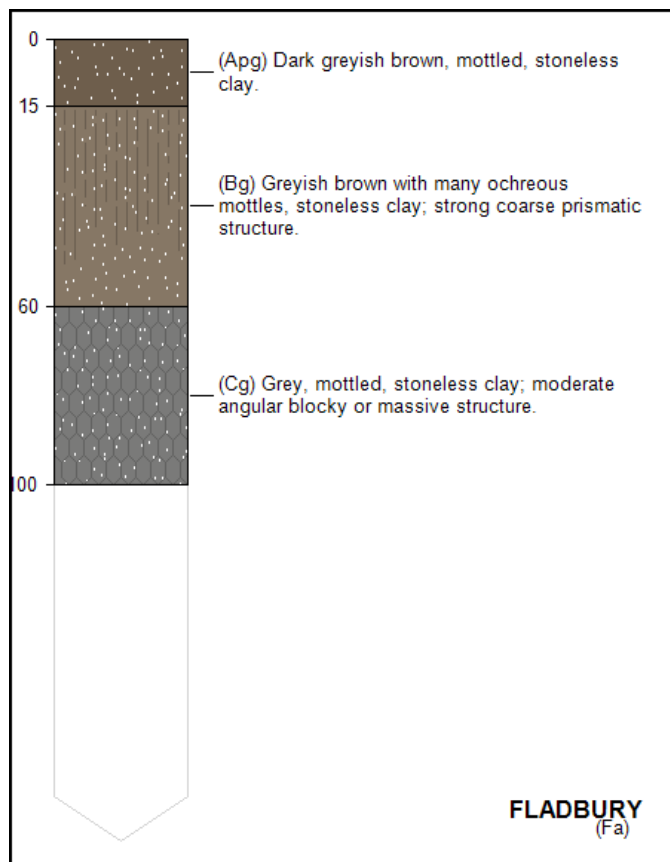
Table 9: The component soil series of the FLADBURY 1 soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.

Soil Series	Description	Area %
FLADBURY (Fa)	clayey river alluvium	70%
THAMES (Ts)	clayey river alluvium	15%
WYRE (wH)	clayey river alluvium	15%

## FLADBURY 1 (813b)

*Stoneless clayey soils, in places calcareous variably affected by groundwater.*

### d. FLADBURY 1 Component Series Profiles



## REFERENCES

EVERY, B.W. (1973). Soil classification in the Soil Survey of England and Wales. *Journal of Soil Science*, 24, 324-338.

EVERY, B.W., (1980). Soil classification for England and Wales. Soil Survey Technical Monograph No.14, Harpenden, UK.

BOORMAN, D.B, HOLLIS, J.M. and LILLEY, A. (1995). Hydrology of Soil Types: a hydrologically-based classification of the soils of the UK. Institute of Hydrology Report No.126, Wallingford, UK.

CLAYDEN, B and HOLLIS, J.M. (1984). Criteria for Differentiating Soil Series. Soil Survey Technical Monograph No.17, pp159. Harpenden, UK.

HALLETT, S.H., KEAY, C.A., JARVIS, M.G. and JONES, R.J.A. (1994). INSURE: Subsidence risk assessment from soil and climate data. Proceedings of the Association for Geographic Information (AGI). National Conference Markets for Geographic Information. Birmingham. 16.2.1 - 16.2.7.

HOLLIS, J.M. (1991). Mapping the vulnerability of aquifers and surface waters to pesticide contamination at the national and regional scale. In: *Pesticides in Soils and Water*, BCPC Monograph No.47, 165-174.

HOLLIS, J.M., KEAY, C.A., HALLETT, S. H., GIBBONS, J.W. and COURT, A.C. (1995). Using CatchIS to assess the risk to water resources from diffusely applied pesticides. In: *British Crop Protection Council monograph No. 62: Pesticide movement to water*, 345-350

JARVIS, M.G and HEDGES, M.R. (1994). Use of soil maps to predict the incidence of corrosion and the need for iron mains renewal. *Journal of the Institution of Water and Environmental Management* 8, (1) 68-75.

PALMER, R.C., HOLMAN, I.P., ROBINS, N.S. and LEWIS, M.A. (1995). Guide to groundwater vulnerability mapping in England and Wales. National Rivers Authority R and D Note 578/1/ST.

