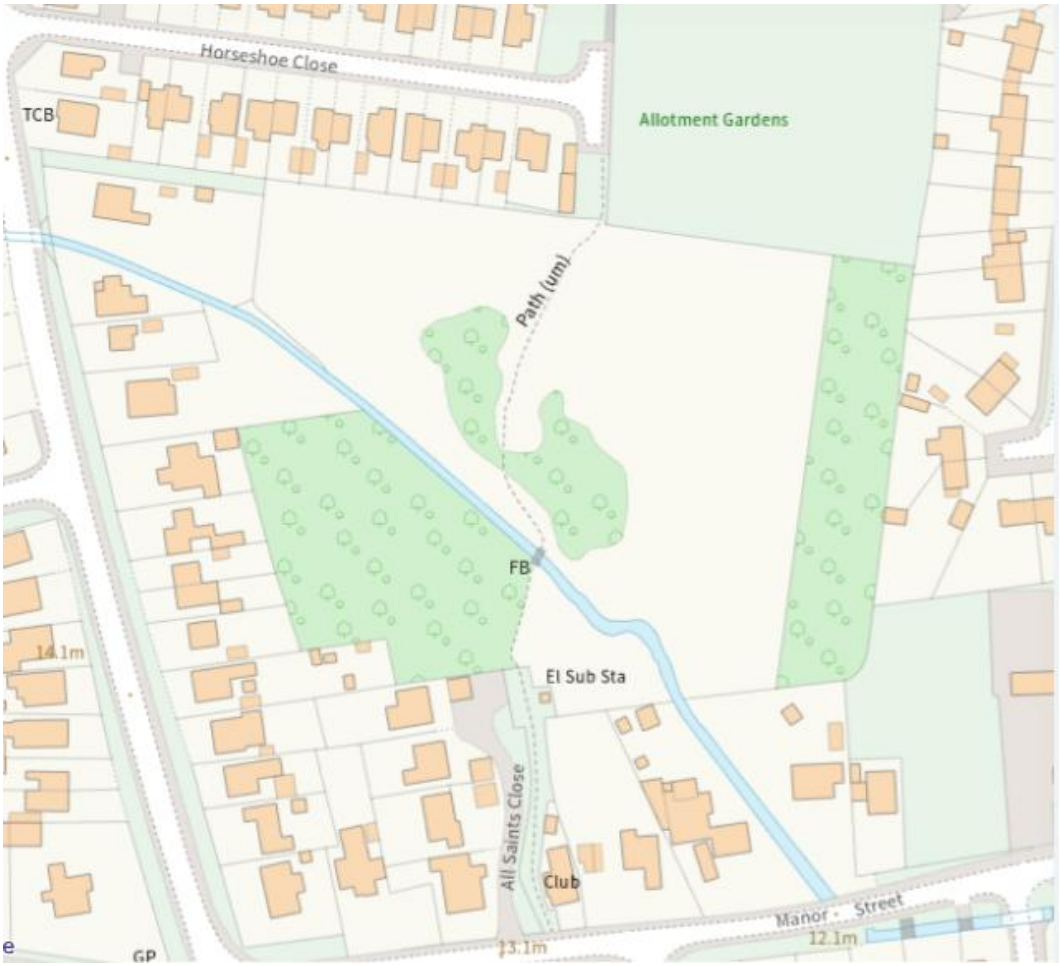
Horseshoe Hollow

Management Plan 2025

Ruskington Parish Council

Andrew Doughty

Dr Sheena Cotter



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Introduction

Horseshoe Hollow is currently classed as amenity green space, approximately 1.94 ha, located quite centrally within the village of Ruskington (Grid Reference TF 07783 51261), it is dissected by The Beck which enters on the north-west boundary and flows out of the southern boundary. To the west of The Beck is the woodland area. East of The Beck is the meadow area. Within the meadow area there are two large stands of hawthorn which divides the area into sections. There is a main footpath which runs from the entrance at Horseshoe Close to the entrance at Manor Street, a footbridge crosses The Beck. There are several footpaths giving a choice of routes for people to walk around the area.

There has been a drive to improve the biodiversity of Horseshoe Hollow for several years, and Ruskington Parish Council (RPC) received a Highly Commended from Lincolnshire Environmental Awards in 2021. The original management plan was developed by Dr Sheena Cotter with an aim to improve the grassland species richness, and over the last few years we have been working towards that objective.

Some changes had to be made to the original plan due to constraints in resources, machinery, practicalities of land management and costs, but we now have a good basis on which to build upon for the coming years, and improvements have definitely been made. This document is the new version of the management plan.

Fig. 1. Map showing overview of Horseshoe Hollow with boundary (Ordnance Survey, 2025)

Objectives

Horseshoe Hollow boasts a range of habitats including mature trees, open woodland, scrub, hedgerow, calcareous grassland, seasonal flooded grassland/wetland, and The Beck – a small but healthy limestone stream channel. Our objectives are to build upon this and improve the heterogeneity of this valuable area. We intend to improve Horseshoe hollow in both ecological and practical ways.

Ecological

Horseshoe Hollow has the potential to have high quality calcareous grassland, a rare and valuable habitat for plants and insects. In Geology and Soils, we show the opportunity areas for calcareous grassland biodiversity opportunities, the result of a 2013 study undertaken by Chris Blandford Associates on behalf of Central Lincolnshire Green Infrastructure Steering Group, Ruskington falls just outside of the opportunity area, but soil type is very similar to the opportunity area. The soil within which Ruskington is located has a composition of Lime-rich loamy. This is viable soil to meet our objectives for the open meadow.

Alongside the open meadow habitat, Horseshoe Hollow is already an area which boasts a diverse range of habitats. Which we will look at in more detail in the coming sections.

Practically

Ruskington Parish Council has approved in principle to renovate the three entrances, which at present are uninviting concrete posts and chain link fencing, we are going to replace these with post and rail fencing and field gates.

In 2024, we replaced the footbridge over the Beck, as the original one had reached the end of its working life. Further to this we would like to install a more level footpath surface on the main pathways around Horseshoe Hollow.

Ultimately Horseshoe Hollow has the potential to be a place that attracts a broad variety of life, a place where adults and children can learn about nature and see it in action through every season of the year. We want it to be a place of relaxation, education and peace within the centre of our village.

Access

Horseshoe Hollow can be accessed by three entrances, Horseshoe Close to the North, Lincoln Road to the West and Manor Street to the South. Marked as blue dots on Fig.1.

The Horseshoe Close entrance is part of a public footpath which runs across the open meadow, across the Beck and to Manor Street. The Horseshoe Close entrance at present is a wide opening, a grass path with a gradient down to the footpath within Horseshoe Hollow.

The Lincoln Road entrance is a path of compact mud/gravel with a hawthorn scrub border, the entrance itself is a chain link fence arranged as a cycle barrier.

The Manor Street entrance has a gradient from the pavement onto mud/gravel pathway which passes through trees to the chain link fencing entrance. Nearby to this entrance there is a small substation, vehicular access from Manor Street to this substation is required by Western Power.

There are no pedestrian gates on any of the entrances.

The paths within Horseshoe Hollow are of compacted mud and/or gravel. There is a wooden footbridge over the Beck. At present, Horseshoe Hollow is not wheelchair accessible, but we would like to find a way so that at least some of it can be, if not all.

The paths are shown in blue in Fig.2.

Fig.2. Pathways around Horseshoe Hollow. (Google Earth, 2025)

Roles and Responsibilities

Horseshoe Hollow is owned entirely by Ruskington Parish Council (RPC). RPC is responsible for all maintenance within the site and works in partnership with the Environment Agency with regards to the Beck and its margins, which is classed as a main river.

Horseshoe Hollow, as a whole is, under the stewardship of the land manager, Andrew Doughty, Caretaker for Environment and Grounds, and an employee of RPC, and an undergraduate of Environmental Science, and author of this plan. The original management plan (2021) was authored by Dr Sheena Cotter of The University of Lincoln, and also a Parish Councillor for RPC, Dr Cotter oversees the project.

RPC uses contractors for tasks for which the council is not equipped for, these tasks are overseen by Andrew Doughty. These tasks are discussed in a further section.

Environmental Organisations

As previously mentioned, RPC works alongside the Environment Agency with any works to the Beck and its banks.

RPC has also sought advice from Lincolnshire Wildlife Trust in the formation of the original management plan.

In the future we hope to encourage volunteer groups to be involved in the management of Horseshoe Hollow.

General Description, Location and Map Coverage

Horseshoe Hollow is located to the west of the centre of the village of Ruskington, Lincolnshire. It is bordered on the north by Horseshoe Close and the allotments, on the west by Lincoln Road (B1188), and on the South by Manor Street. The east is bordered by a small area of privately owned woodland.

The grid reference for the centre of Horseshoe Hollow is TF 07783 5126, and the site can be found on OS map number 121, Landranger 1:50000, and OS map number 272, Explorer 1:25000.

The site is divided into two main habitat sections as shown on Fig.3. the Open Woodland area and The Open Meadow, these two areas are naturally delineated by the Beck, shown in blue on Fig.3. The smaller habitat areas are found around the margins of the Open Meadow, and also along the banks of the Beck.

There are areas of rises and dips within the site, and there are a few large stands of hawthorn which separate the Open meadow from the Flood Meadow area. Along the boundary with the allotments is approximately 100 m of old hawthorn hedgerow, our oldest hedgerow on the site. The other boundaries are made up of residential fencing and chain link fencing, and the eastern boundary has a rough tree line with a patchy shrub ‘hedge’ which separates the site from the private woodland.

There are three singular benches, and one picnic bench.

There are two litter bins.

There are no dedicated parking spaces, although there are a small number of spaces often available at the end of the cul-de-sac of Horseshoe Close.

Fig.3. Main habitat areas within Horseshoe Hollow. (Google Earth, 2025)

Aspect, Topography and Altitude

The site is mostly level with slight undulations throughout which are more pronounced in the north-western corner, differing not much more than 1 metre in elevation. There is a gentle slope towards the east within the Open meadow.

The altitude is 14 m at the lowest point.

Geology and Soils

The bedrock geology over the entire site is classed by the British Geological Survey as Kellaways sand member, sandstone and siltstone interbedded.

The Open Meadow area has superficial deposits of Sleaford sand and gravel, the Open Woodland and the course of the Beck has superficial deposits of alluvium – clay silt, sand and gravel. Fig.4.

Fig.4. shows the geology of Horseshoe Hollow, with the pale yellow indicating the superficial deposits of alluvium – clay silt, sand and gravel, and the pink area denoting superficial deposits of Sleaford sand and gravel. (British Geological Survey, 2025)

The basis of the original management was founded on Ruskington being close to the calcareous biodiversity opportunity area which was presented in a 2013 study by Chris Blandford Associates, on behalf of the Central Lincolnshire Green Infrastructure Steering Group. The boundary of the opportunity area can be seen in Fig.5.

Using soil reports from LandIS, it has been established that the soil within Horseshoe Hollow does have potential for calcareous grassland. Fig.6. shows the limestone area which corresponds to the opportunity area in Fig.5. The top image showing the soil descriptor in the limestone zone, and the bottom image showing the soil descriptor in the Ruskington zone. Both zones are classed as Lime-rich.

The LandIS report defines the soil type as 512c: "*The Ruskington association consists of Ruskington and Ickford series, gleyic brown calcareous earths, and Newsleaford series, gleyic brown calcareous sands*." (LandIS, Cranfield University, 2025)

The full soil report is included in appendix 2

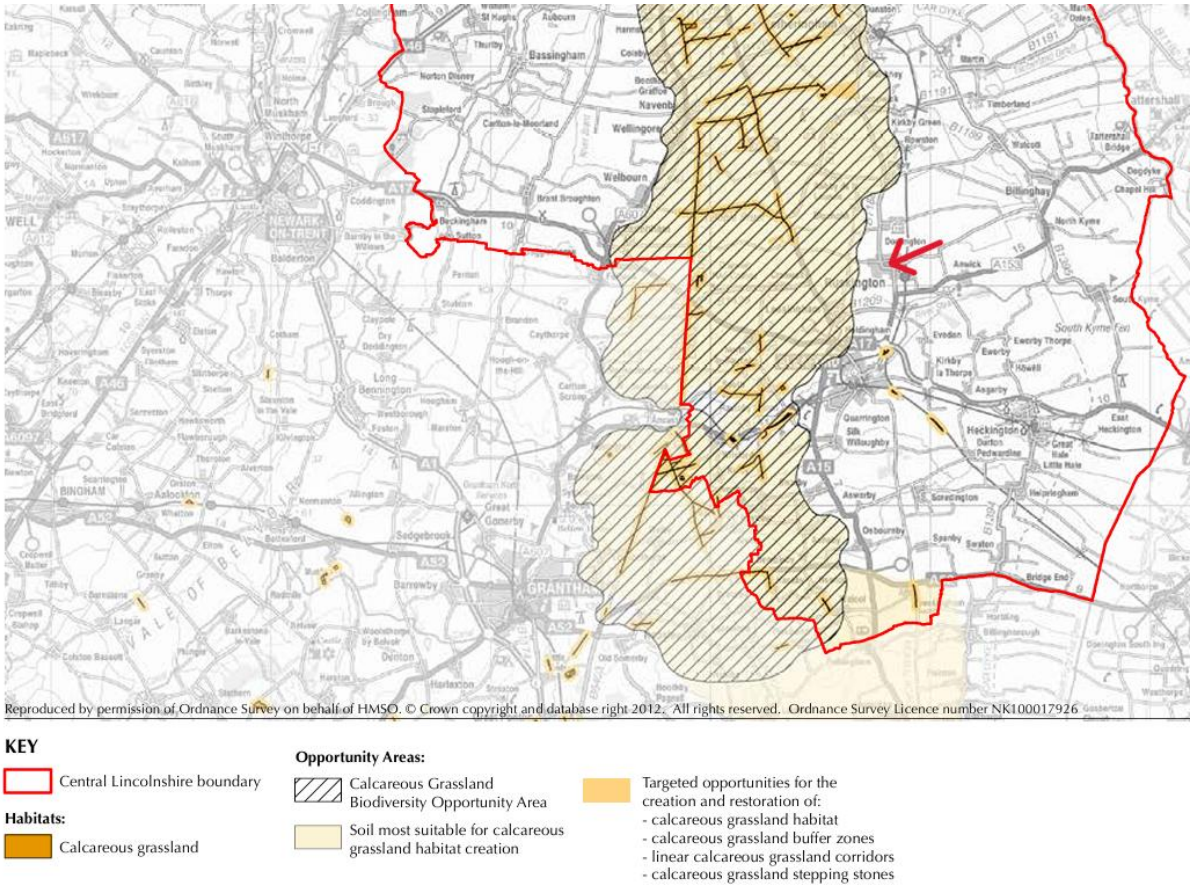


Fig.5. shows the calcareous biodiversity opportunity area in relation to Ruskington's position (Chris Blandford Associates, 2013)

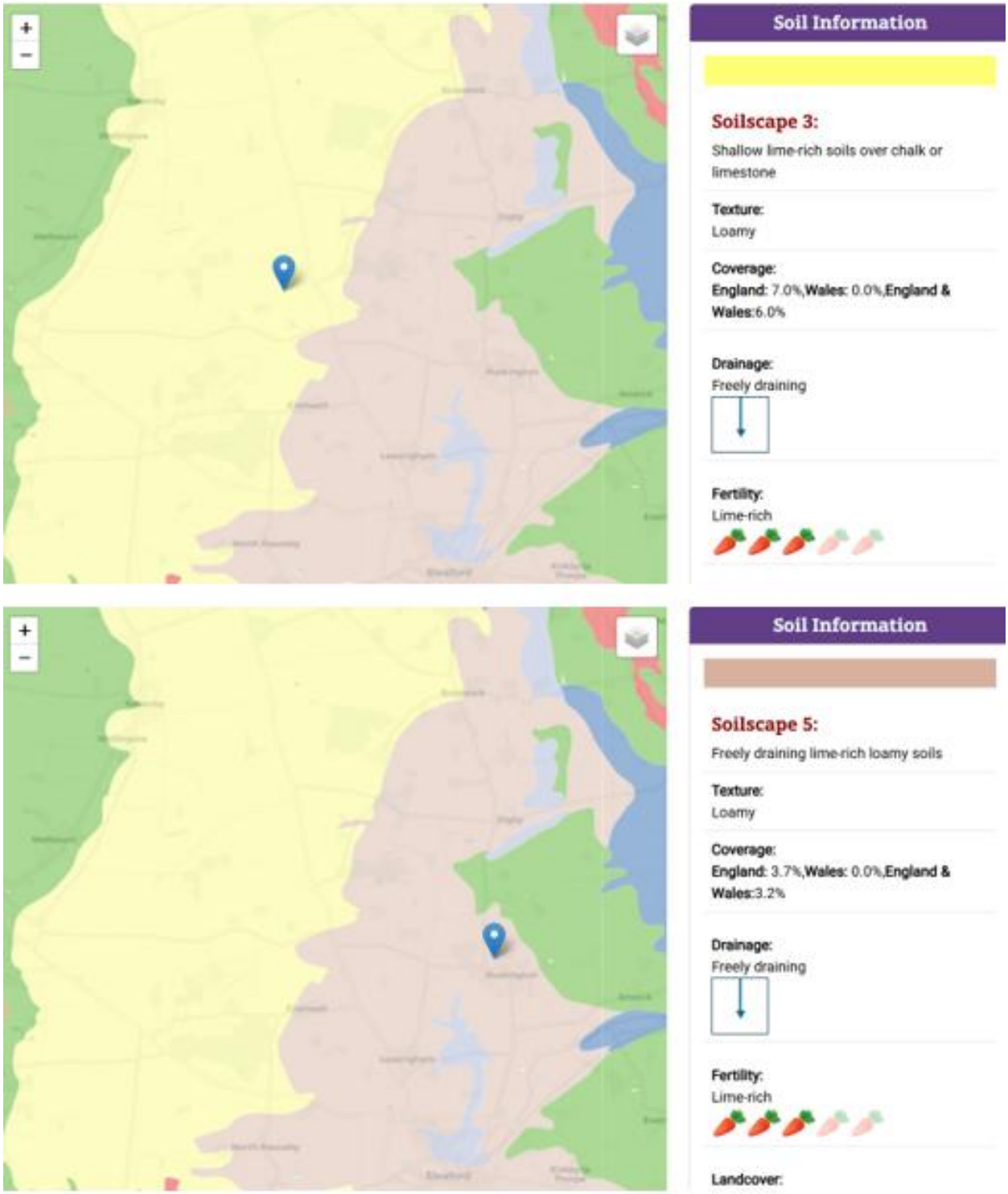


Fig.6. Soil descriptors in the limestone zone (Soilscape 3) and the Ruskington zone (Soilscape 5) (LandIS, 2025)

From this data it is hopeful that we can help to achieve a diverse calcareous grassland, which is a rare and valuable habitat in the UK, through considered management of the open meadow which we already have in place but will build upon.

The Beck - Hydrology and Flood Alleviation

The Beck is classed as a main river by the Environment Agency, flowing from a catchment of 78 km^2.

Horseshoe Hollow being a naturally banked section of the Beck and within a low elevation within the village, forms a natural floodplain. Vegetation and the small bends within the channel encourage water to leave the channel and flow laterally towards the Open Meadow, this creates a seasonal wetland, flood meadow area to the east of the Beck. This pressure release of lateral flow acts as a defence mechanism in flooding events, however, during large scale events such as October 2023, and January 2024, capacity was reached and despite holding back a lot of water, the village downstream of Horseshoe Hollow still flooded.

It is hoped that working with the Environment Agency, we may be able to make Horseshoe Hollow become an even more effective flood defence through some subtle groundworks.

Management

The management of Horseshoe Hollow has been evaluated since the original plan was written in 2021, the site comprises of five main habitat areas: the open meadow, the seasonal wetland/water meadow, the open woodland, the treeline/tussocky grassland and the Beck. These distinct areas are shown on Fig.7.

Fig.7. Habitat areas within Horseshoe Hollow. (Google Earth Pro, 2025)

The Open Meadow

The aim with the open meadow is to reduce the dominant grasses by reducing the nutrient levels within the soil, this is done primarily by removing cuttings when the meadow is cut to prevent composting back into the soil. By reducing the nutrient levels, dominant species become less vigorous which eventually creates space for other species to gain a foothold. No trees are to be planted within the open meadow which keeps it open to full sunlight. In 2023, collection was missed due to subsequent flooding after mowing and the land being too wet for the tractor and baler to get on.

Yellow Rattle (*Rhinanthus minor*) is also effective in reducing dominant grasses as it parasitises them, feeding on the roots and thus reducing vigour. We have introduced a small amount of Yellow Rattle, but it would definitely be advantageous to introduce more.

We are currently in year 4 of the management plan, we have noticed a depletion in the vigorous grasses which if continued will hopefully be the start of the establishment of the wildflower-rich calcareous grassland.

The reduction in fertility and depletion of vigorous grasses, alongside introduction of yellow rattle should allow any dormant native wildflowers in the seedbank to reappear. We will monitor plant diversity, and should this not improve, will source local native wildflowers from nearby Lincolnshire Wildlife Trust sites to introduce.

The open meadow is cut by a contractor in late August or Early September, using a forestry tractor with large width tyres for reduced soil compaction, and a large rotary cutting deck. The cuttings are then collected by an agricultural contractor using a small baler and tractor. The bales are removed from site by the contractor.

The area of the open meadow is defined by the perimeter footpath on its outside edge.

The Seasonal Wetland / Water Meadow

This area incorporates the margins of the Beck which RPC does not manage as it falls under the stewardship of the Environment Agency. The wider area is low lying and during autumn and winter forms two pools, one between the two stands of hawthorn and one within one of the stands, the ground is wet and an obvious difference in species grows in this area. Mowing does not take place here except for the footpaths.

The Open Woodland

The area west of the Beck is the Open Woodland, this is maintained on the autumn/winter tree maintenance schedule, but sympathetic to natural woodland as far as safety concerns allow. New trees have been planted here, with a plan to plant more hazel to develop a coppice woodland over time. It is a relatively young planting but is starting to produce deadwood which will begin to

establish the more mature woodland ecology, in time as the trees grow and form a denser canopy the grassland will change to a more woodland environment.

The Treeline / Tussocky Grassland

This forms the intermediate layer between the open meadow and the mature trees, it has been planted openly with trees and is not cut, giving an undisturbed sanctuary area for invertebrates, overwintering insects and small mammals. The treeline on the eastern boundary is maintained on an as and when basis, but only minimally to assist the growth of the new hedgerow there.

On the southern edge close to the banks of the Beck, Alder, cherry and hazel trees have been planted in an open copse, the grass here is left to cycle.

The Beck

The Beck is not managed by RPC with the exception of removing litter, it falls under the remit of the Environment Agency as it is a main river. General monitoring takes place constantly.

Hedgerows

Only one length of old hedgerow is present in Horseshoe Hollow, on the north boundary along the allotments, this is hawthorn, in moderate condition. The allotment side and the top requires regular cutting but the inward face can be left to grow on a four-yearly cycle. It may be beneficial to try to plant some new, established hawthorn plants and other native hedgerow species to fill it out.

New hedgerows have been planted on each boundary except for the southern, these are predominantly hawthorn, with a native mixture of blackthorn, hazel, dog rose, rowan, and crab apple planted with it. The first new hedge on the eastern boundary is in its 3rd year and is growing well, the newest is the western boundary which was planted this year (2025).

These hedgerows will be left to grow and establish. Once established they can be cut on a four year rotation to maintain an A shape. They have been planted with a sizable gap between them and the residential fences; this is a maintenance gap which will prevent the hedgerows encroaching into residential properties. These will be maintained on a yearly schedule.

Encouraging insect, mammal and bird diversity

Increasing the plant diversity in Horseshoe Hollow will naturally increase the diversity and abundance of insects, supporting more abundant and diverse bird and mammal species. In addition, we will actively encourage them by incorporating bird and bat boxes in the wooded areas of the Hollow. We will also maintain piles of logs and grass cuttings from regular maintenance to create shelter areas for small mammals and potentially, reptiles.

Footpaths

There are 5 main footpaths through Horseshoe Hollow which provide circular walks of varying length. These are maintained by pedestrian mower every two weeks through the growing season, creating walkways which are between 1 - 1.5 m in width. See Fig.2.

Litter

The site is inspected for litter several times a week. There are two bins, one near the Manor Street Entrance and one near the Horseshoe Close entrance. These are emptied weekly by NKDC.

Machine Access

Machinery can access Horseshoe Hollow by the Horseshoe Close entrance or by the Manor Street entrance.

Contractors

Andrew Doughty, Caretaker of Environment and Grounds for RPC and land manager for the site carries out all the maintenance he is equipped for in Horseshoe Hollow, however there are some tasks which require contractors.

Contractors have been chosen by their environmental ethos and their ability to carry out the tasks with minimal environmental impact on the site.

Surveys

An important part of future management of the site is a program of environmental surveys. This will help establish what is doing well and what is not and also will provide a record of what is hoped to be an improvement of species richness over the coming years.

Scientific vegetation surveys, insect surveys, and freshwater life surveys can be carried out at set points through the year.

Other surveys such as bird sightings, butterfly counts, and water vole sightings can be carried out involving the public as citizen science projects using online forums to compare results. This could also present the opportunity for children and local groups to be involved.

Costs

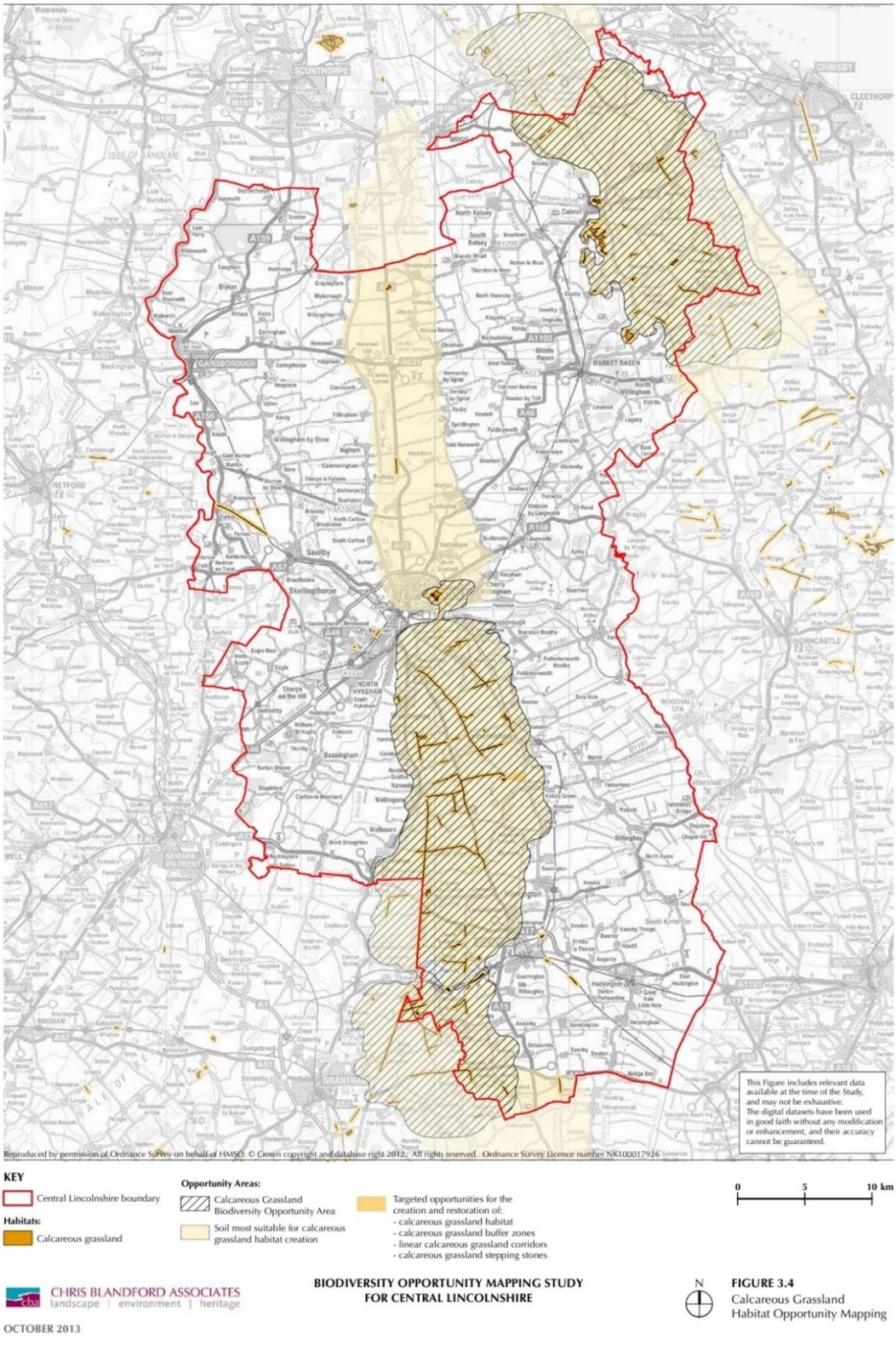
RPC budgets for the maintenance of Horseshoe Hollow each year within the precept along with other environmental costs within the village. It is hoped that funding can be obtained for some of the larger projects

Conclusion

Horseshoe Hollow is ready to become a Local Nature Reserve and to benefit from the advantages of gaining that status. It is a pocket of natural beauty within the village boundaries which people already enjoy visiting. It is exciting to see how it has developed, and we are confident that with continued good management, biodiversity will increase dramatically.

Appendix

Appendix 1 – Extract from Chris Blandford Associates 2013 report "Biodiversity Opportunity Mapping Study for Central Lincolnshire" showing the mapping and description for calcareous grassland opportunities.



BOA L – CALCAREOUS GRASSLAND SOUTH OF LINCOLN

Of the 37,856ha comprising the calcareous grassland south of Lincoln BOA, approximately 75% (28,360ha) lies within Central Lincolnshire, with the remaining 25% (9,496ha) extending south, towards Grantham (outside the Central Lincolnshire boundary). The opportunities explored within this BOA principally relate to the protection, conservation and extension of calcareous grassland habitats within the central southern swathe of Central Lincolnshire.

Key Environmental Characteristics

- Light land
- Associated with shallow, free-draining soils developed on limestone or chalk bedrock
- To the south from Wilsford to Humby (outside Central Lincolnshire) the land is heavier and associated with base-rich loamy and clayey soils developed on soft clay and chalky till
- Characteristic associated habitats: dry grassland, usually with an abundance of fine leafed grasses, low flowering herbs and/or bracken
- Stony soils with relic calcareous grassland may occur on steeper slopes in soft rock areas

General Description of Habitats

The dominant semi-natural habitat types within this 37,856ha opportunity area are woodland and calcareous grassland. Small fragments of woodland, mainly broadleaved, are found scattered throughout the BOA but do include some sites likely to be of BAP quality. There is also a number of large wood pasture and parkland sites, including those at Rauceby, Belton, Harmston and Branston (as well as at Belton, outside the Central Lincolnshire boundary). The calcareous grassland resource is mainly confined to a large number of road verges, which have been identified during the 'Life on the Verge' project and designated as Local Wildlife Sites. Besides that which is found on road verges, the largest extent of calcareous grassland on any one site is found at Greetwell quarry. A small number of neutral grassland and wetland sites are also present, concentrated mainly around Lincoln where this BOA merges with BOA G. Other habitats include a small extent of acid grassland and 'greenspace' – including brownfield sites, allotments, cemeteries, scrub, parks and gardens.

BAP Habitats

- Lowland calcareous grassland
- Lowland mixed deciduous woodland
- Wood pasture and parkland
- Lowland fens
- Lowland meadows
- Floodplain grazing marsh
- Wet woodland
- Lowland dry acid grassland
- Traditional orchards

For a detailed description of the UK BAP habitats see http://jncc.defra.gov.uk/page-5706

Ecological Network Enhancement Opportunities

Opportunities for improving the ecological connectivity of existing 'core sites' (BAP/other habitats and designated sites) to reduce habitat fragmentation and reverse species decline within this BOA include:

- Creation of calcareous grassland linear corridors extending northwards from the High Dyke corridor;
- Restoration of sub-optimal calcareous grassland habitats at RAF Barkston Heath and Cranwell;

- Restoration and management of road verges by introducing appropriate management e.g. cut and bale, scrub removal;
- Creation and extension of calcareous grassland roadside verges through seeding and plug planting to aid colonisation and habitat contiguity;
- Creation of calcareous grassland in connection with the Sleaford Sustainable Urban Extensions;
- Creation of buffers adjacent to calcareous grassland habitats using targeted environmental land management schemes, to ameliorate the effects of intensive agriculture; and,
- Restoration of relic calcareous grasslands through the creation of buffers to reduce to effects of spray drift and the introduction of appropriate grazing regimes.

(Chris Blandford Associates, 2013)

Appendix 2

LandIS full soil report for 1 km^2 area encompassing Horseshoe Hollow.

Soil Site Report

Soil Report

Horseshoe Hollow

Easting: 507883
Northing: 351187
Site Area: 1km x 1km

Prepared for: Andrew Doughty, The Open University
Date: 30 Mar 2025

Citation

Citations to this report should be made as follows:

Cranfield University (2025) Soil site report, Soil Report for location 507883E, 351187N, 1km x 1km, 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.

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 though 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

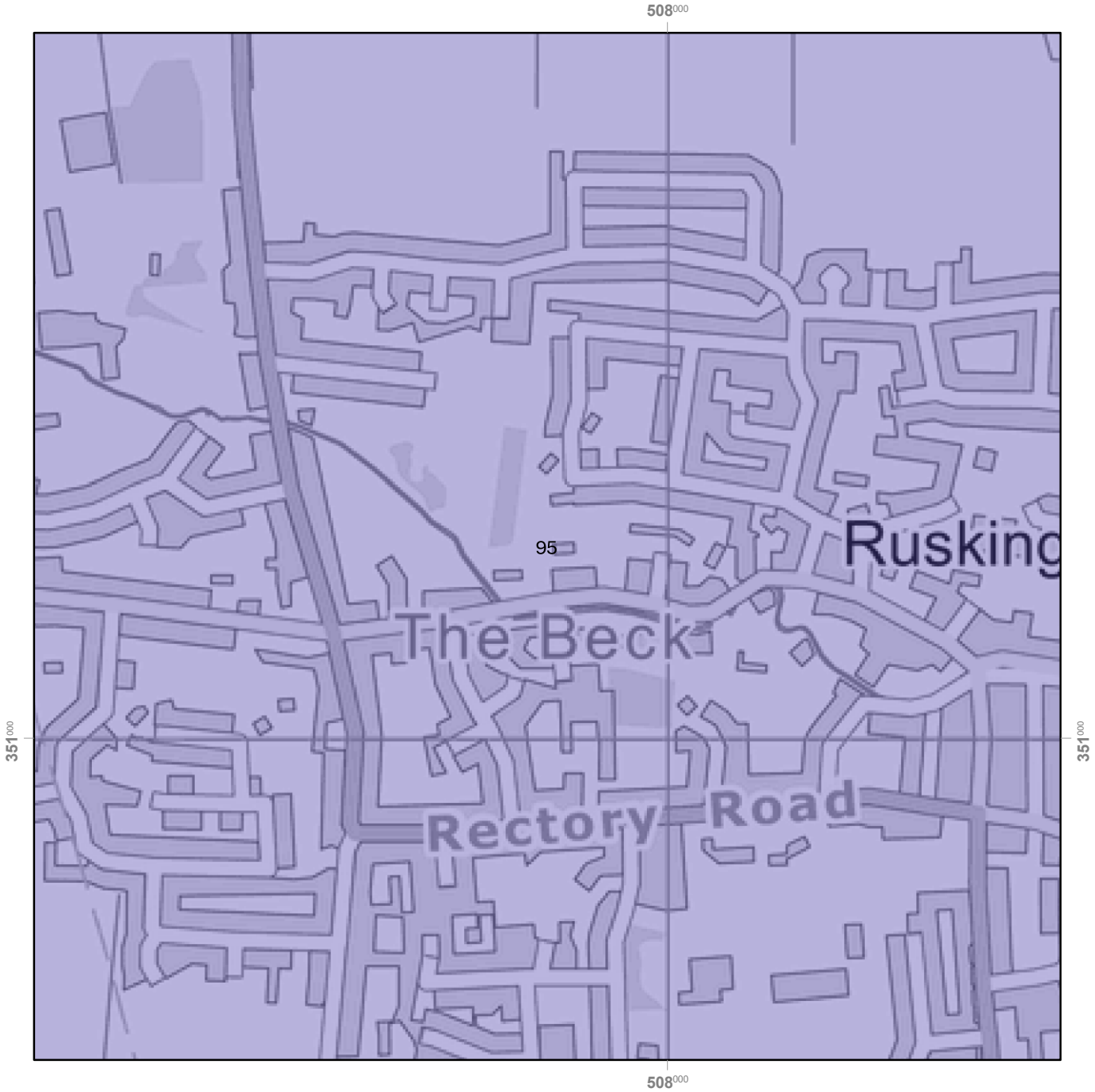
Soils - Spatial Distribution Key

512c RUSKINGTON
Deep permeable calcareous coarse and fine loamy and sandy soils 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



Soil Parent Material Key

95 Glaciofluvial sand and gravel

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

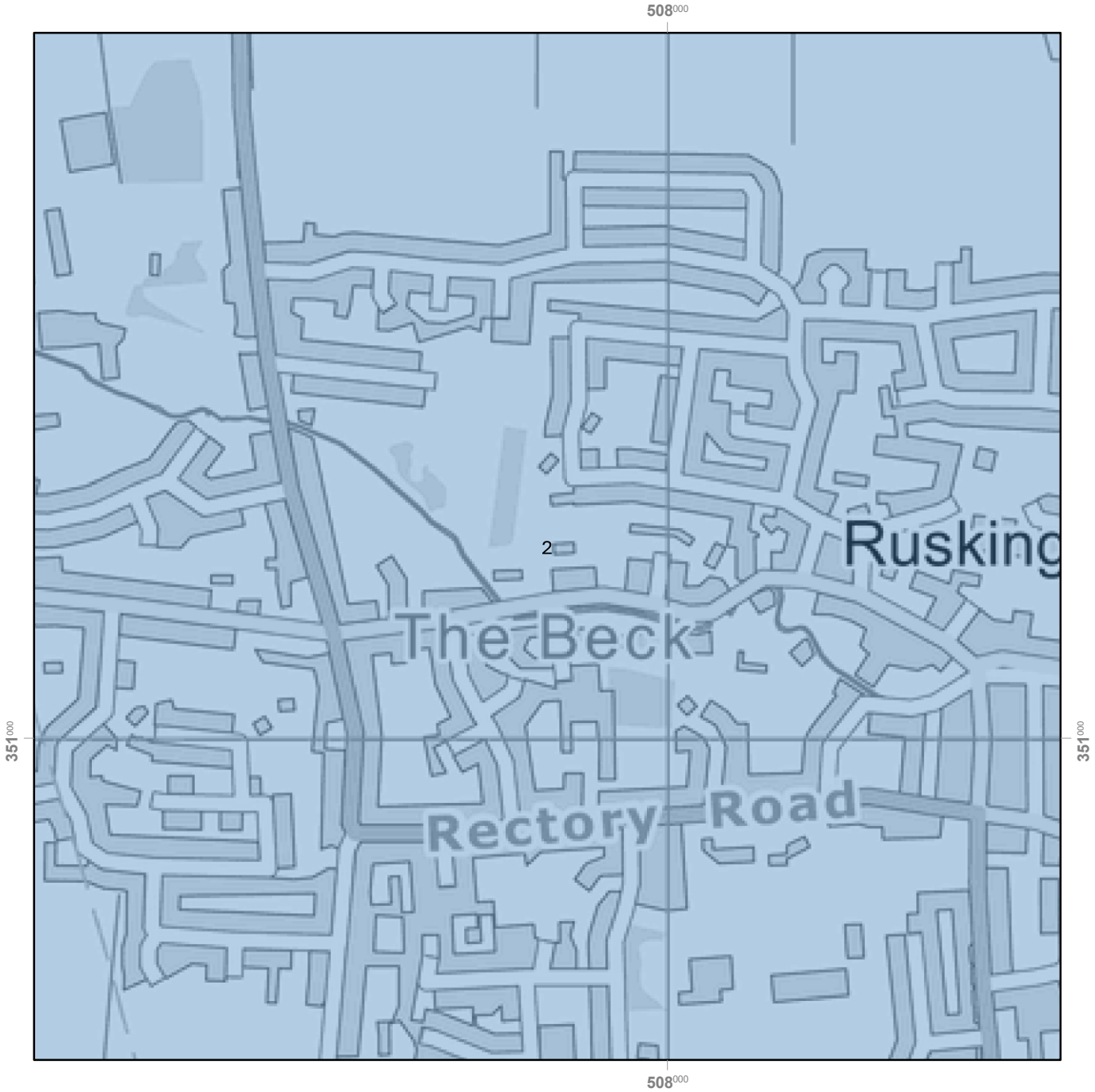
Natural Soil Fertility Key

2 Lime-rich

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



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

Typical Habitats Key

10 Herb-rich chalk and limestone pastures; lime-rich deciduous woodlands

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

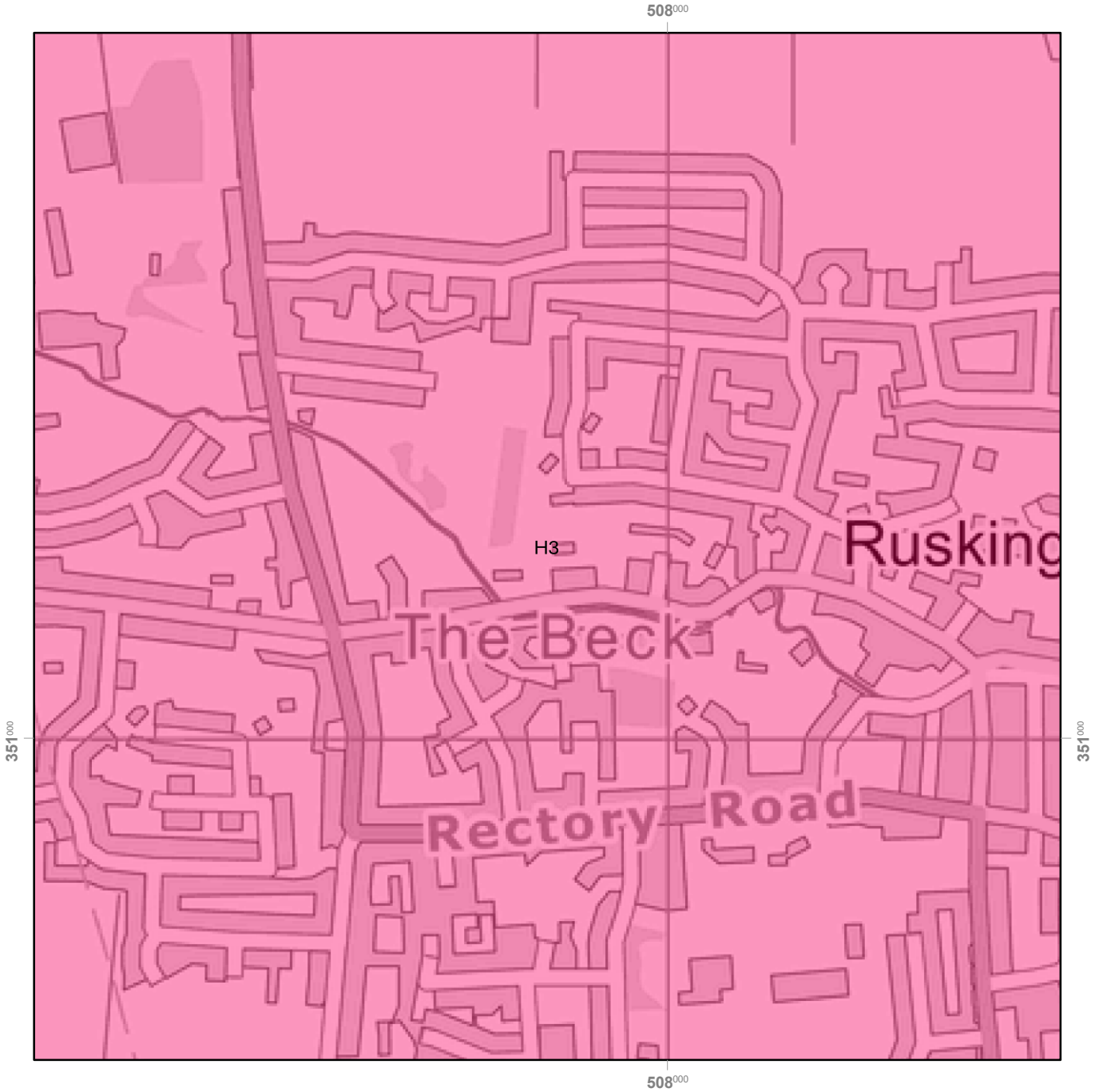
Hydrogeological Rock Type Key

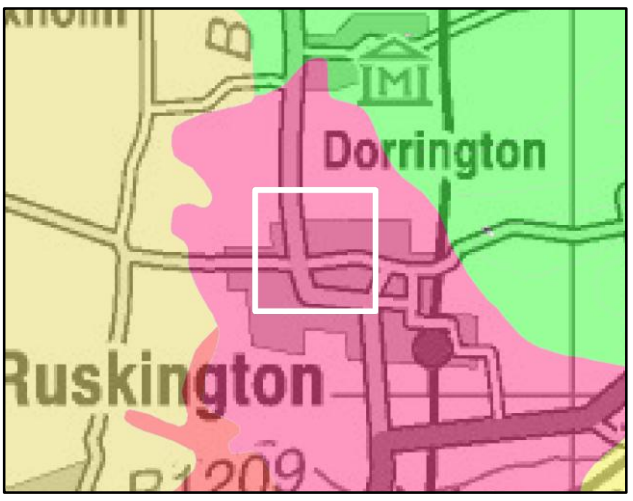
24 gravels

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)





Ground Water Protection Policy (GWPP) Key

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

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.

RUSKINGTON 512c
Deep permeable calcareous coarse and fine loamy and sandy soils 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

RUSKINGTON (512c)

Deep permeable calcareous coarse and fine loamy and sandy soils affected by groundwater.

a. General Description

Deep permeable calcareous coarse and fine loamy and sandy soils affected by groundwater.
The major landuse on this association is defined as Cereals, sugar beet and potatoes; some field vegetables.

b. Distribution (England and Wales)

The RUSKINGTON association covers 60 km² of England and Wales which accounts for 0.04% 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.

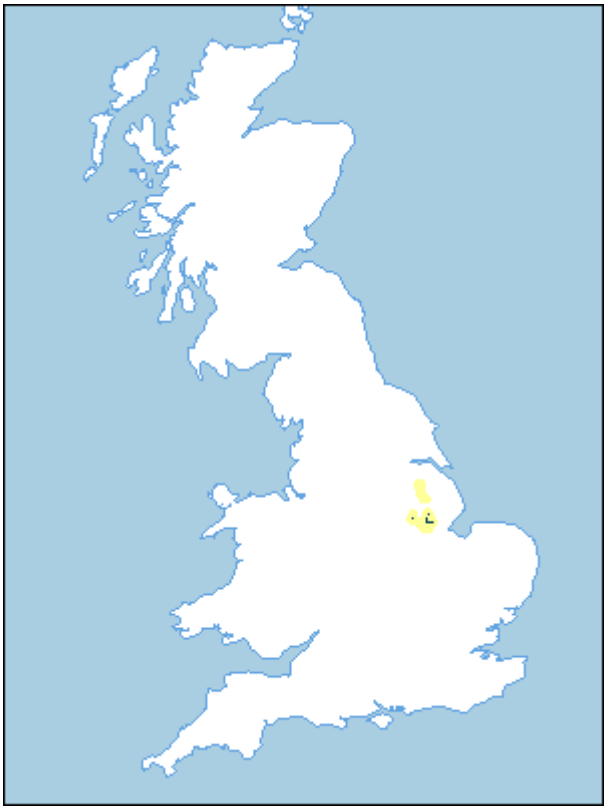


Figure 2: Association Distribution

c. Comprising Soil Series

Multiple soil series comprise a soil association. The soil series of the RUSKINGTON 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 occuring 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.

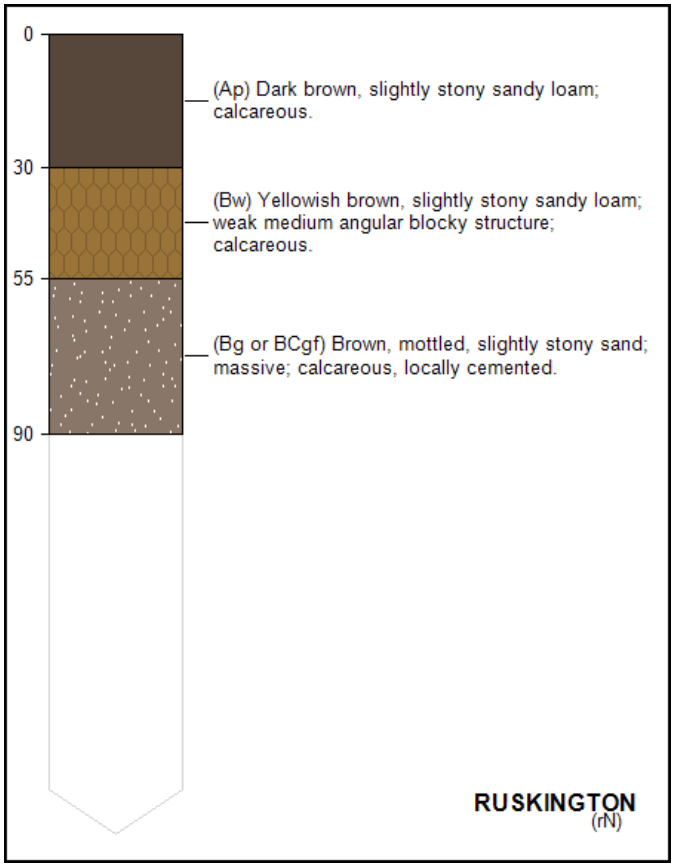
Table 1: The component soil series of the RUSKINGTON soil association. Because absolute proportions of the comprising series in this association vary from location to location, the national proportions are provided.

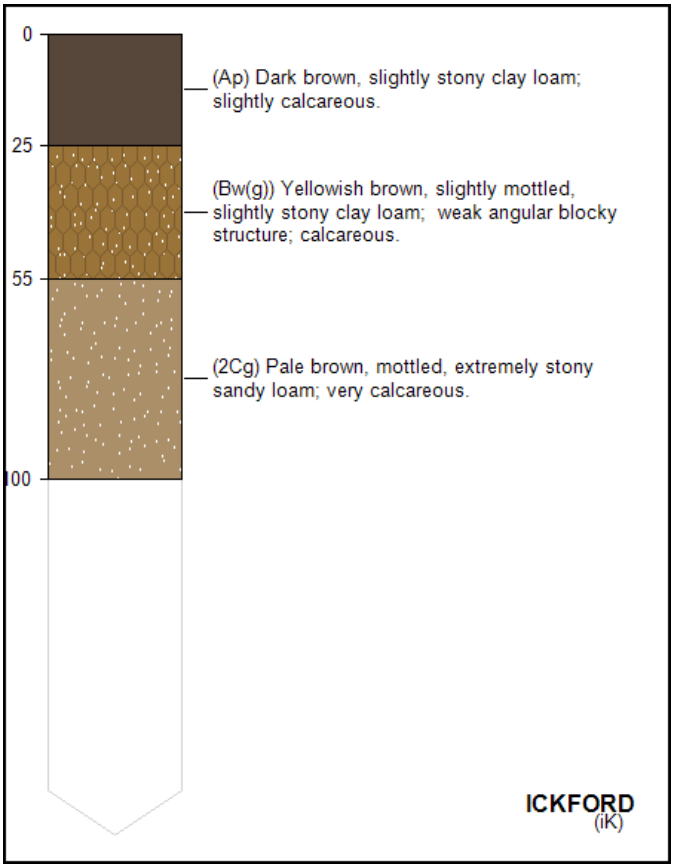
Soil Series	Description	Area %
RUSKINGTON (rN)	light loamy drift with limestones	26%
ICKFORD (iK)	medium loamy material over calcareous gravel	24%
NEWSLEAFORD (Nz)	sandy drift with limestones	15%
OTHER	other minor soils	35%

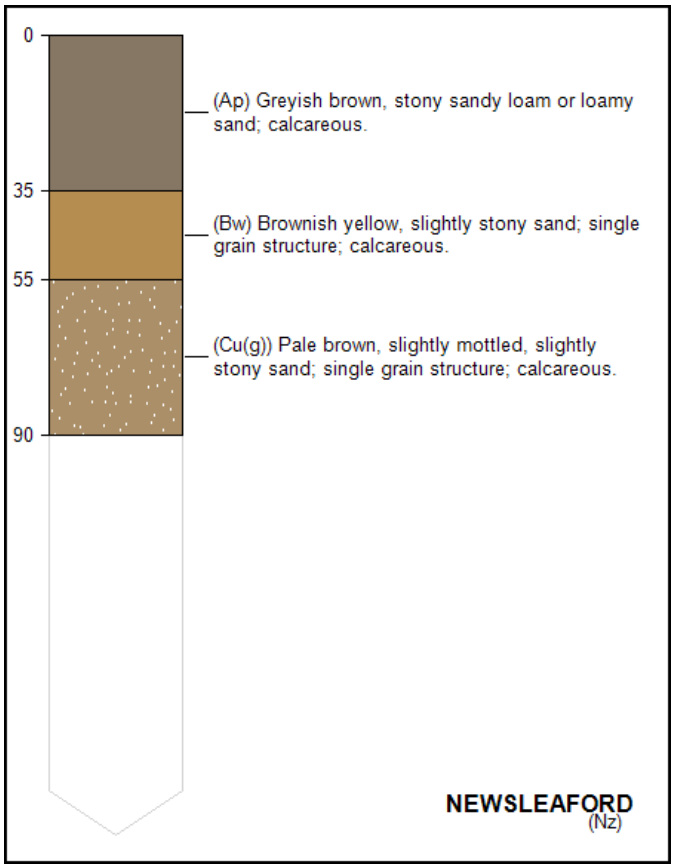
RUSKINGTON (512c)

Deep permeable calcareous coarse and fine loamy and sandy soils affected by groundwater.

d. RUSKINGTON Component Series Profiles







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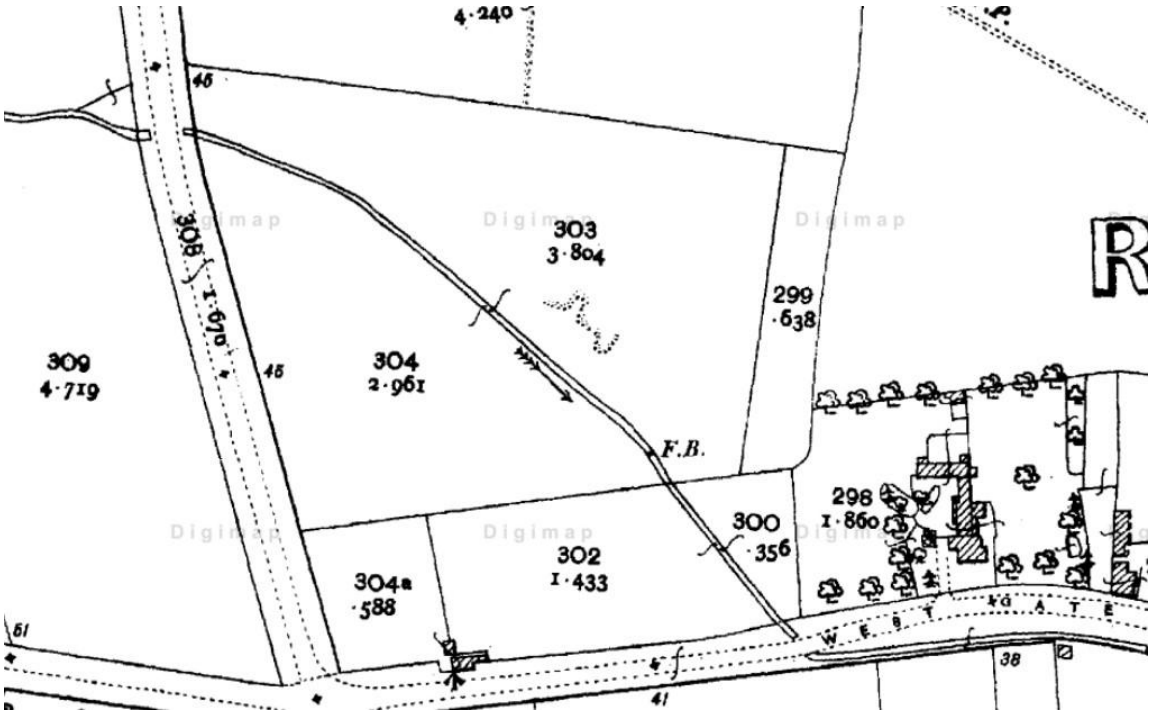
Appendix 3.

Historic maps (DigiMaps, 2025)

1890

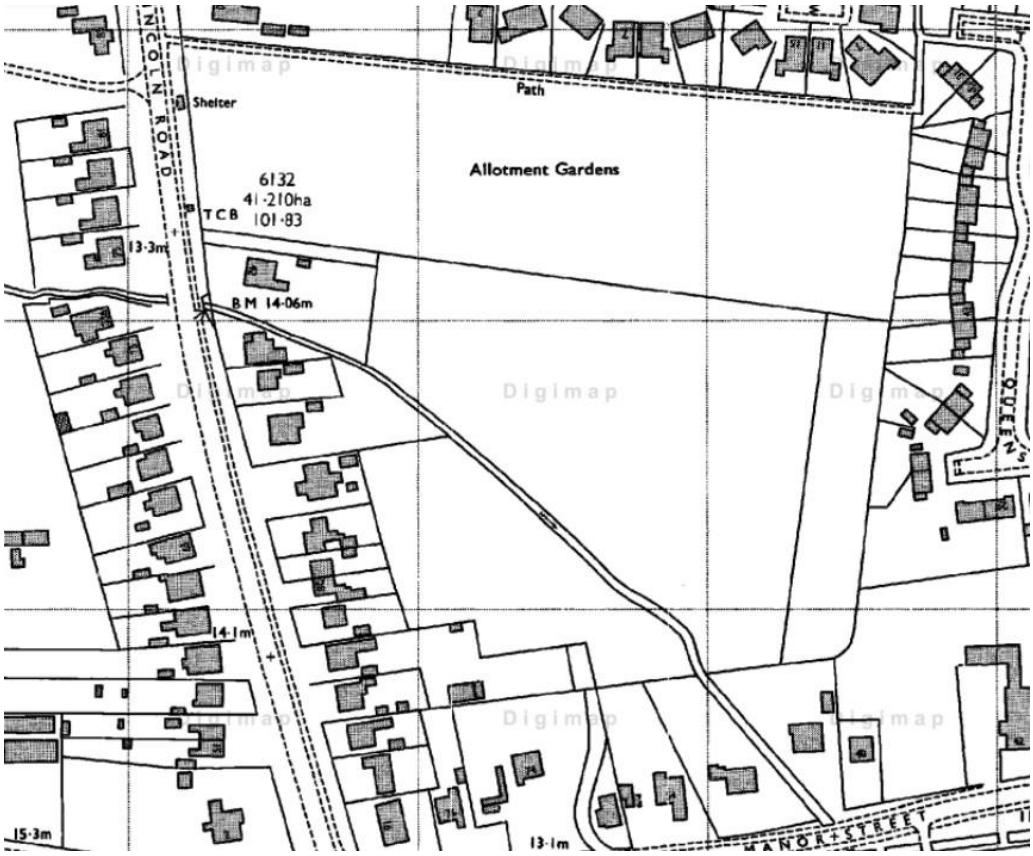
1900



1940


Windmill
Gravel Pit
Water Works
Manor House
All Saints' Church
Rectory
Ruskington

1980


LINCOLN ROAD
Shelter
Path
Allotment Gardens
6132
41·210ha
TCB
101·83
13·3m
BM 14·06m
14·1m
15·3m
13·1m
QUEEN
MANOR STREET

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Page 5 - Google Earth 10.77.0.1, Horseshoe Hollow, Ruskington, 53°02'51"N, 0°23'38"W, elevation 404M. 2D map, viewed 2nd April 2025, https://earth.google.com/web/@53.04761681,-0.39410727,13.17430271a,390.94848169d,35y,0h,0t,0r/data=CgRCAggBOgMKATBCAggASg0I_____ARAA

Page 7 - Google Earth 10.77.0.1, Horseshoe Hollow, Ruskington, 53°02'51"N, 0°23'38"W, elevation 404M. 2D map, viewed 2nd April 2025, https://earth.google.com/web/@53.04761681,-0.39410727,13.17430271a,390.94848169d,35y,0h,0t,0r/data=CgRCAggBOgMKATBCAggASg0I_____ARAA

Page 8 – British Geological Survey, Digimap Geology, Horseshoe Hollow, Ruskington, 53°02'51"N, 0°23'38"W, elevation 500M. 2D map, viewed 2nd April 2025, https://digimap.edina.ac.uk/roam/map/geology

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Page 11 - Google Earth 10.77.0.1, Horseshoe Hollow, Ruskington, 53°02'51"N, 0°23'38"W, elevation 404M. 2D map, viewed 2nd April 2025, https://earth.google.com/web/@53.04761681,-0.39410727,13.17430271a,390.94848169d,35y,0h,0t,0r/data=CgRCAggBOgMKATBCAggASg0I_____ARAA

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