

# Cambridgeshire and Peterborough Minerals and Waste

Appendix D to the Core Strategy  
Development Plan Document

Mineral Safeguarding Areas and Methodology

**Submission Stage**  
Autumn 2009



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## 1 Introduction

- 1.1 An essential role of the planning system is to adequately protect natural and other resources from incompatible development. However, until recently the system has given little weight to the protection of mineral resources as a finite resource to be husbanded for the future.
- 1.2 Recent changes in the planning system have resulted in Minerals and Waste Local Plans, including the Cambridgeshire Aggregates (Minerals) Local Plan 1991 and the Cambridgeshire and Peterborough Waste Local Plan 2003, being progressively replaced by Minerals and Waste Development Frameworks (MWDF).
- 1.3 Cambridgeshire County Council and Peterborough City Council, as Mineral and Waste Planning Authorities, are currently in the process of developing their MWDF. This process, coupled with new guidance on the definition of Mineral Safeguarding Areas (MSAs), has provided an excellent opportunity to provide local policies for the safeguarding of mineral resources from unwarranted sterilisation by other conflicting land uses. There is also new data about mineral resources from the British Geological Survey (BGS) which can be used in the identification of MSAs.

## 2 What are mineral safeguarding areas?

- 2.1 MSAs are areas where there is a known economic mineral resource, which has been defined using a specific methodology.
- 2.2 In Cambridgeshire and Peterborough, MSA areas will carry with them the requirement to consult the relevant Minerals Planning Authorities (MPAs) on development proposals which may have a significant effect on the identified mineral resource if permitted (the nature of such proposals are set out in Section 3). This consultation requirement ensures the appropriate MPA has the opportunity to comment on (and if necessary object to) any development proposal which could potentially sterilise an economic mineral resource.
- 2.3 The identification of MSAs may also present opportunities for prior extraction of minerals in conjunction with or before other forms of development, so as to avoid sterilisation. Such instances may be of economic advantage to developers, as the extraction operation would act as a feed stock for the development, significantly reducing costs associated with importing aggregates.
- 2.4 The purpose of MSAs is, therefore, to ensure that mineral resources are adequately protected and effectively considered in land-use planning decisions, so like other finite resources, they are not needlessly sterilised. In effect MSAs will make relevant parties aware of the presence of mineral resources.
- 2.5 It is important to note that although MSAs are being identified there is **no presumption that land within these areas will be worked for the extraction of minerals**. The areas that will be worked will be allocated through other policies in the Minerals and Waste Framework (in the Core Strategy and Site Specific Proposals Plan).

### 3 Planning policies for mineral safeguarding areas

- 3.1** The Cambridgeshire and Peterborough Minerals and Waste Plan Core Strategy contains a policy which sets out the strategic reasons and framework for the designation of MSAs, and include the provision for associated consultation on planning proposals within these areas, which will prevent the unnecessary sterilisation of identified economic mineral resources.
- 3.2** This Appendix D supplements the strategic policy in the Core Strategy by clearly setting out the extent of MSAs on an Ordnance Survey map base.
- 3.3** In Cambridgeshire, where two tier local government operates, district and city councils are responsible for the spatial planning of land in their areas, including land included within MSAs. Whilst ideally Local Development Frameworks (LDFs) should not include policies and proposals for non-mineral related development, or sensitive development around safeguarded mineral areas, which may result in sterilisation of mineral resources, in some cases site specific proposals are being made / have been adopted in advance of MSAs being designated. In these cases the requirement of any subsequent MSA designation will still apply, and consultation with the MPA will be required as any development comes forward. This will ensure that, as intended by the designation, mineral resource matters will be taken into account. There is also a legislative requirement that MSAs must be reflected in their LDFs i.e. on the proposals maps.
- 3.4** In Peterborough, which is a unitary authority, the LDF will not include proposals for non-mineral related development or sensitive built development within or close to safeguarded mineral areas in order not to sterilise valuable mineral resources.
- 3.5** Where there is a proposal for non-minerals related development in a MSA the strategic policy in the Minerals and Waste Plan Core Strategy will ensure that the MPA is consulted to ensure that mineral interests are being addressed, and that where necessary detailed site investigations be undertaken to determine the quality and extent of the resource, economic viability of prior extraction and the need for development.
- 3.6** However, it is recognised that not all development will require consultation; indeed this would not be practicable, as the MPAs do not have the capacity to respond to such a volume of consultations. As such MSA policies will only require consultation on certain proposals which will be those deemed as being 'major'. The definition of major development will be drawn from the Town and Country Planning (General Development Procedure) Order 1995 development thresholds for major development, which is as follows:
- 3.7 *Major Development*** – *development involving any one or more of the following:*
- a. *the provision of dwelling houses where –*
    - i. *the number of dwelling houses to be provided is 10 or more; or*
    - ii. *the development is to be carried out on a site having an area of 0.5 hectare or more and it is not known whether the development falls within paragraph (a)(i);*
  - b. *the provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more;*
  - c. *development carried out on a site having an area of 1 hectare or more; or*
  - d. *waste development.*

## 4 Mineral resources in Cambridgeshire and Peterborough

- 4.1** The BGS Mineral Resource Information for Development Plans forms the primary information source regarding minerals resources within Cambridgeshire and Peterborough. Another potentially crucial source is the minerals industry itself.
- 4.2** A range of minerals resources exist within the Cambridgeshire and Peterborough area. Key resources identified are extensive deposits of sand and gravel, brick clay, limestone, and chalk.

### Sand and Gravel

- 4.3** Economically sand and gravel is the most important mineral produced in the local area. It occurs in a wide variety of geological environments within Cambridgeshire and Peterborough, mostly within superficial or drift deposits. These are subdivided into river sand and gravel, glacial deposits, head deposits and bedrock sands. The principle uses for sand are as a fine aggregate in concrete mortar and asphalt, whilst gravel is used as a coarse aggregate in concrete.

### Post-Glacial (River) Sand and Gravel

- 4.4** These physically extensive resources occur in both raised river terraces flanking the modern floodplains and underlying present day alluvium. The main sources of these materials are found in the valleys of the Nene, Ouse, Welland, Granta and Cam. In addition, Fen Gravels can also be found close to these valleys which stretch out to the Fen edges in Cambridgeshire and Peterborough.

### Glacial Sand and Gravel (Fluvioglacial deposits)

- 4.5** The products of deposition by glacial meltwaters, tend to be found in the Southeast of Cambridgeshire in and around Cambridge. Bodies of sand and gravel often occur in sheet or delta like layers above till deposits.

### Head Gravels

- 4.6** Comprising of gravelly deposits that have been involved in mass movement downslope, often mixed with other lithologies present on the slope, and quality can vary. Cambridgeshire and Peterborough has isolated patches of such deposits.

### Bedrock Sand

- 4.7** Mostly confined to the Southwest of the County, the Woburn Sands formation is no longer extracted in the County, as the grain quality and size is variable.

### Brick Clay

- 4.8** The Lower Oxford Clay found in the Peterborough area was historically one of the major sources of brick clay in Britain, with extraction on a significant scale but now concentrated at a very limited number of locations (west of Whittlesey). It is predominantly used in the manufacture of bricks and, to a lesser degree, roof tiles and clay pipes. In addition these clays may also be used as a source of construction fill for road building and for lining and sealing landfill sites.

### Limestone

- 4.9** The Lincolnshire Limestone Formation creeps into the North West of the County just West of Peterborough. Previously used as building stone, it now tends to be used for crushed rock aggregates, used as construction fill or as a sub-base roadstone material. There is also a slither of Upware Limestone North of Cambridge. This is a soft Limestone quarried on a small scale for agricultural lime and asphalt filler.

### Chalk

- 4.10** A relatively soft, fine-grained, white chalk, it is divided into two categories, grey and white. Located in a physically extensive band running from the South West of the County running North Easterly across to Newmarket, chalk extraction for agricultural lime was once widely practised and there are numerous small disused quarries. Grey chalk, together with clunch and underlying chalk marl, is extracted at Barrington for cement manufacture and other building products, whilst white chalk is extracted at Steeple Morden for the production of chalk whiting.

## 5 Methodology

5.1 It is not practical to identify all mineral reserves as MSAs due to a number of factors such as:

- some areas of identified resources are too small to justify extraction
- some mineral resources are not of economic significance
- some resources are already sterilised, those located beneath existing urban development.

5.2 Certain criteria have been used to refine the Cambridgeshire and Peterborough MSAs. These include:

- type and demand for minerals resource
- previously worked areas and current operation and planning permissions
- urban areas / settlements

### Type and Demand for Mineral Resource

5.3 Critical to the development of mineral resources is the level of demand for the resource as it relates to development within Cambridgeshire and Peterborough and other export opportunities.

#### Sand and Gravel

5.4 This is crucial to the planned growth agenda to help achieve government targets for housing development, and as such all types of sand and gravel identified by the BGS mapping are included as MSAs.

#### Brick Clay

5.5 Brick clay is also required from both an economic and development point of view and with limited resources within Cambridgeshire and Peterborough all is included as MSAs.

#### Limestone

5.6 Likewise, limestone is an important economic resource, that is quite scarce throughout the County, consequently, all Limestone is included as MSAs.

#### Chalk

5.7 Chalk is less scarce, however, it plays a crucial role in the making of cement clinker, which in turn is important for development. Rather than safeguard large parts of the County, MSAs are identified around the major operational chalk quarries.

### Previously worked areas and current operations and planning permissions

5.8 Due to the very extensive amount of chalk in existence throughout South Cambridgeshire and given the limited number of mineral extraction sites, MSAs for chalk are only be identified in close proximity to existing quarries.

### Urban Areas/Settlements

5.9 Areas that are defined as urban settlements in local plans that prevent extraction due to sterilisation of minerals are excluded from MSAs.

### GIS Methodology

5.10 The existing BGS mineral resource line work has been manipulated to address certain issues with the following criteria adhered to:

- exclusion of isolated or truncated sand and gravel resources where deposits are less than 25 hectares in area which are thus unlikely to be economically viable as stand alone operations.
- exclusion of all urban settlements as defined as urban areas in the relevant Local Plans.

5.11 It is recognised that the BGS minerals safeguarding data is not comprehensive and the quality is variable, consequently boundaries should be considered, for the most part, as approximate. Therefore, most of the mineral resource information shown is regarded as an inferred resource. The boundaries and locations of deposits are as such used to indicate likely areas and extents of mineral deposits rather than exact locations and extents.

### Refining the Mineral Safeguarding Areas

5.12 Following the definition of MSAs using the above methodology, there was an initial consultation with key stakeholders, as advised by the Government. A full draft MSA document was then subject to public consultation through the Preferred Options stage. This involved the minerals industry, district and city councils, adjoining authorities as well as the wider public. This gave the minerals industry, who often hold more detailed geological information, the chance to provide information which can be used to refine MSAs. Other planning authorities have also had the opportunity to consider the draft MSAs with regard to their own proposals, and adjoining MPAs have been able to consider the compatibility of Cambridgeshire and Peterborough MSAs with their own existing or emerging proposals.

5.13 Following the consultations the MSAs have been finalised.

5.14 The MSAs will be periodically reviewed.

### Interpretation of Mineral Safeguarding Maps

5.15 BGS, who are the primary information source regarding mineral resources, have stated that the identification and delineation of mineral resources is imprecise as it is limited not only by the quantity and quality of data currently available, but also involves predicting what might, or might not, become economic to work in the future. The assessment of mineral resources is a dynamic process which must take into account a range of factors including geological reinterpretation as additional data becomes available. Also included is the continually evolving demand for minerals, or specific qualities of minerals, due to changing economic, technical and environmental factors. Consequently, areas that are of potential economic interest as sources of minerals may change with time. In addition, criteria used to define resources, for example in terms of mineral to waste ratios, also change with location and time. Thus a mineral deposit with a high proportion of waste may be viable if located in close proximity to a major market, but uneconomic if located further away. These criteria vary depending on the quality of the information available. The extent of aggregate resources outlined for this project are generally the surface expression of the resource. Workable minerals may extend beneath overburden which is adjacent to the outcrop area shown.

5.16 **Inferred resources** are defined from available geological information. The majority of resources depicted on the maps produced for this study fall within this category. They have neither been evaluated by drilling or other sampling methods, nor had their technical properties characterised, on any systematic basis.

5.17 **Indicated resources** are those in which there is a greater degree of geological assurance and the tonnage and grade are computed partially from specific measurements, in this case borehole data. Indicated resources are only given in areas assessed for sand and gravel by BGS resource surveys (Industrial Minerals Assessment Unit) which defined them by overburden to mineral ratios. In these areas, the possible extent of sand and gravel concealed beneath till (boulder clay) and/ or other material is shown. IMAU resource polygons are displayed on the maps in those areas where they exist.



- 5.18** At the interface between areas surveyed at different levels of detail there are apparent mismatches between mineral resource.
- 5.19** The mineral resource information displayed on the maps has been produced by the collation and interpretation of geological data principally held by the British Geological Survey. The mineral resource data presented are based on the best available information, but are not necessarily comprehensive and their quality is variable. The inferred boundaries shown are, therefore, approximate. Mineral resources defined on the map delineate areas within which potentially workable minerals may occur.

## References

- 5.20** Further information on Minerals Safeguarding Areas can be found at:

McEvoy, F M, Cowley, J, Hobden, K, Bee, E and Hannis, S, 2007, A Guide to Mineral Safeguarding in England, available at: [http://www.mineralsuk.com/britmin/mineral\\_safeguarding\\_oct07.pdf](http://www.mineralsuk.com/britmin/mineral_safeguarding_oct07.pdf), BGS commissioned report CR/07/060

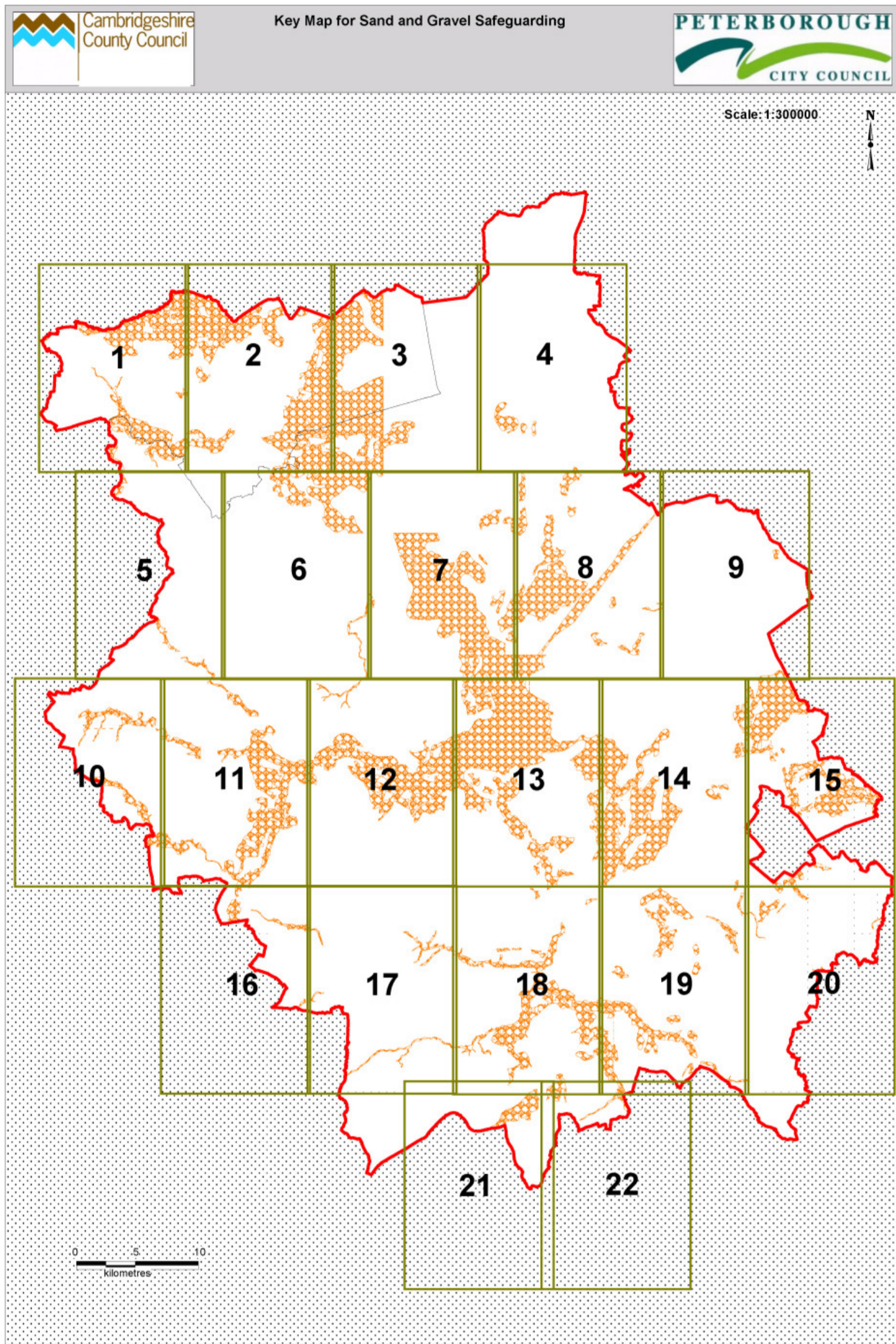
These areas are not of uniform potential and also take no account of planning considerations that may limit their working. The economic potential of specific sites can only be proved by a detailed evaluation programme. Such an investigation is an essential precursor to submitting a planning application for mineral working. The individual merits of the site must then be judged against other land-use planning issues. Extensive areas are shown as having no mineral resource potential, but some isolated mineral workings may occur in these areas. The presence of these operations generally reflect very local or specific situations.

## 6 Map Legend

# Mineral Safeguarding Legend

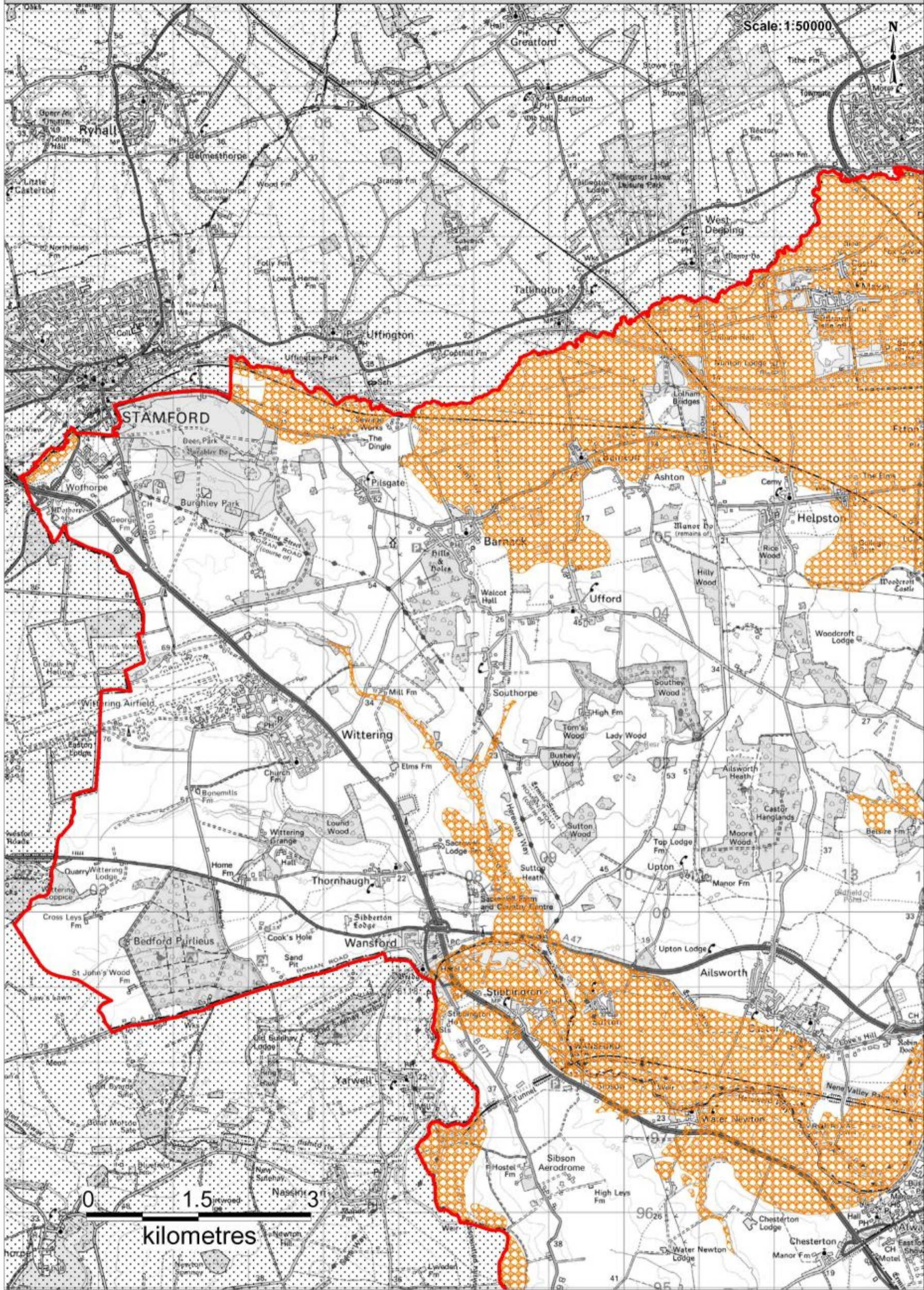
	Brickclay
	Chalk
	Limestone
	Sand & Gravel

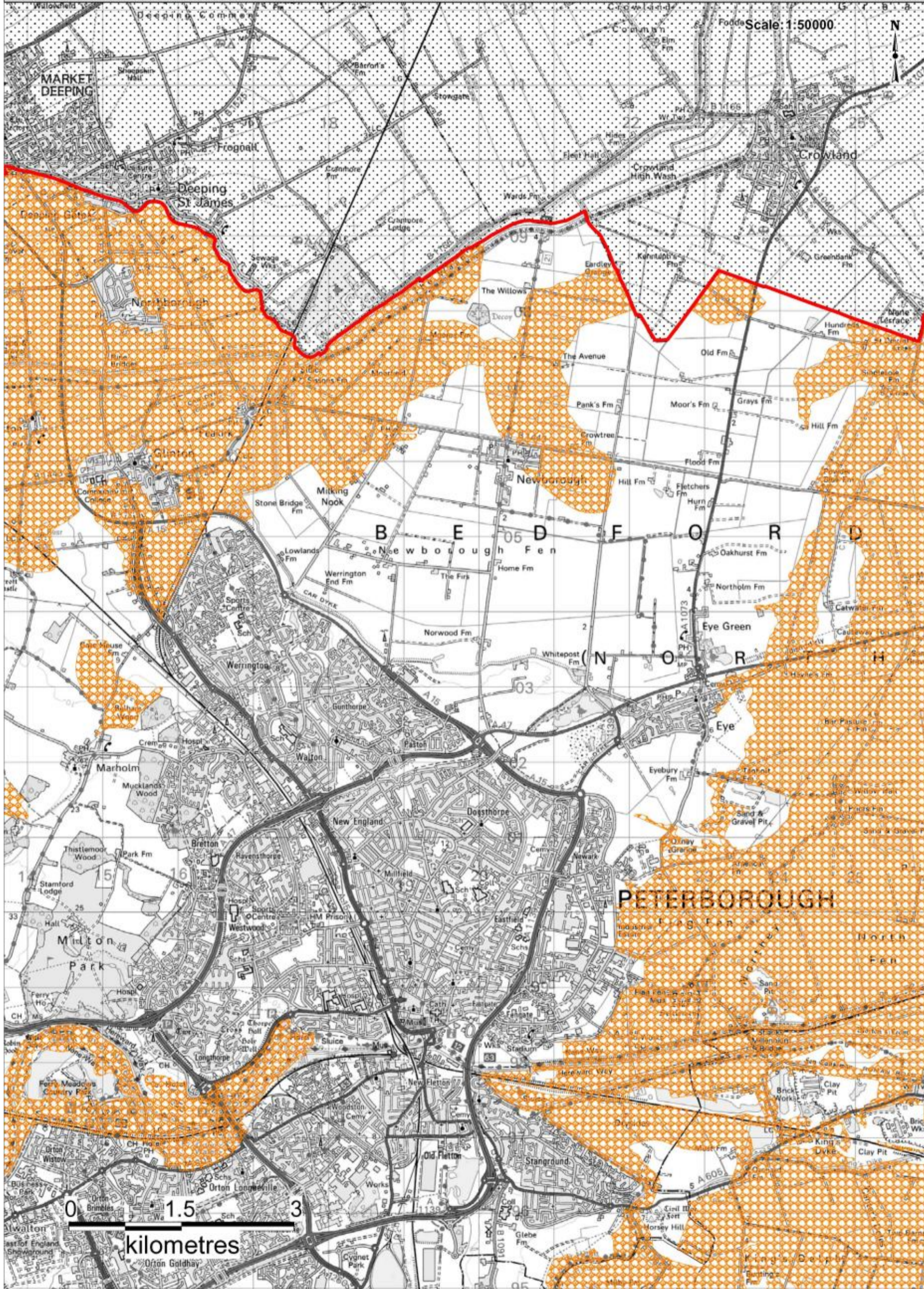
# 7 Sand and Gravel Safeguarding Areas





Map 1: Sand and Gravel Safeguarding



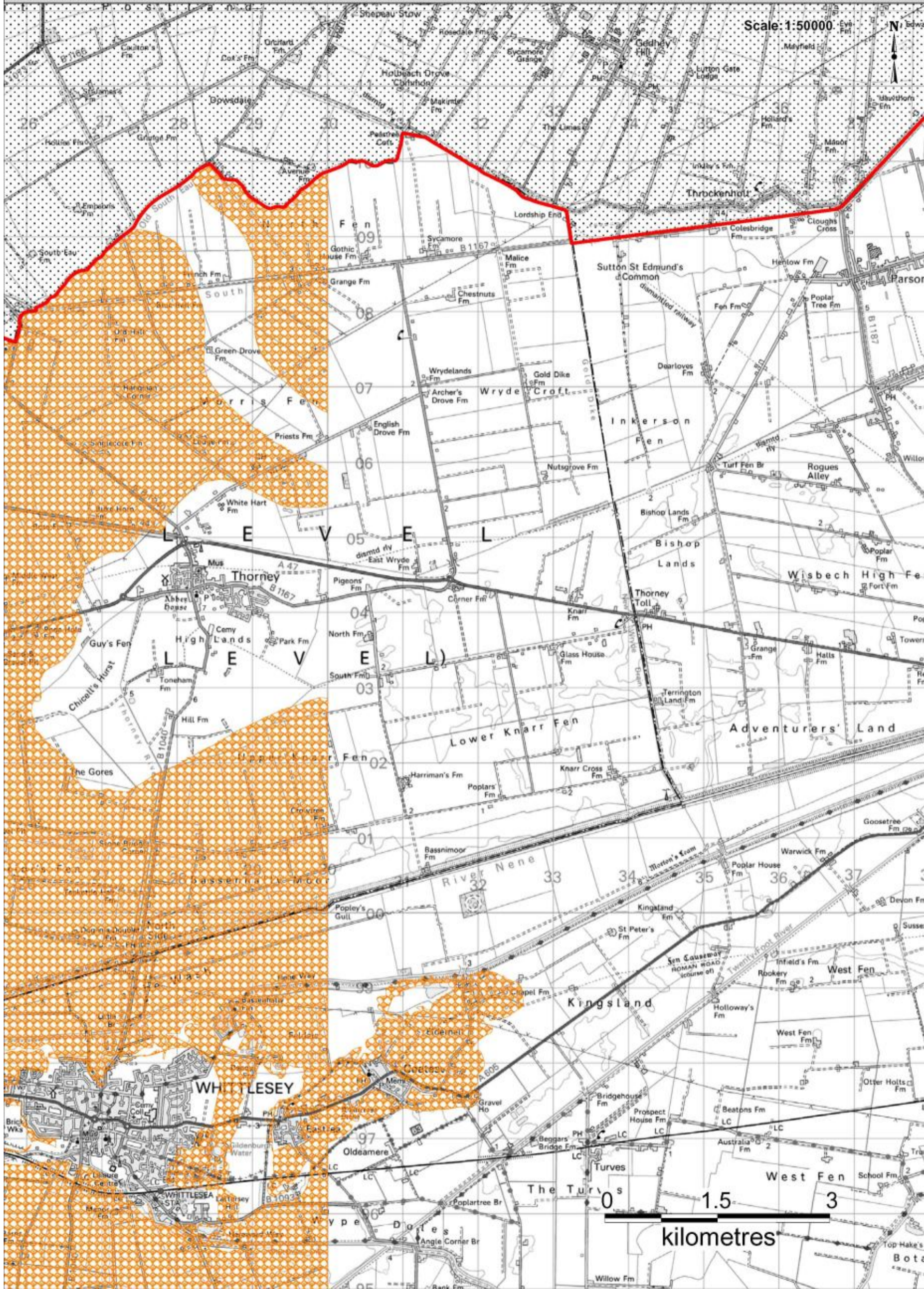


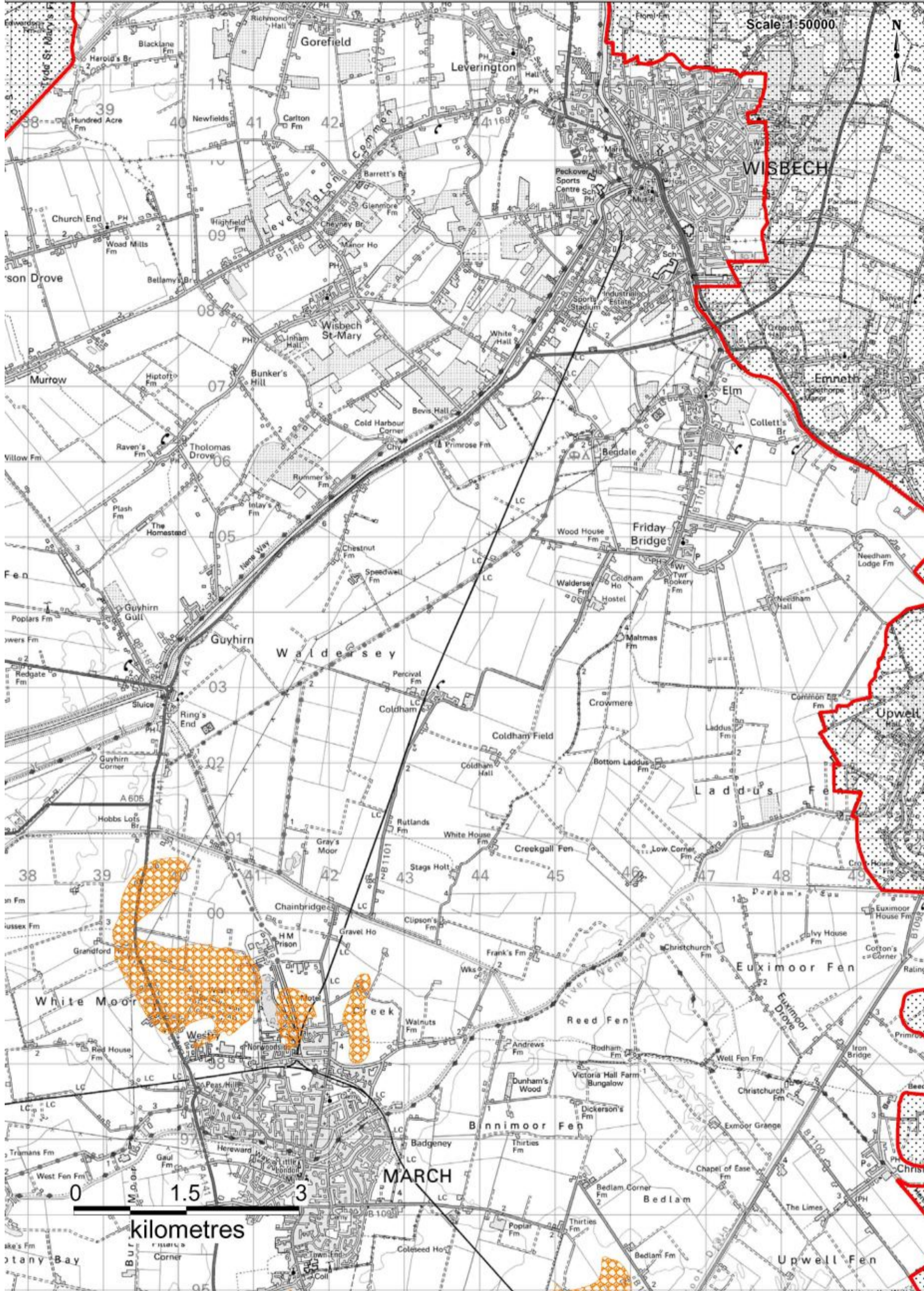
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Map 3: Sand and Gravel Safeguarding



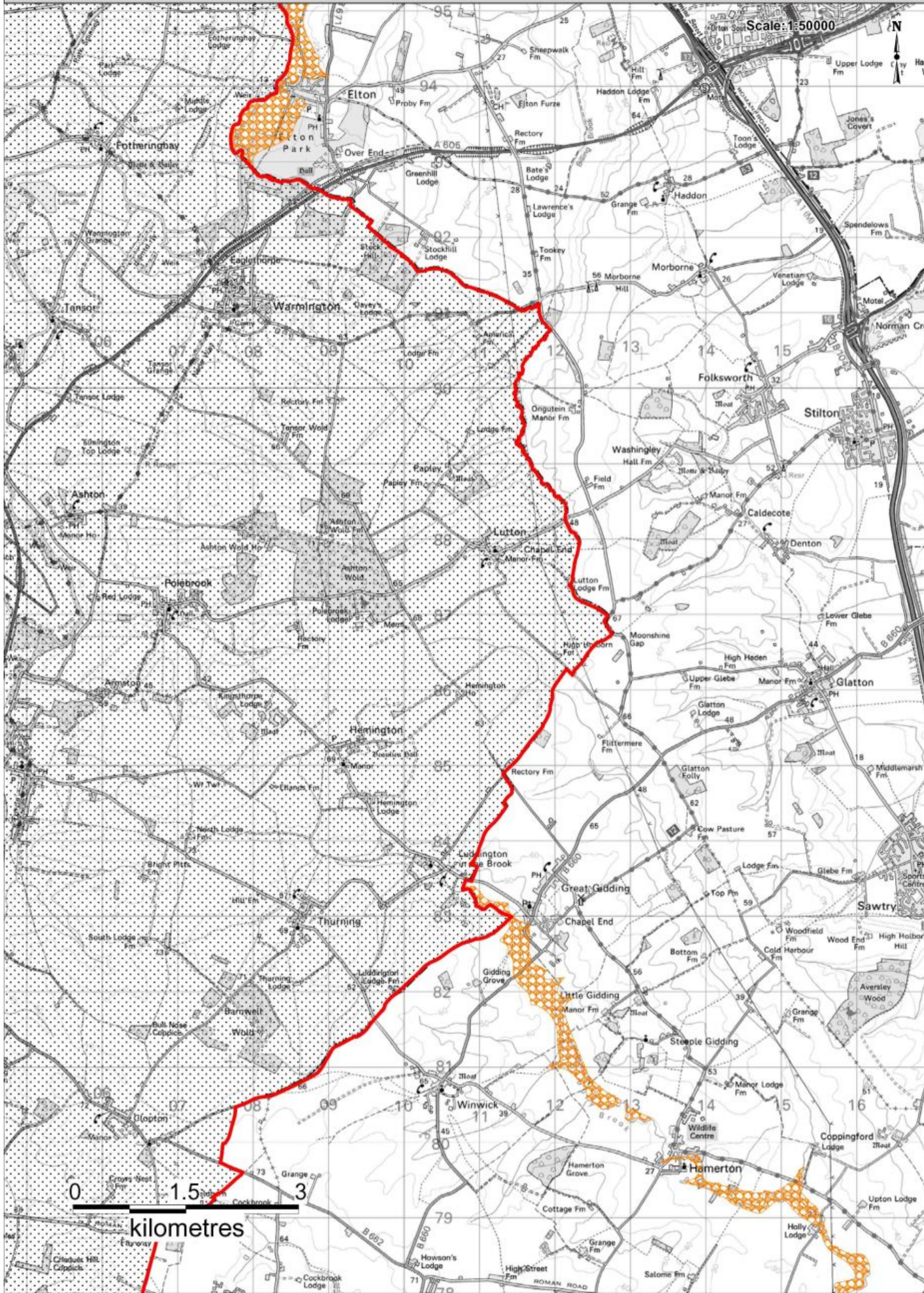
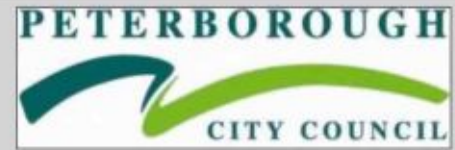


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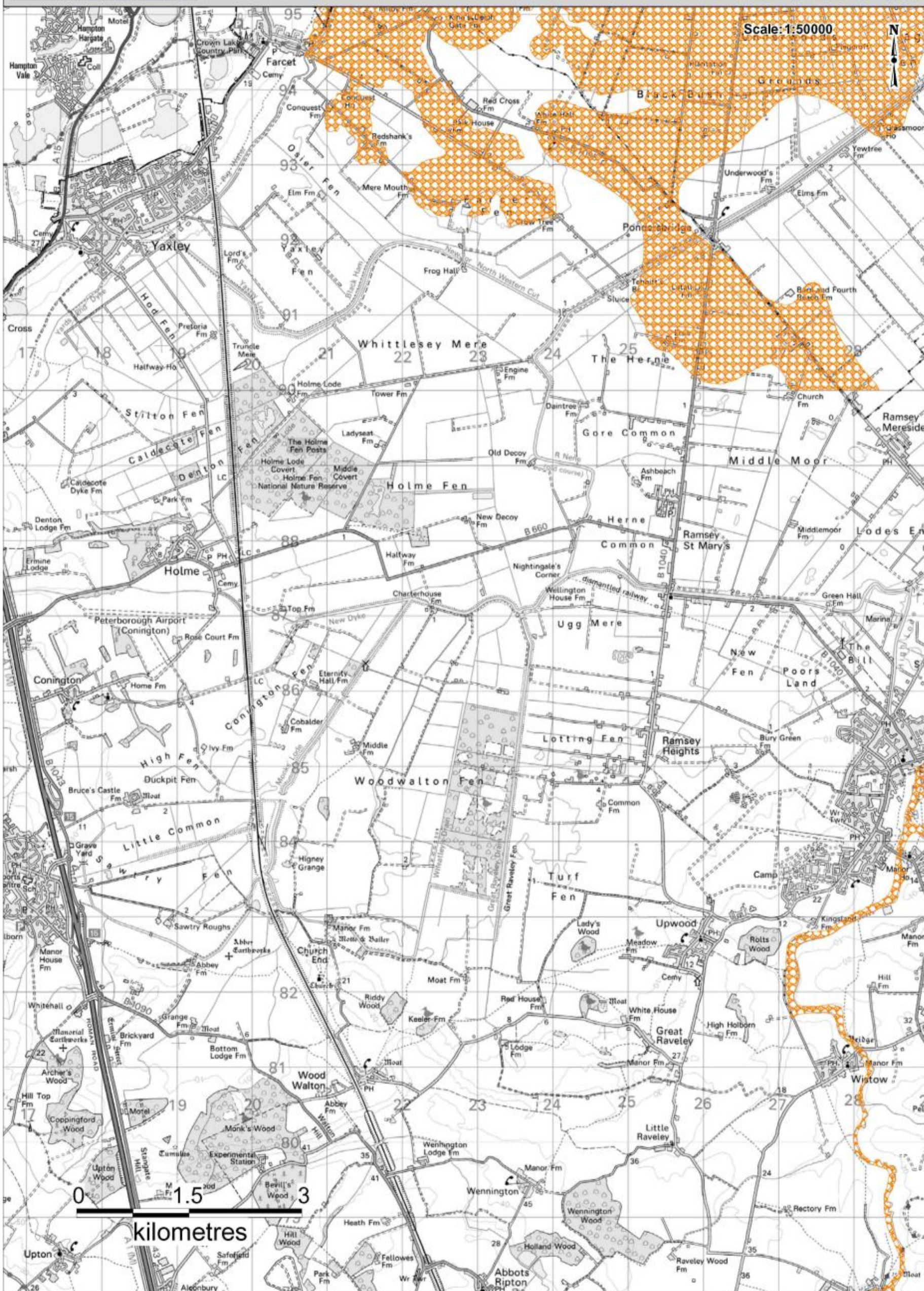
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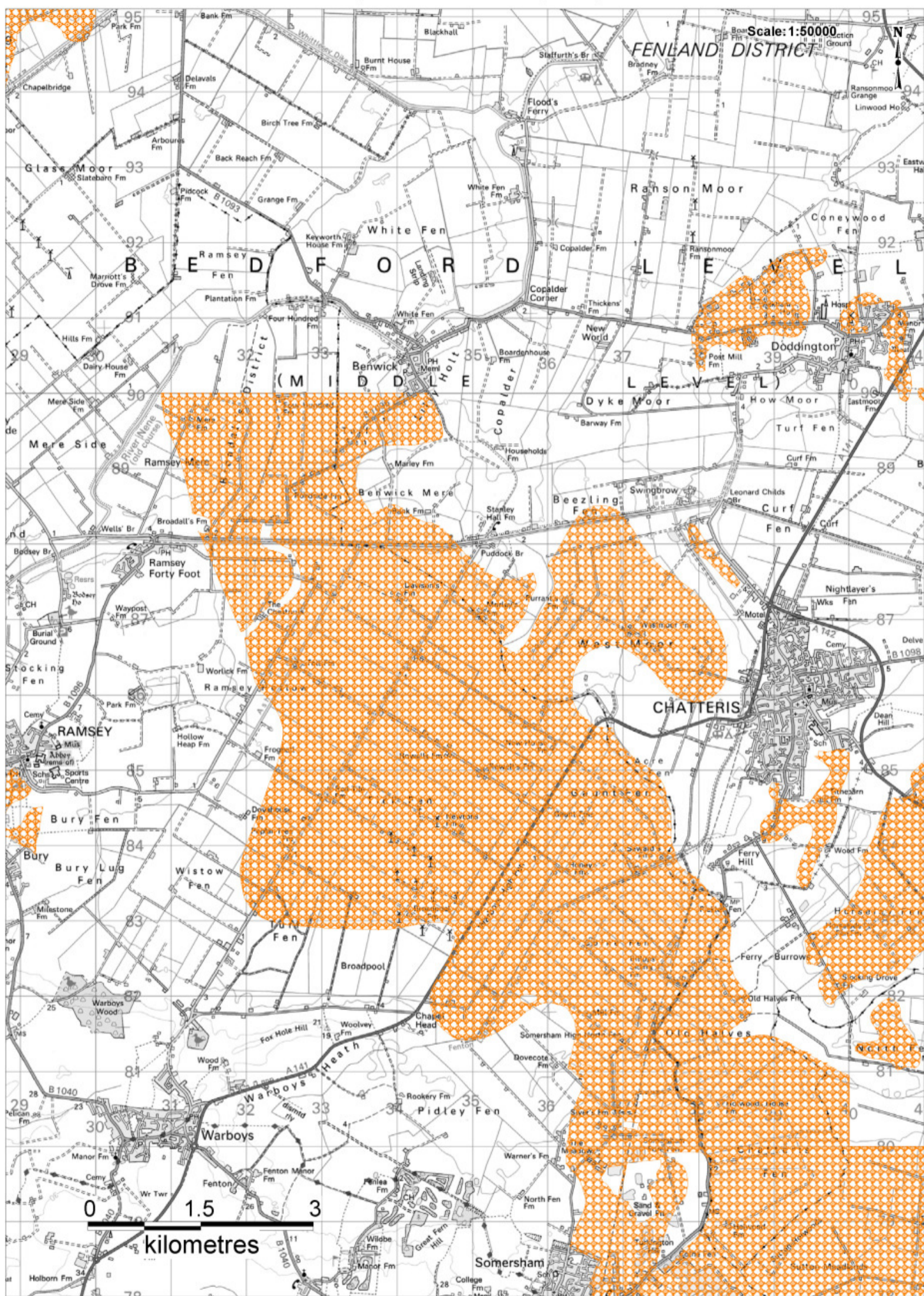
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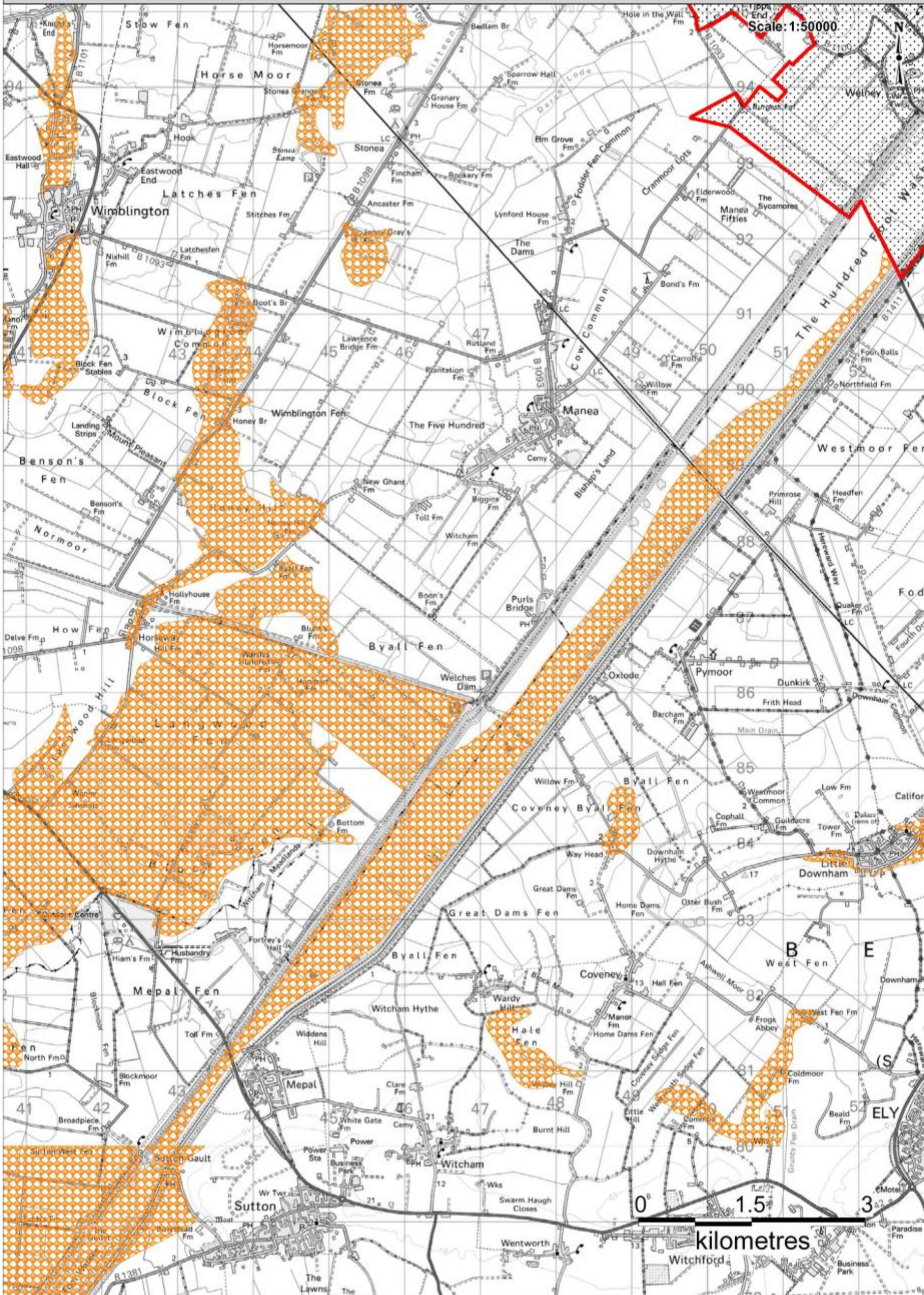


Map 7: Sand and Gravel Safeguarding



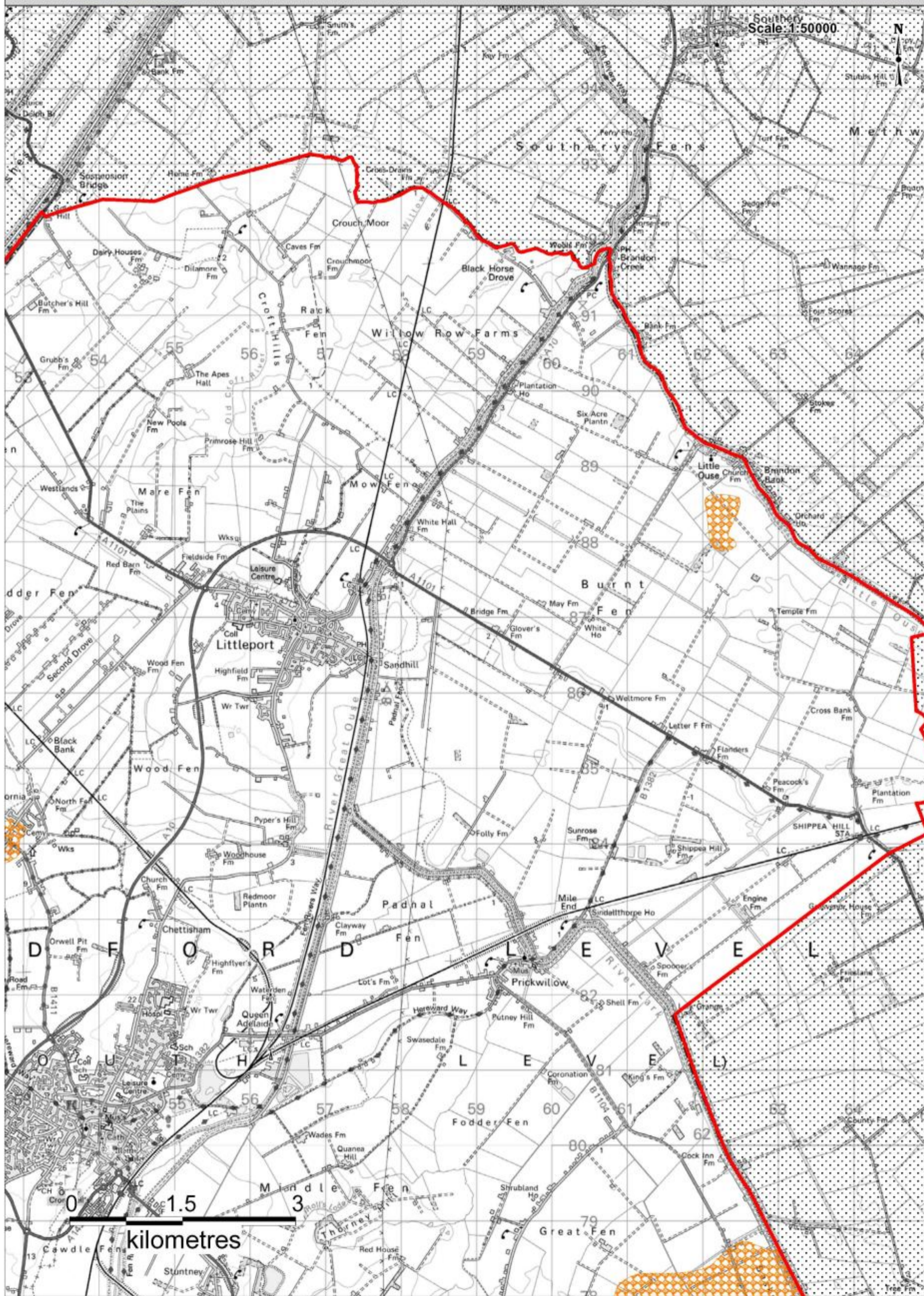
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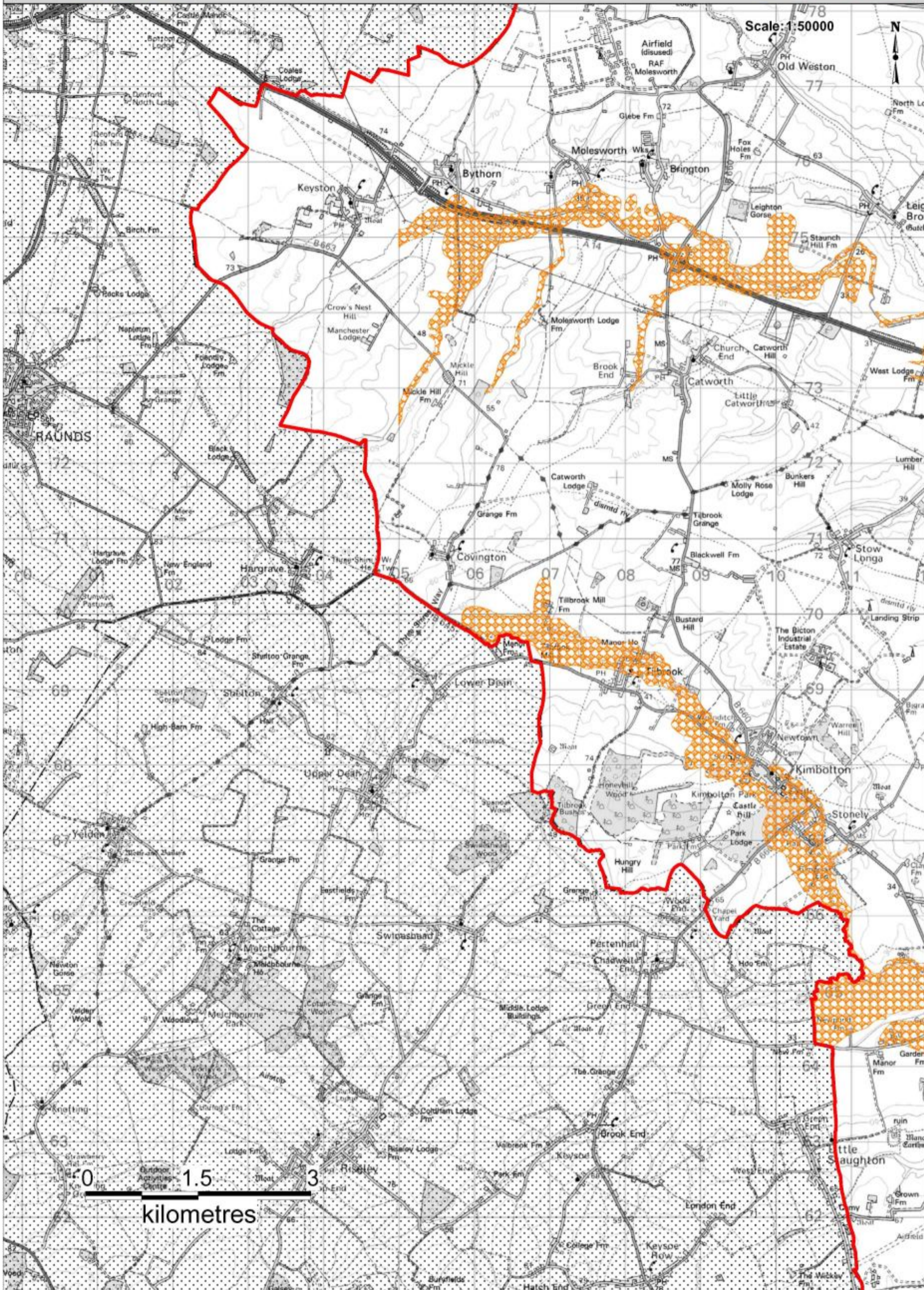
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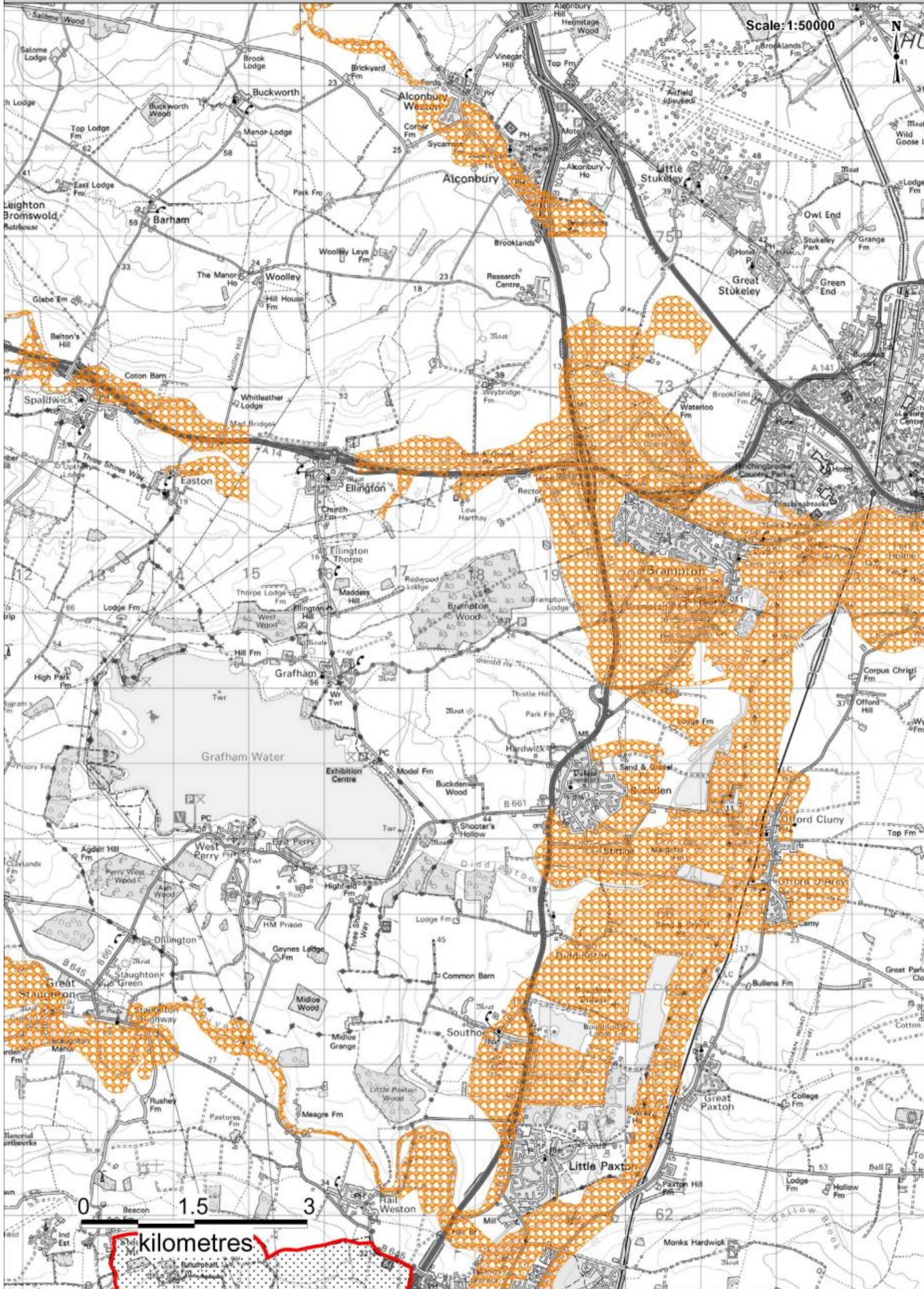
Map 9: Sand and Gravel Safeguarding

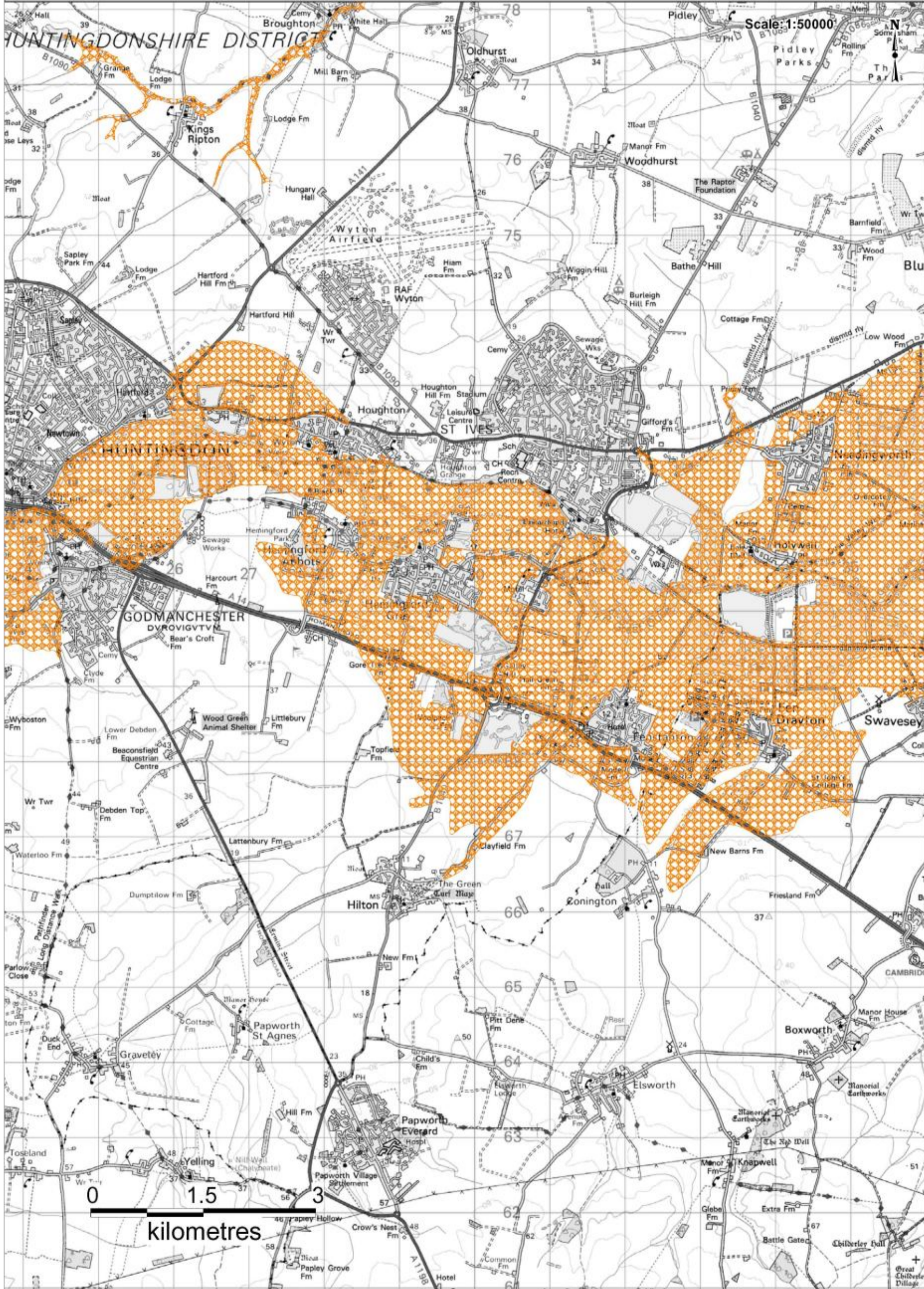






Map 11: Sand and Gravel Safeguarding

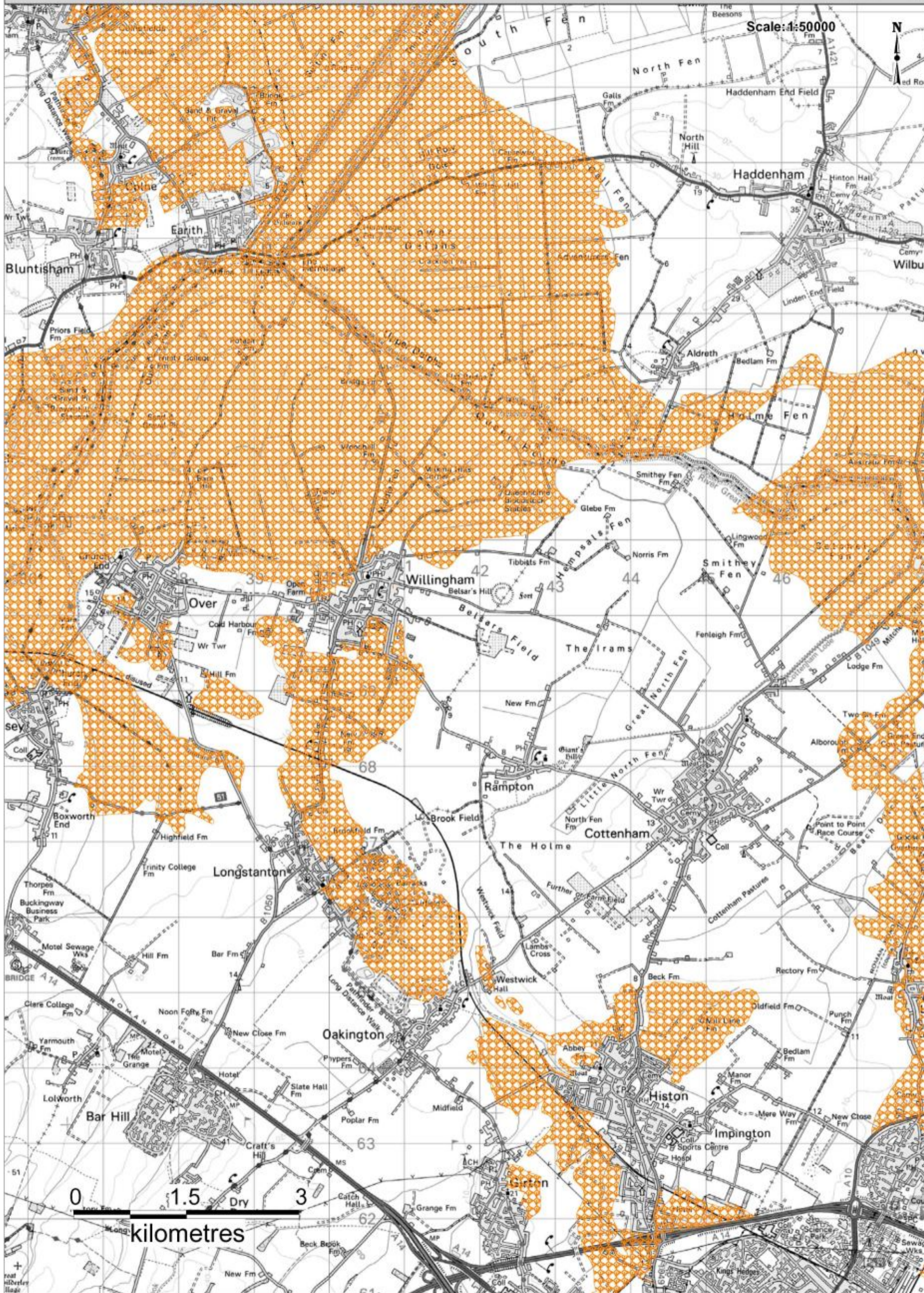
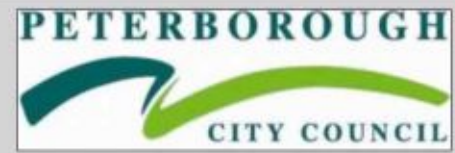




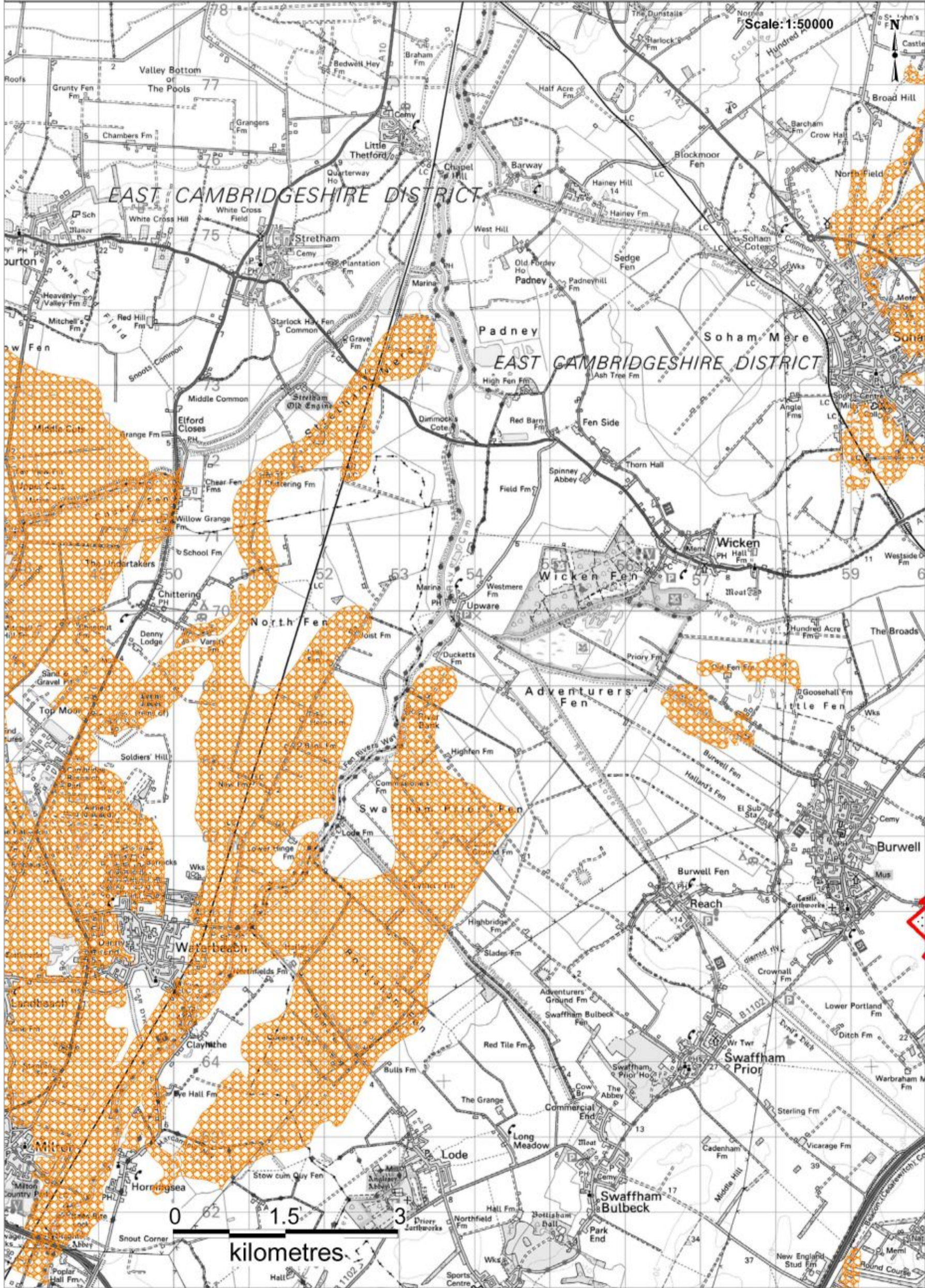
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Map 13: Sand and Gravel Safeguarding



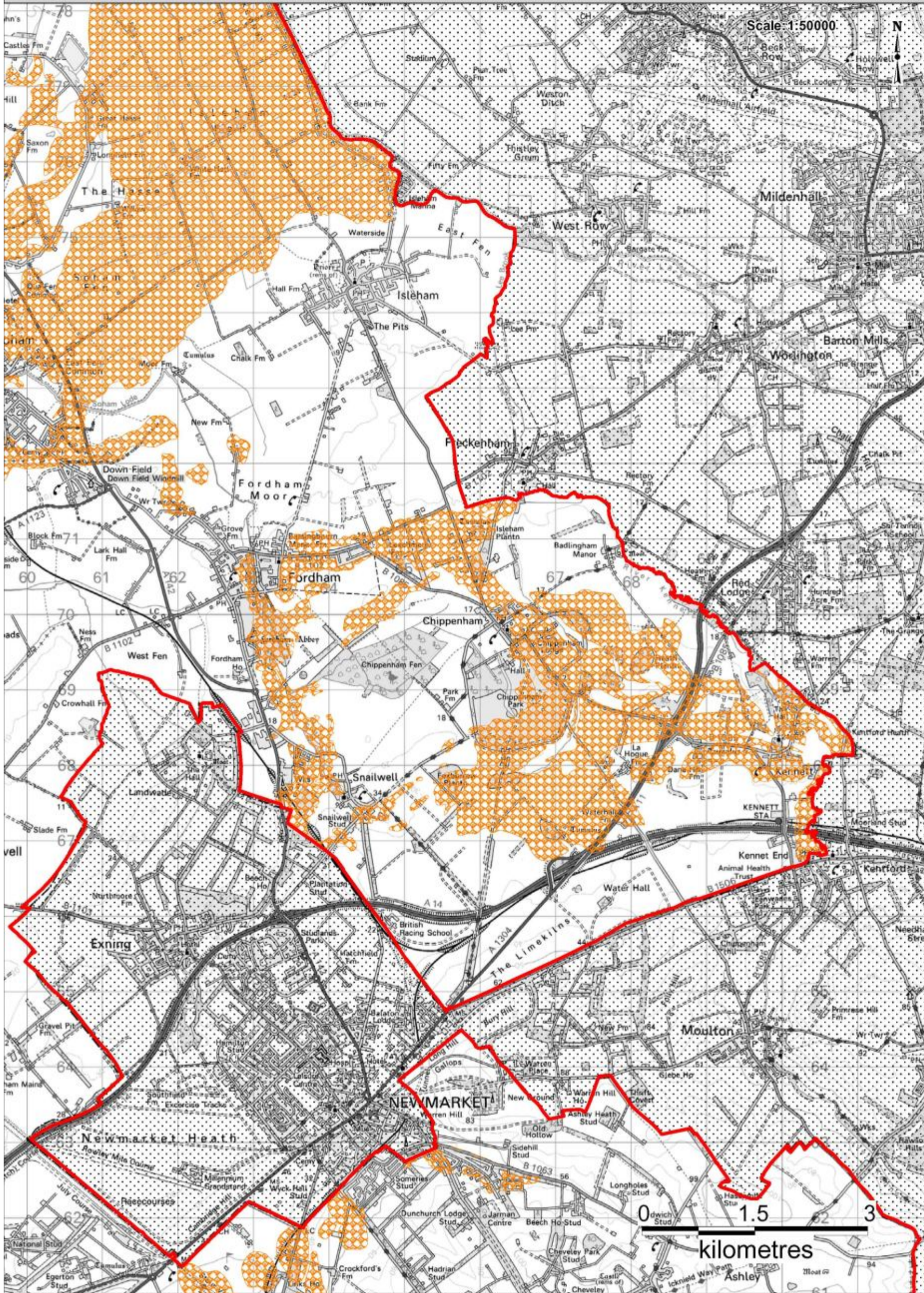




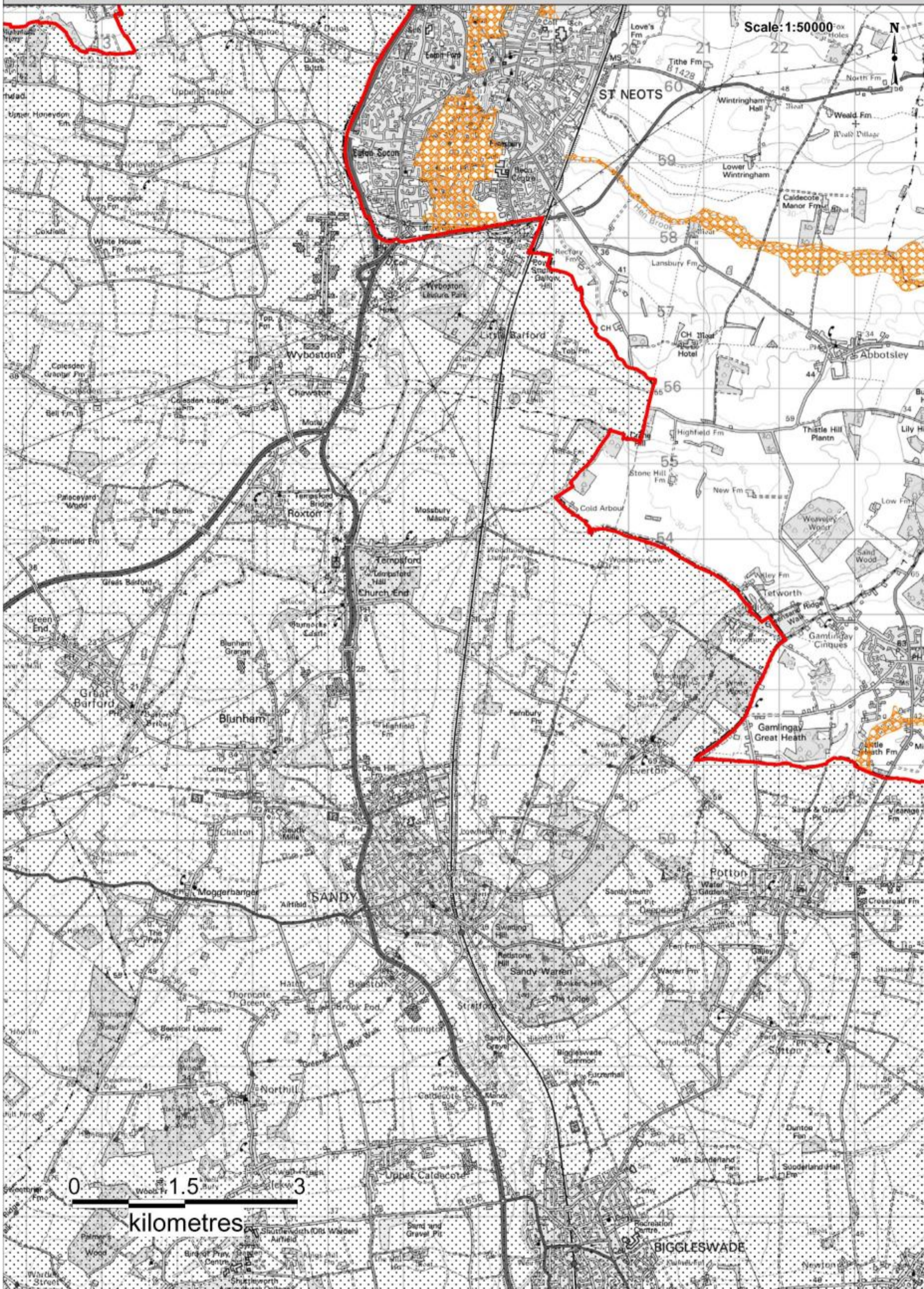
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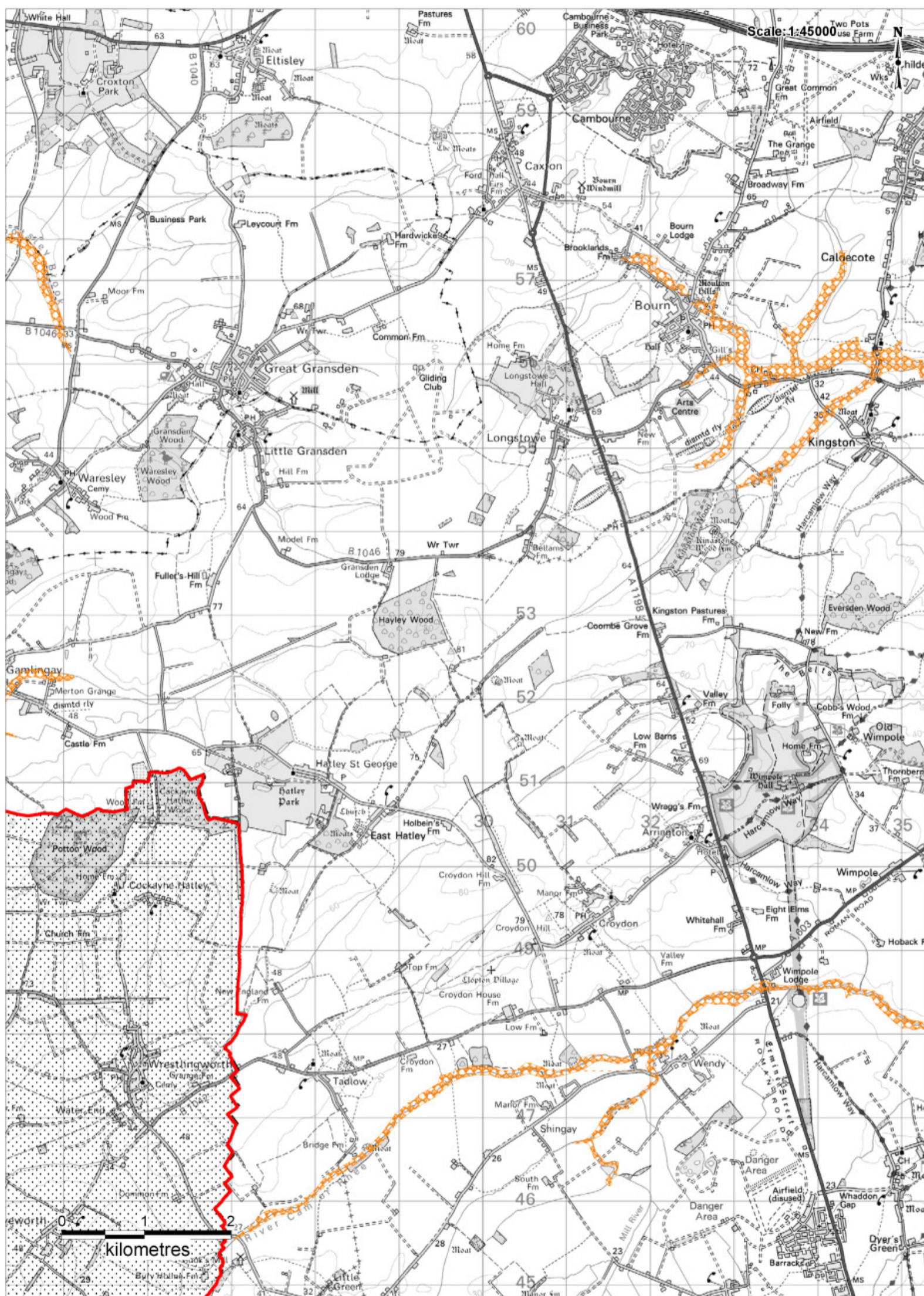
Map 15: Sand and Gravel Safeguarding



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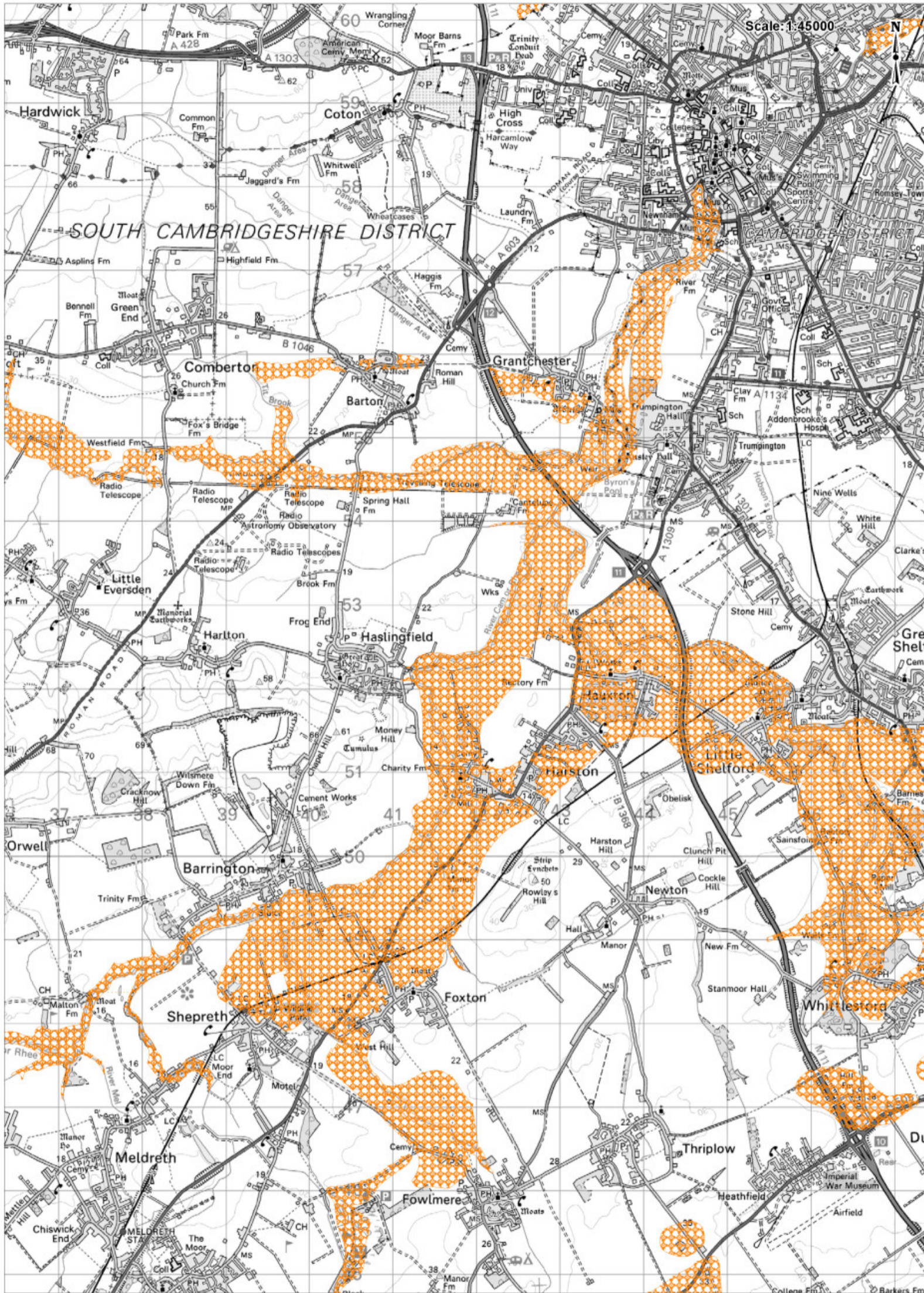
Map 17: Sand and Gravel Safeguarding



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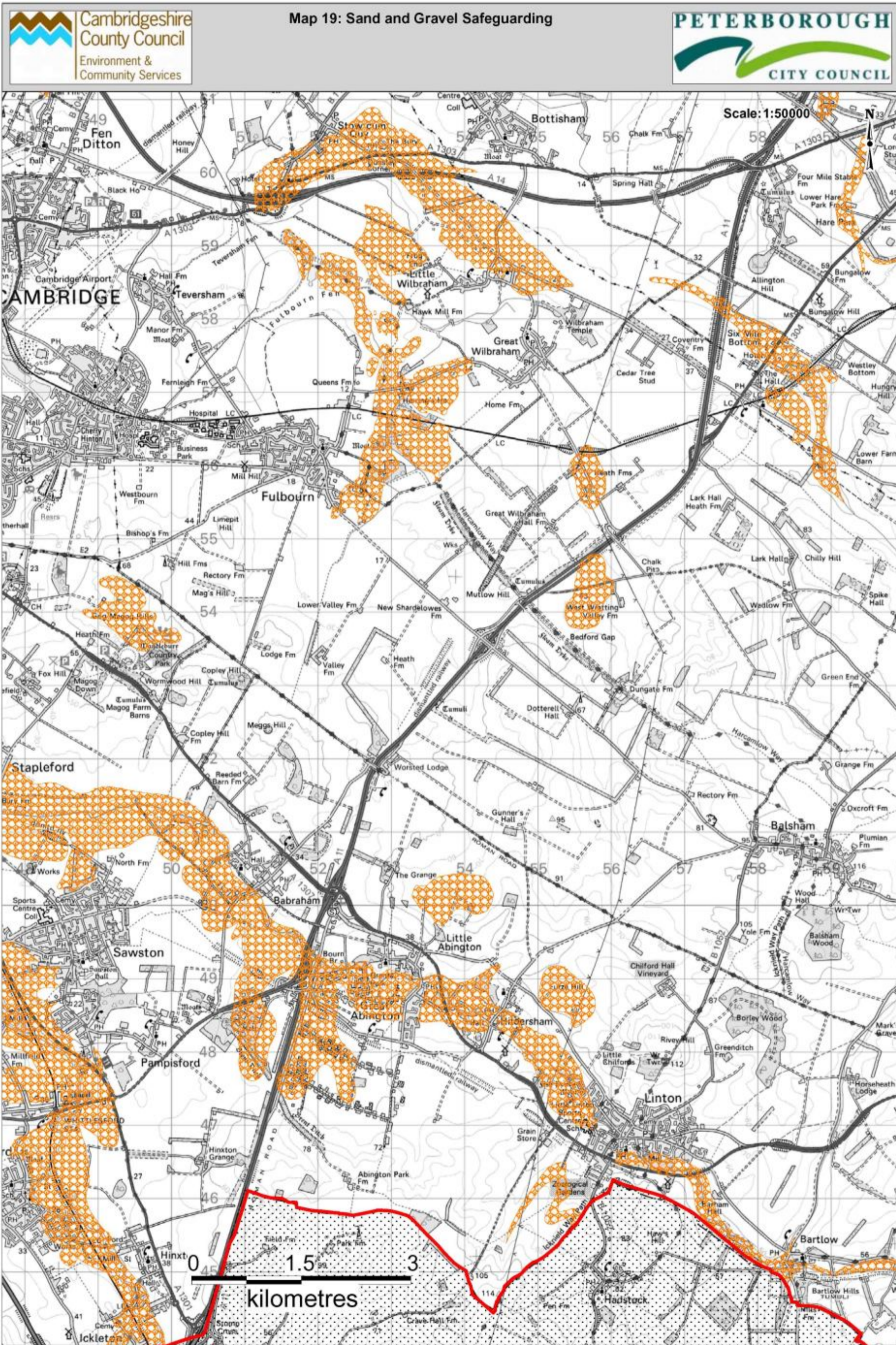
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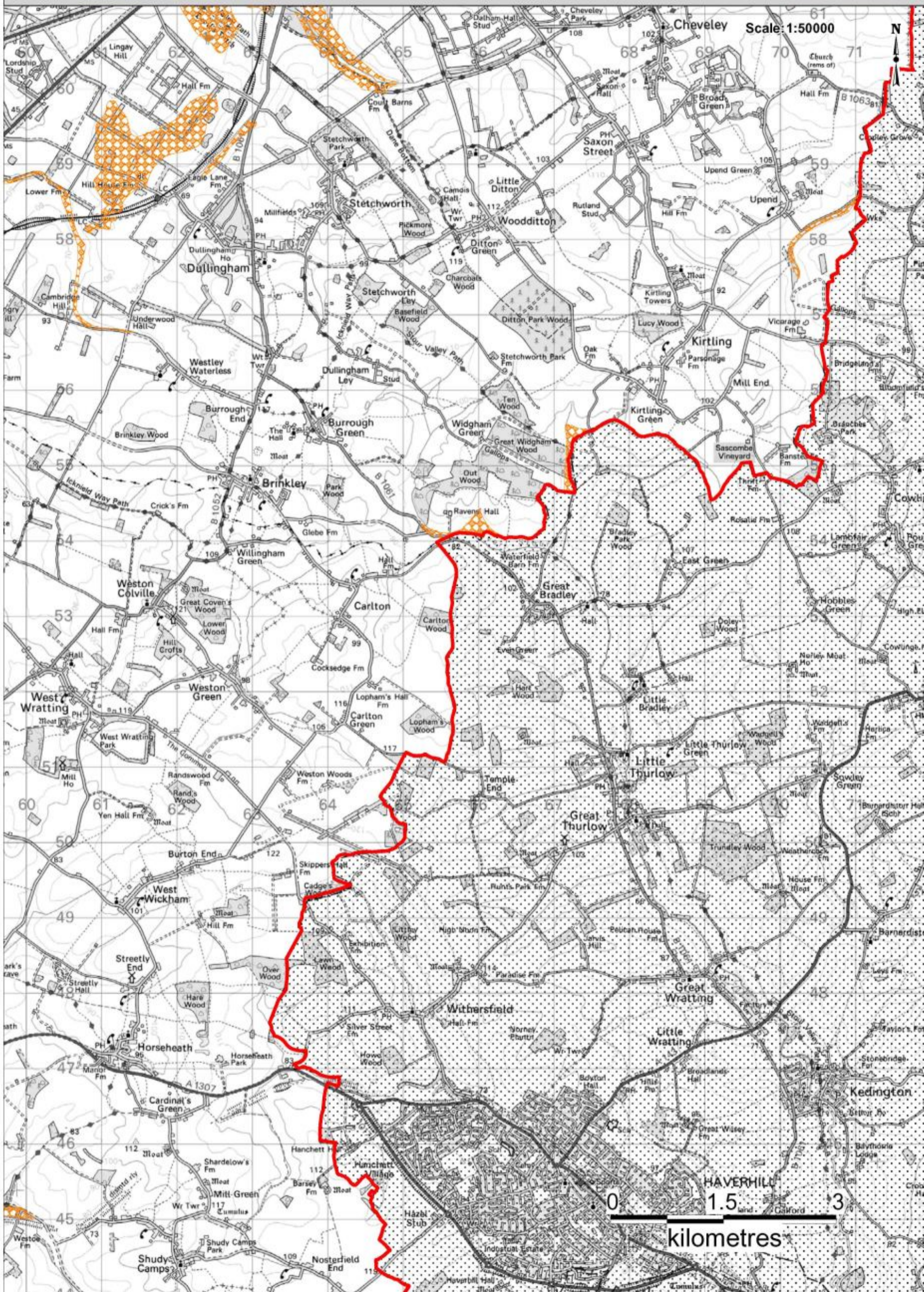
Map 18: Sand and Gravel Safeguarding



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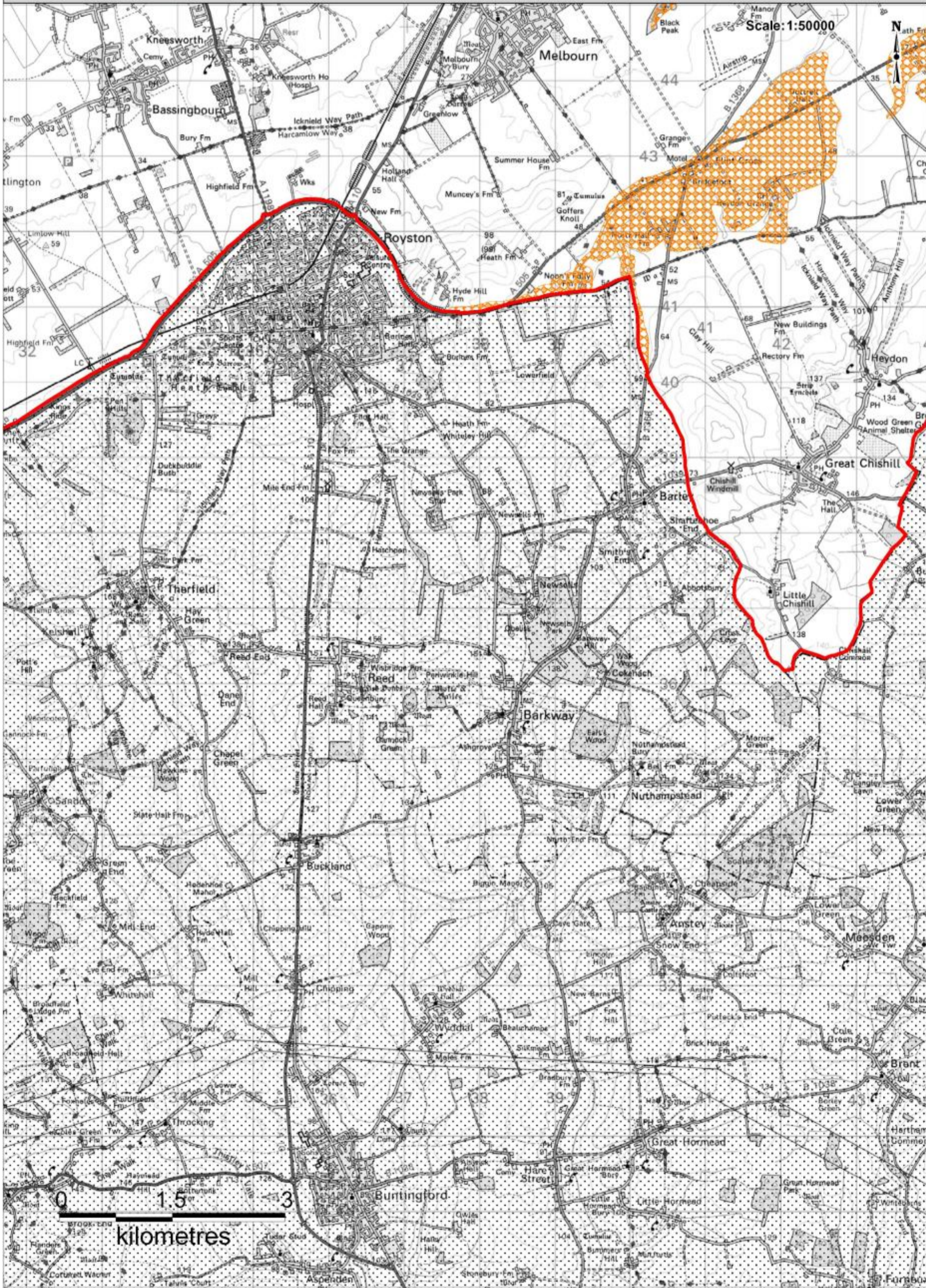
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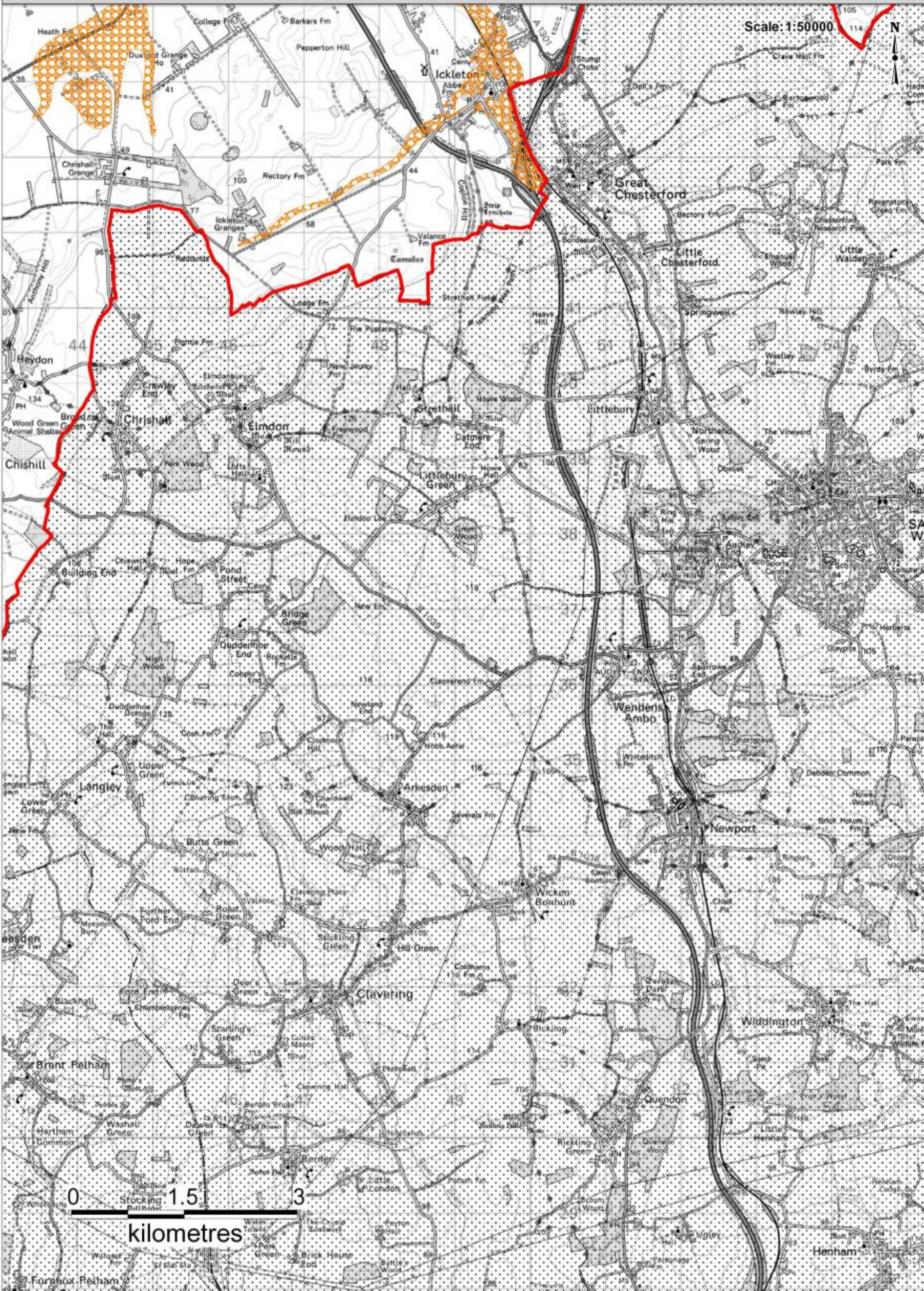




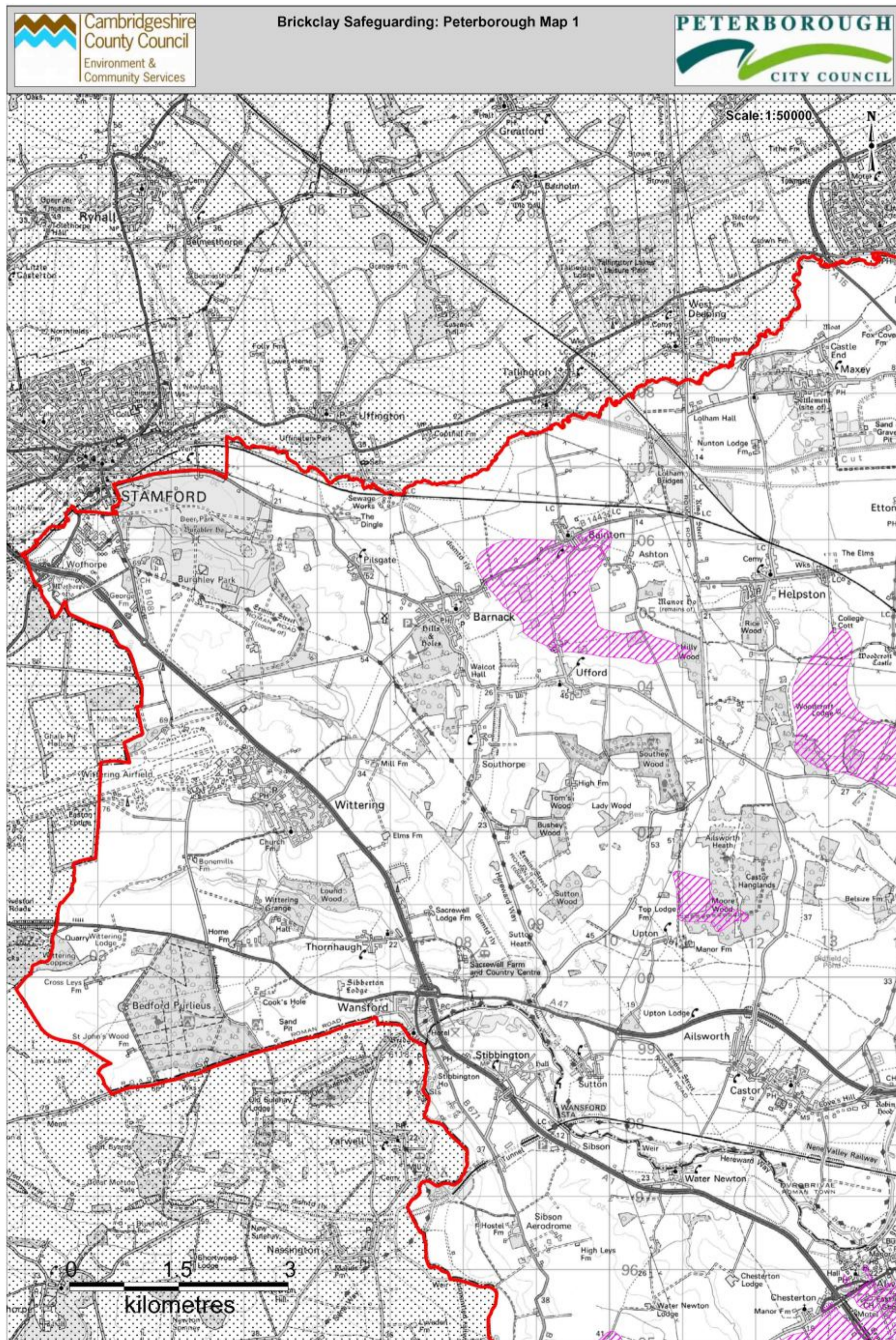
Map 21: Sand and Gravel Safeguarding

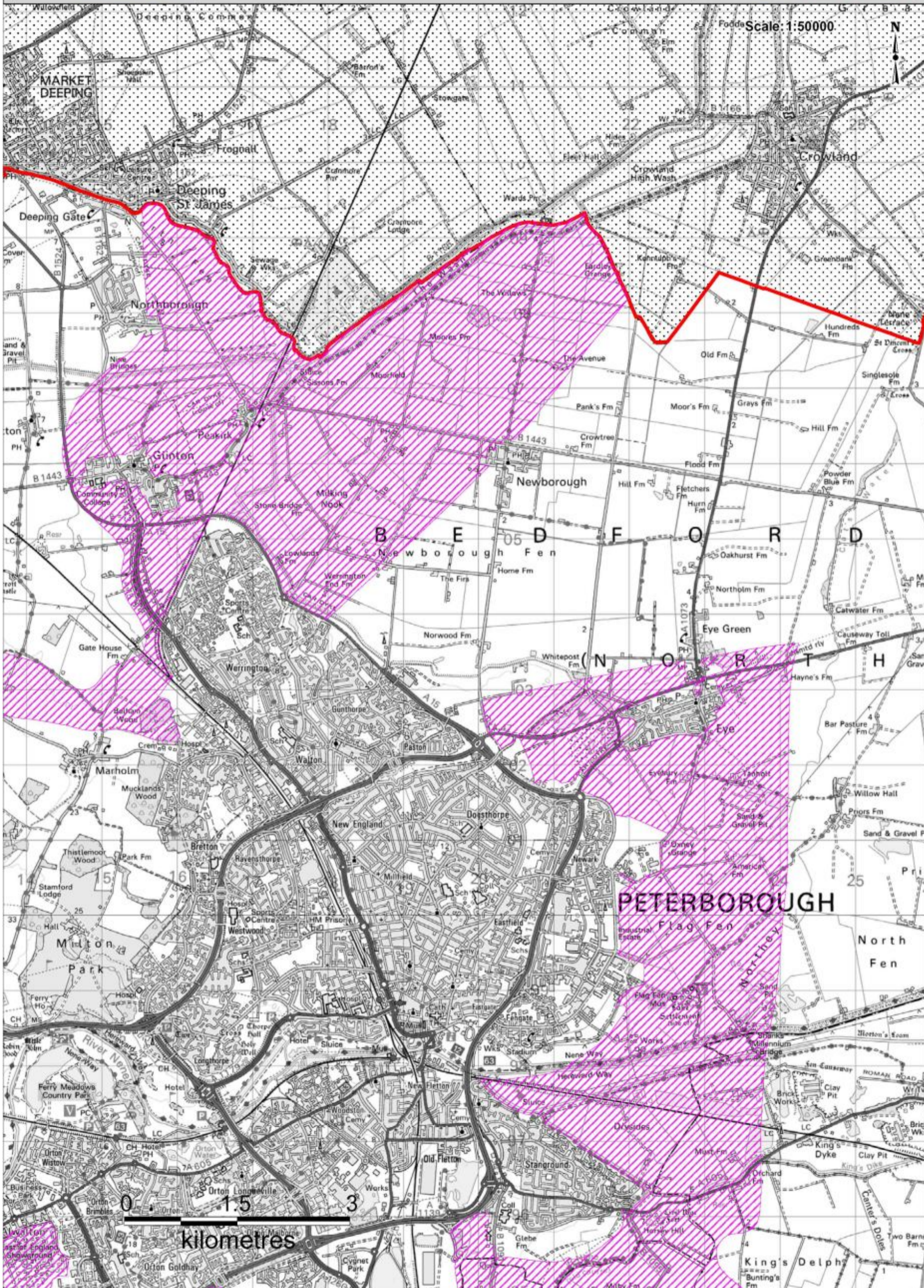






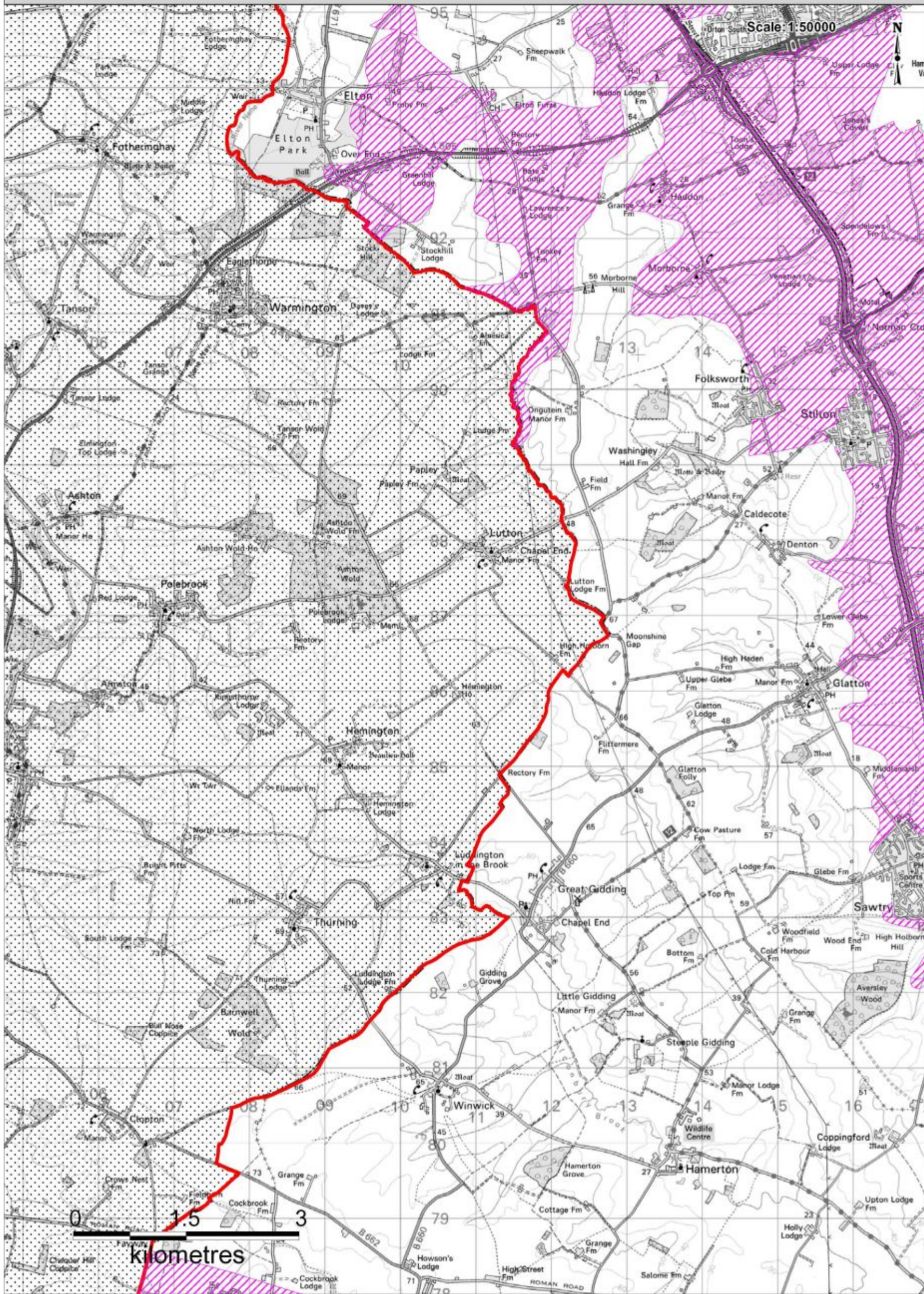
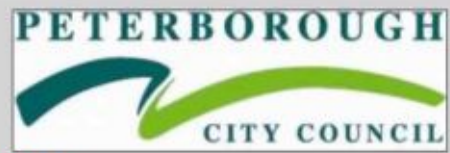
# 8 Brick Clay Safeguarding Areas





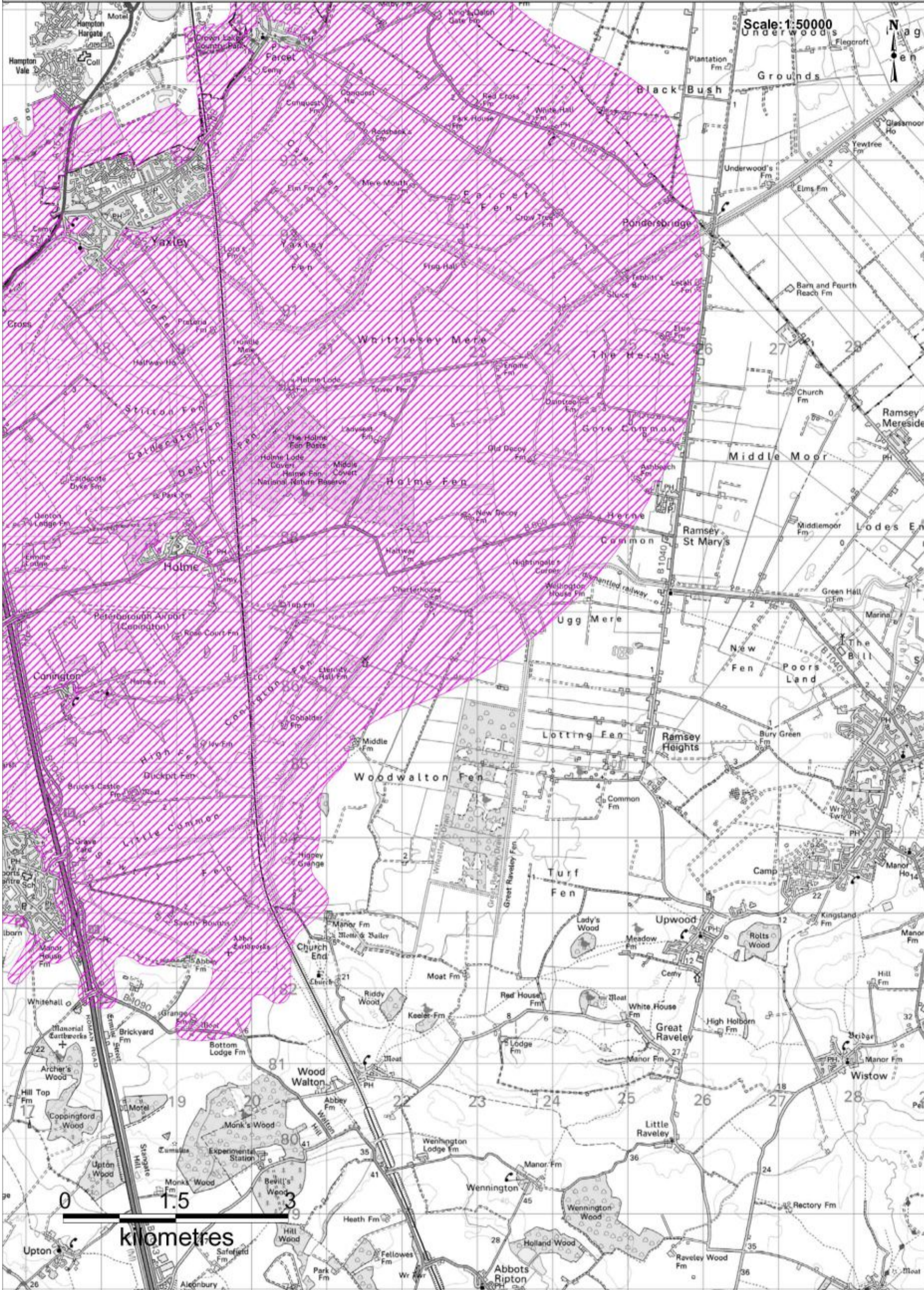


Brickclay Safeguarding: Peterborough Map 3



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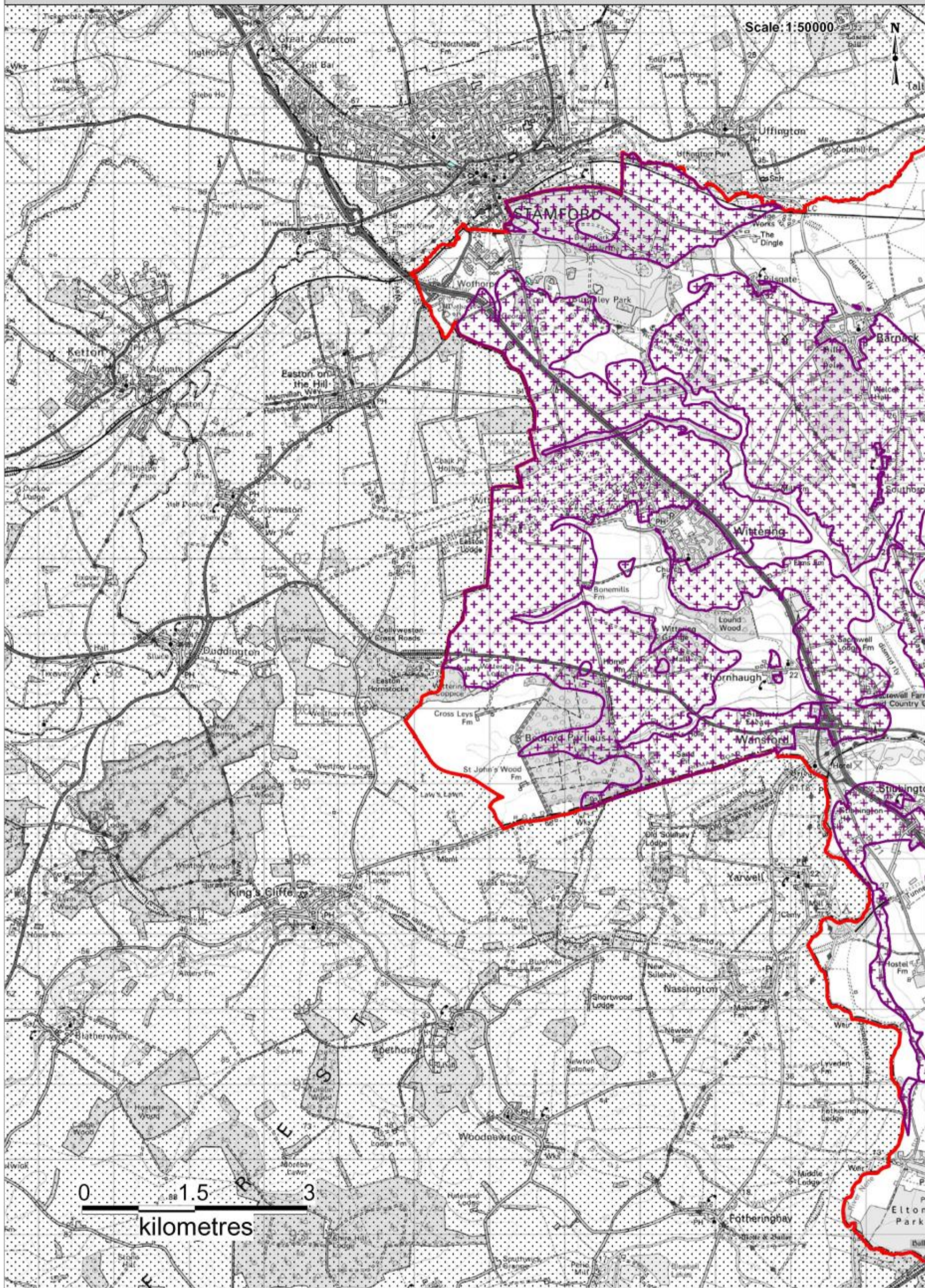
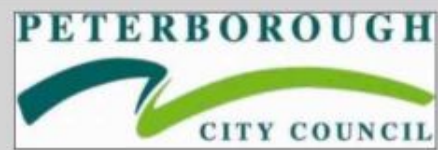
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# 9 Limestone Safeguarding Areas

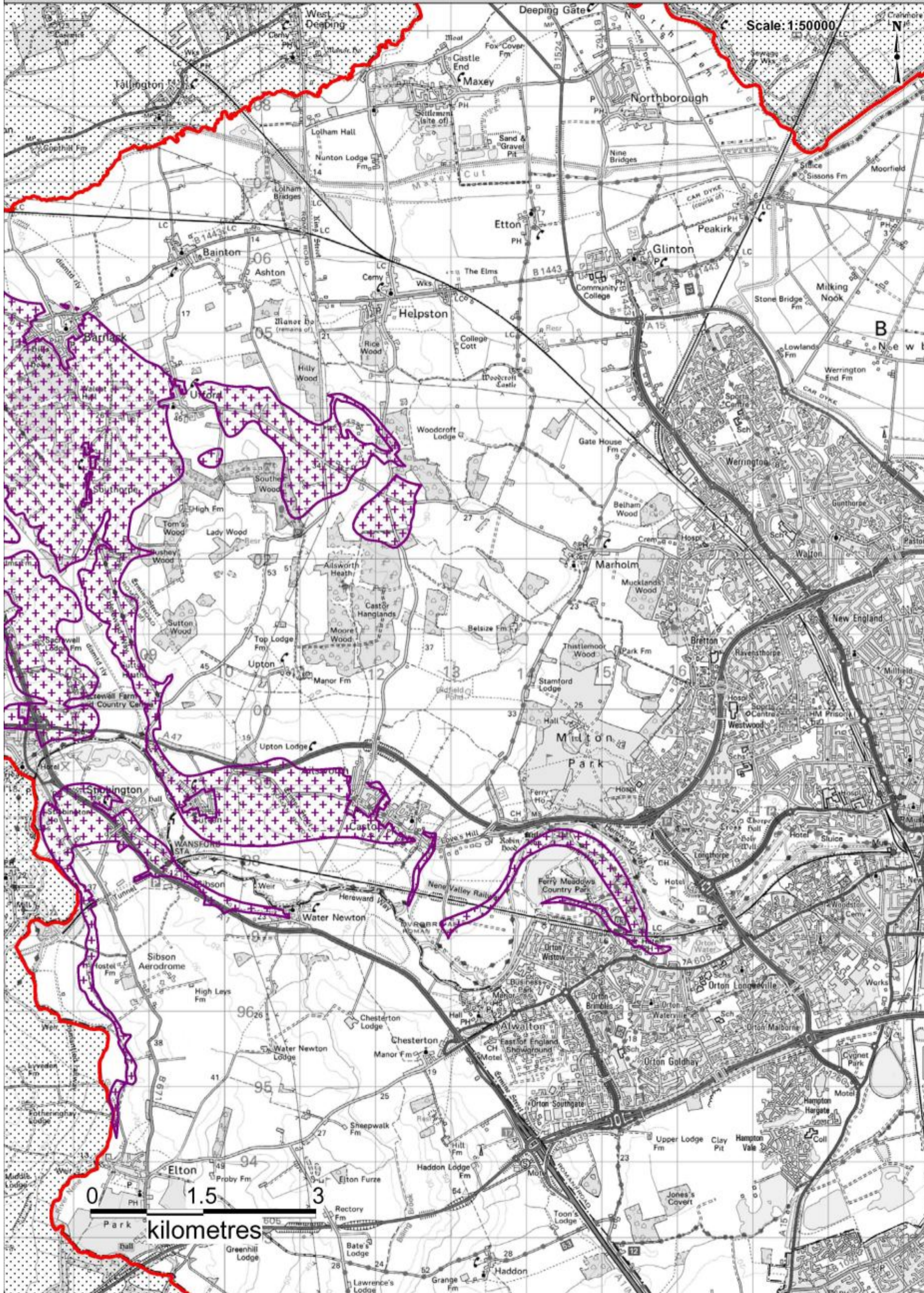


Limestone Safeguarding: Peterborough 1



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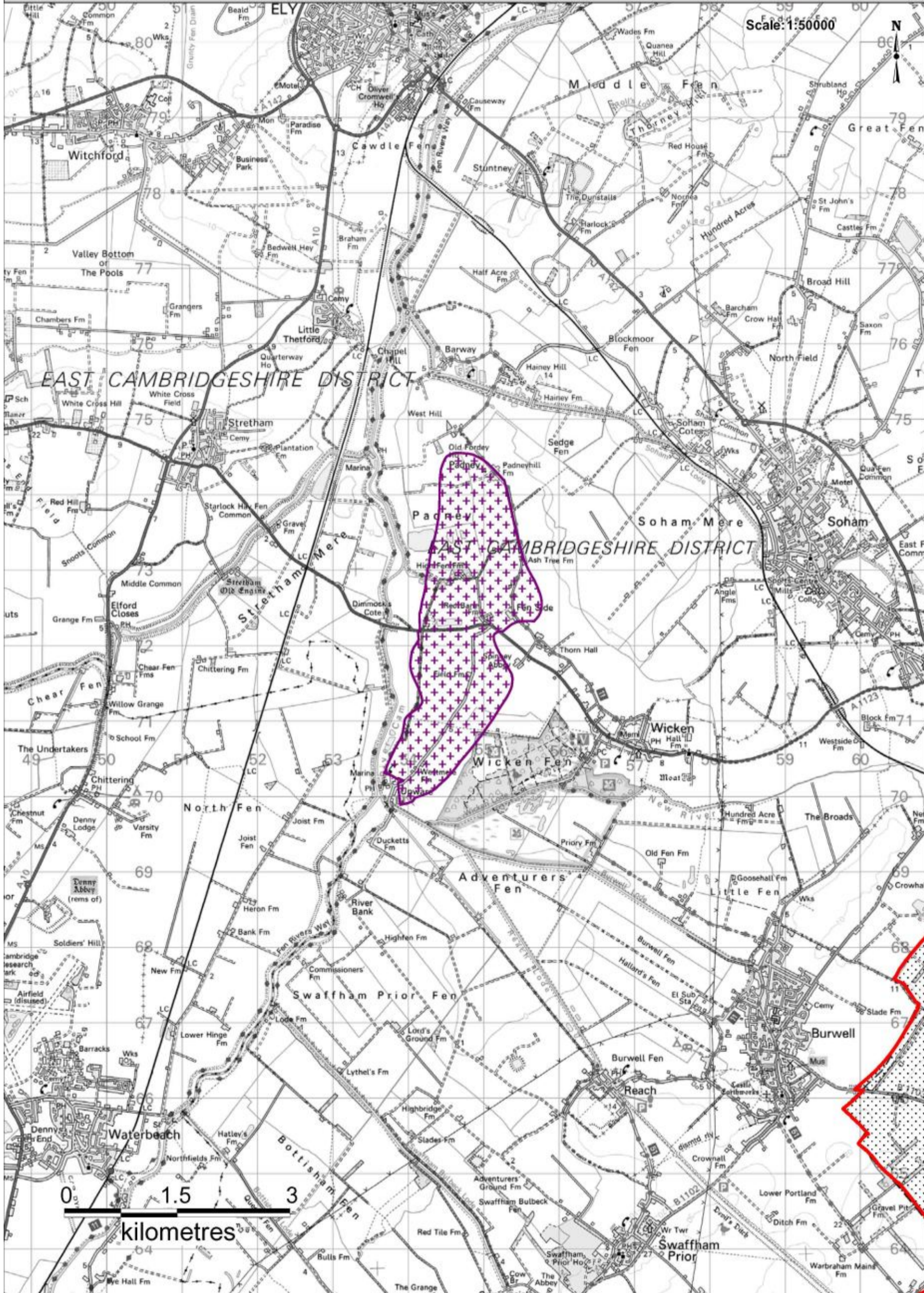
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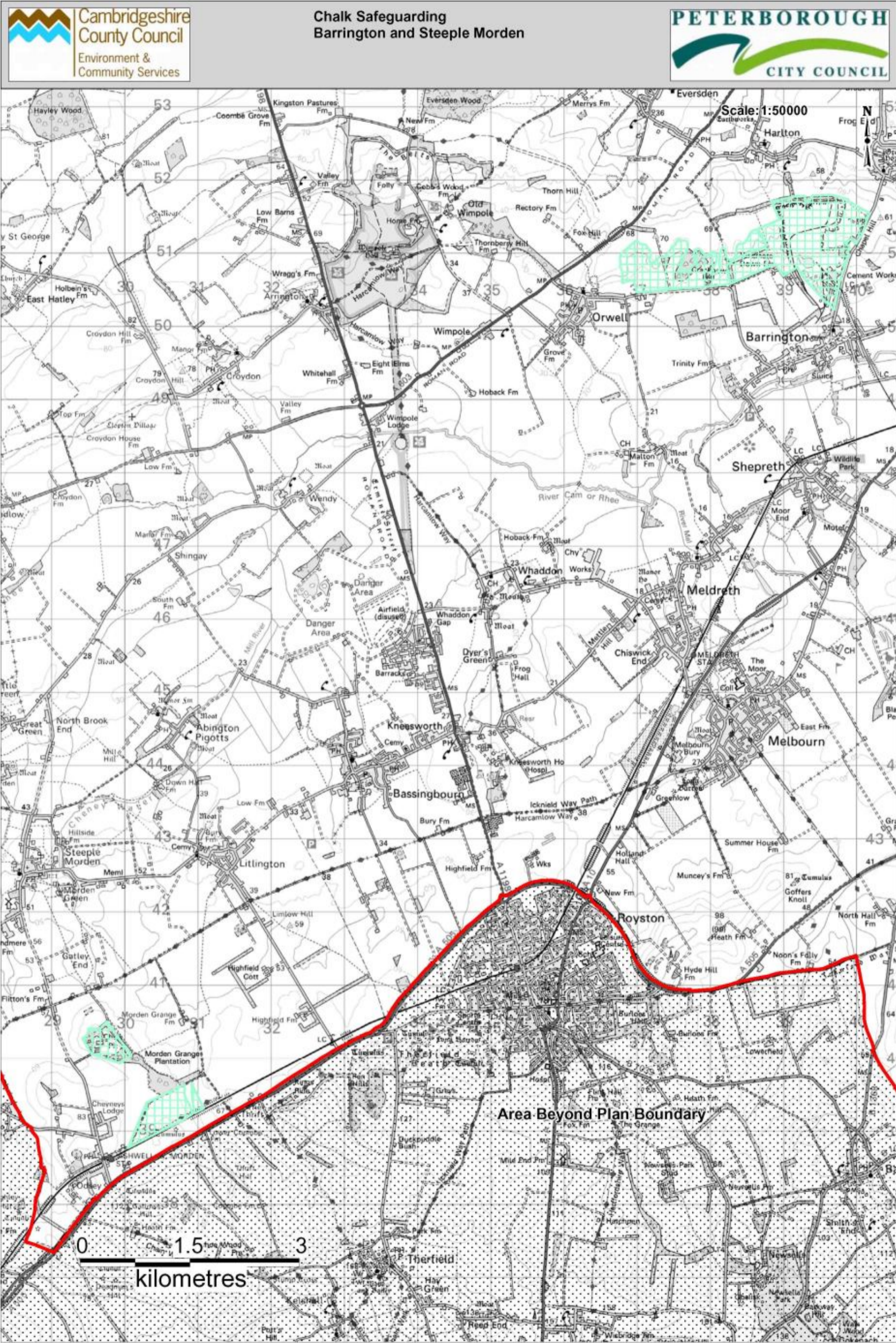
Limestone Safeguarding: Wicken



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# 10 Chalk Safeguarding Areas



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