DERBYSHIRE AND DERBY MINERALS LOCAL PLAN

Towards a Minerals Local Plan:

Winter 2021/2022 Consultation

Proposed Draft Plan

Background Paper
Spatial Overview

December 2021

DERBYSHIRE County Council

Derby City Council

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Spatial Overview of Derbyshire and Derby

1 Spatial Characteristics of Derbyshire and Derby

1.1 Introduction

1.1.1 In order to plan for delivering sustainable minerals development, it is important that the Councils are aware of the spatial economic, social and environmental characteristics of the Plan area, and particularly the characteristics of the minerals industry. The Plan area of Derbyshire and Derby[1] together with other key geographical features is illustrated on Figure 1.

1.1.2 The majority of the Plan area is governed via a two-tier authority system by the County Council and eight District/Borough councils; Amber Valley Borough, Bolsover District, Chesterfield Borough, Derbyshire Dales District, Erewash Borough, High Peak District, North East Derbyshire District and South Derbyshire District. In terms of planning, the County Council determines proposals for minerals and waste development and 'County Council' development such as schools, libraries and care homes in its area in its area whilst the district/borough councils determine all other development proposals. Derby City is a Unitary Authority and, as such, determines proposals for all development within its area.

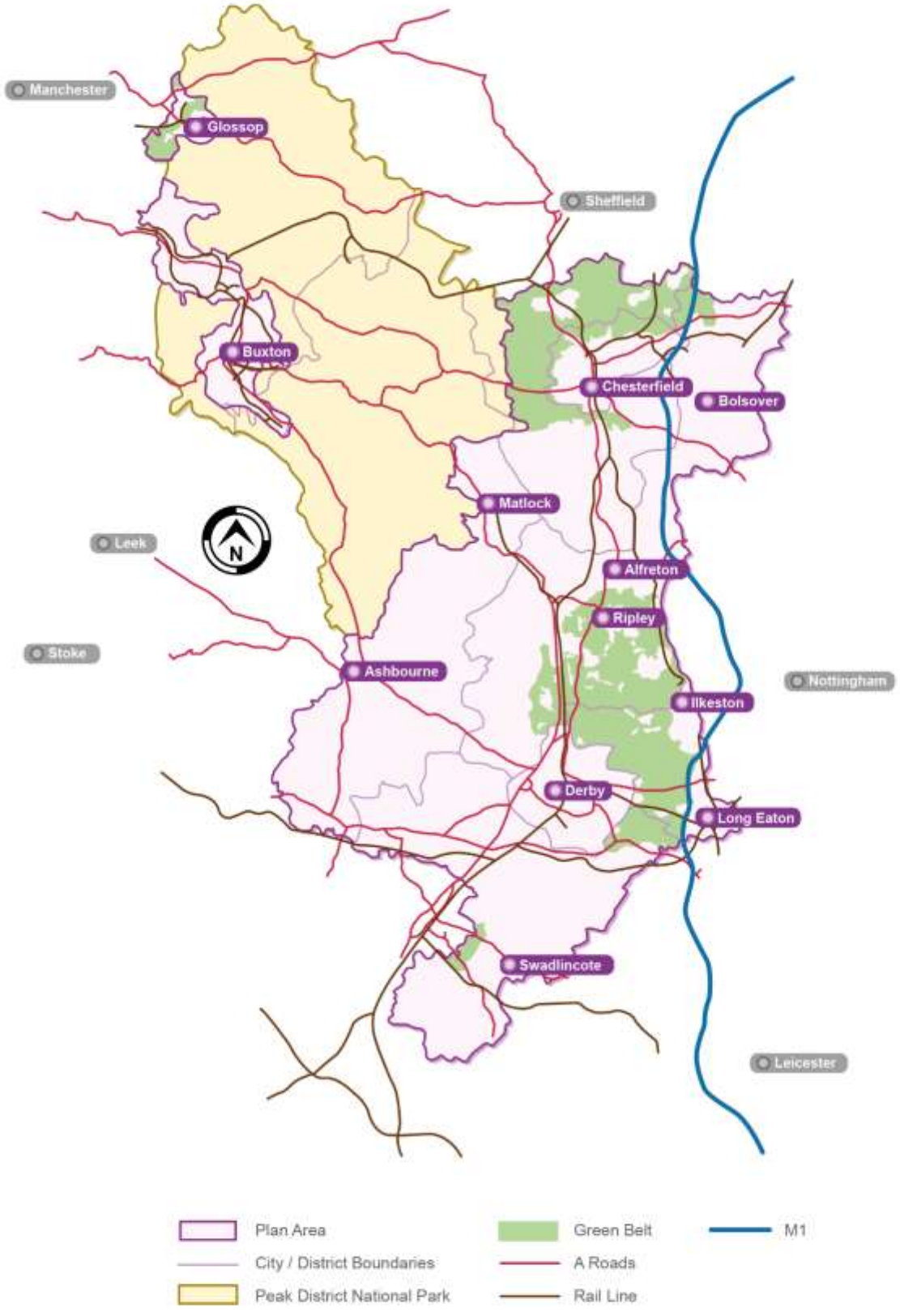
1.1.3 The Plan area is one of contrast. The western part, surrounding the Peak District National Park (PDNP), is mainly rural in character whilst the eastern part more urban in nature containing the majority of the main towns. Derby City, by far the largest urban area, lies in the south of the Plan area. The Plan area is characterised by market towns which include Glossop and Buxton in the north-west, Chesterfield and Bolsover in the north-east, Matlock, Alfreton, Ripley in the central area and Ashbourne, Ilkeston, Long Eaton and Swadlincote towards the south.

1.1.4 Derbyshire and Derby occupy a central location in England at the northern most point of the East Midlands region. The Plan area lies close to the city of Nottingham and the other urban conurbations of Greater Manchester, South Yorkshire and the West Midlands, which have a significant influence on the local economy and are important markets for many of the Plan area's minerals.

[1] Derbyshire and Derby refers to the geographical area of Derbyshire excluding that part of the county which lies within the PDNP

1.1.5 Figure 1 depicts several green belt areas established to prevent coalescence with neighbouring cities such as Manchester, Sheffield, Nottingham, Burton-on-Trent; to prevent the urban sprawl of the largest settlements area, namely Derby and Chesterfield, and to demarcate the individual smaller market towns.

Figure 1: Plan Area and Key Geographical Features



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1.2 Population and Households

1.2.1 Derbyshire's[2] estimated population in 2019 was approximately 1.05 million people with around 0.25 million living in Derby City[3] and 0.8 million living in the rest of Derbyshire[4]. Figure 2 below sets out a breakdown of the age of the population and comparisons with the East Midlands and England. Derbyshire displays an older population than Derby City, the East Midlands and England, whilst Derby City a younger population. An above average elderly population may be important when looking at the health impacts of mineral working.

Figure 2: Population estimates for Derbyshire, Derby, East Midlands and England

	Figures in Percentages			
Age Group	**Derbyshire**	**Derby**	**East Midlands**	**England**
0-15	17	21	19	19
16-64	61	63	62	63
65+	22	16	19	18
Total	100	100	100	100

Source ONS Mid 2019 Population estimates

1.2.2 The latest ONS Population Projections (2019 based) predict that by 2041 Derbyshire's population will increase by 11% whilst Derby City's population will increase by 10%. Estimates for the East Midlands and England also predict a 10% growth in population. Growth is planned particularly for South Derbyshire where the population is estimated to grow by 28% over the same period. In 2019, 22% of people in Derbyshire were aged 65 and over and by 2041 this is predicted to increase to 27%.[5] In Derby City, 16% of people were aged 65 and over in 2019 and by 2041 this is predicted to increase to 22%.[6]

[2] Derbyshire refers to the geographical county of Derbyshire including the PDNP
[3] The administrative area of Derby City Council
[4] The administrative area of Derbyshire County Council
[5] ONS 2019 based subnational population projections (Derbyshire County Council Observatory) https://observatory.derbyshire.gov.uk/
[6] Source Derby City Council https://info4derby.derby.gov.uk

1.2.3 In 2017, there were 347,224 households in Derbyshire (not including Derby City). This number is expected to increase by 18% to 413,575 in 2043. Figures for Derby City estimate an 11% increase over the same period from 104,123 to 115,806. Percentage increases for households in the East Midlands and England are 20% and 16% respectively.

1.3 Economic and Social Conditions

1.3.1 Derbyshire and Derby has a diverse and thriving economy. Its central location means that residents and businesses contribute to and benefit from neighbouring economies, particularly those of Manchester, Nottingham and Sheffield. At September 2020 the percentage of 16 to 64 year olds in employment was 80% in Derbyshire, 78% in Derby compared to 76% for the East Midlands and England.[7] Unemployment has risen sharply following the Covid-19 outbreak, in January 2021 Derbyshire's unemployment rate was 4.4% compared to Derby City's 7.5%, the average for England was 6.3%.[8]

1.3.2 The employment profile of Derbyshire and Derby differs from that of England in that manufacturing remains an important sector in both the City and the rest of the County; in 2019 it accounted for 6.9% of employment in Derby and 8.4% in Derbyshire compared to the national average for England of 5.4% and 7.1% for the East Midlands.[9] Another notable difference in Derby City is the Professional, Scientific and Technical sector, which accounts for 16.5% of employment close to the average for England 17.5%. The figure for the rest of Derbyshire and the East Midlands is much lower at 13.5% and 13.6% respectively.[10]

1.3.3 Whilst there are no separate figures available for employment in the mining and quarrying industry for the Plan area, it is known to be insignificant in Derby City and has declined considerably in Derbyshire following the demise of the coal industry.

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[7] Source Derby City Council https://info4derby.derby.gov.uk and Derbyshire County Council https://observatory.derbyshire.gov.uk

[8] Source Derbyshire County Council https://observatory.derbyshire.gov.uk

[9] Manufacturing is included in the sector 'Production' which includes mining, quarrying and utilities Source Derby City Council https://info4derby.derby.gov.uk and Derbyshire County Council https://observatory.derbyshire.gov.uk

[10] Source Derby City Council https://info4derby.derby.gov.uk and Derbyshire County Council https://observatory.derbyshire.gov.uk

Nevertheless, nationally Derbyshire remains an important leader in the supply of aggregate and industrial minerals and employs an above average number of employees in this sector. From the information available , a study[11] undertaken in 2017 estimated that in High Peak and Derbyshire Dales, (where most of the limestone quarries are located), there were 925 (full time equivalent (FTE) jobs) in the mining and quarrying sector, accounting for 82% of Derbyshire's workforce in that sector and 5.4% of national jobs in that sector. The study further estimated that the sector supports an additional 1,437 FTE jobs across those two district council areas. These districts are predominantly rural areas where employment opportunities can be scarce.

1.3.4 In terms of deprivation, there are sharp contrasts between different parts of the Plan area. The index of multiple deprivation measures deprivation based on eight factors: Income, Employment, Health and Disability, Education Skills and Training, Crime, Barriers to Housing and Services and Living Environment at a small neighbourhood level called 'lower super output areas' (LSOAs) which have an average of 650 households. Results published in 2019 show that 16% of Derby's LSOAs were in the top 10% of Country's deprived areas compared to 4.5% for Derbyshire. However, within Derbyshire, some Districts including Chesterfield (8.7%) and Erewash (5.5%) are above the County average. Also Bolsover (parts of Bolsover and Shirebrook), High Peak (parts of Gamesley), and Amber Valley (parts of Ironville, Riddings and Langley Mill) have LSOAs within the most deprived 10%. Derbyshire Dales and North East Derbyshire have one of their LSOAs in the most deprived 10%, whilst South Derbyshire has none. [12]

1.3.5 Further statistical information about the demographic and socio-economic characteristics of Derbyshire can be found on the County Councils' website at https://observatory.derbyshire.gov.uk

1.3.6 Further statistical information about the demographic and socio-economic characteristics of Derby City can be found on the City Councils' website at https://info4derby.derby.gov.uk

[11] Minerals Extraction in High Peak and Derbyshire Dales: A Sector Benefits Study 2017
[12] Source Derby City Council https://info4derby.derby.gov.uk and Derbyshire County Council https://observatory.derbyshire.gov.uk

1.4 Transport

1.4.1 The Plan area, depicted on Figure 2, is located centrally within England and has a good strategic road network which provides important links to the large neighbouring conurbations and other areas of the country. North-south routes are provided via the M1, the A38 and the A61. The A50 links to the M6 to the west and the A42 to the M5.

1.4.2 In 2019, 79% of domestic UK freight transport was by road, 9% by rail and 13% by water.[13] A significant issue in the Plan area in relation to transporting minerals is the impact of heavy good vehicles on local communities and other road users. In some areas, heavy goods vehicles can account for up to 25% of traffic[14]. High volume long-life limestone aggregates quarries are the only ones currently transporting mineral by rail and this is likely to remain the case in the foreseeable future. However, the use of rail continues to increase and in 2019 approximately 50% of limestone aggregate was transported by rail. Three aggregate limestone quarries are currently rail linked and a further two permitted quarries are anticipated to recommence production in the near future with the intention of using rail to transport mineral.

1.4.3 In terms of air quality, a number of areas suffer from excessive air pollution, mainly associated with traffic, and within the Plan area as shown on Figure 3, nine areas are covered by Air Quality Management Areas (AQMAs) where air quality is in need of improvement. These are in Derby (2), Bolsover (3) Erewash (2), Derbyshire Dales (1) and Chesterfield (1).[15] A further one is proposed for the A61, A617 and A619 corridors through Chesterfield. [16] An additional Government initiative aimed at improving air quality associated with traffic pollution is the identification of zones which are in exceedance (non-compliance) of EU limit values for annual average Nitrogen dioxides (NO^2). Derby has been identified as a location of NO^2 non-compliance within the East Midlands zone and is required to implement a Clean Air Zone (CAZ) to improve air quality in the shortest possible time.

[13] Department of Transport Freight Statistics 2019 (table TSGB043)
[14] Derbyshire Local Transport Plan 2011-2026.
[15] Derbyshire and Derby Minerals Local Plan Strategic Transport Assessment Stage One 2021
[16] DEFRA Air Quality Management Areas

Figure 2: Principal Transport Networks

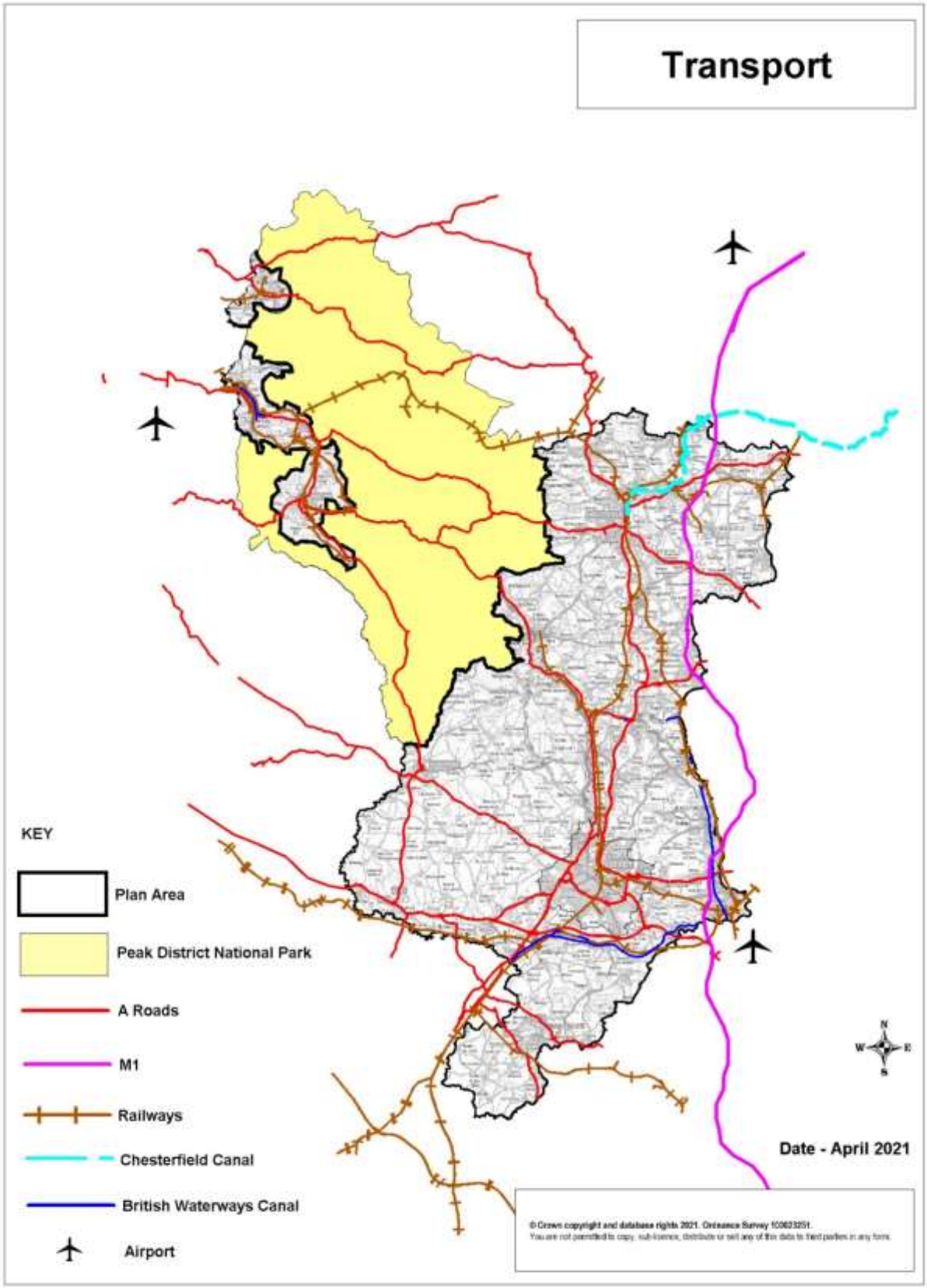

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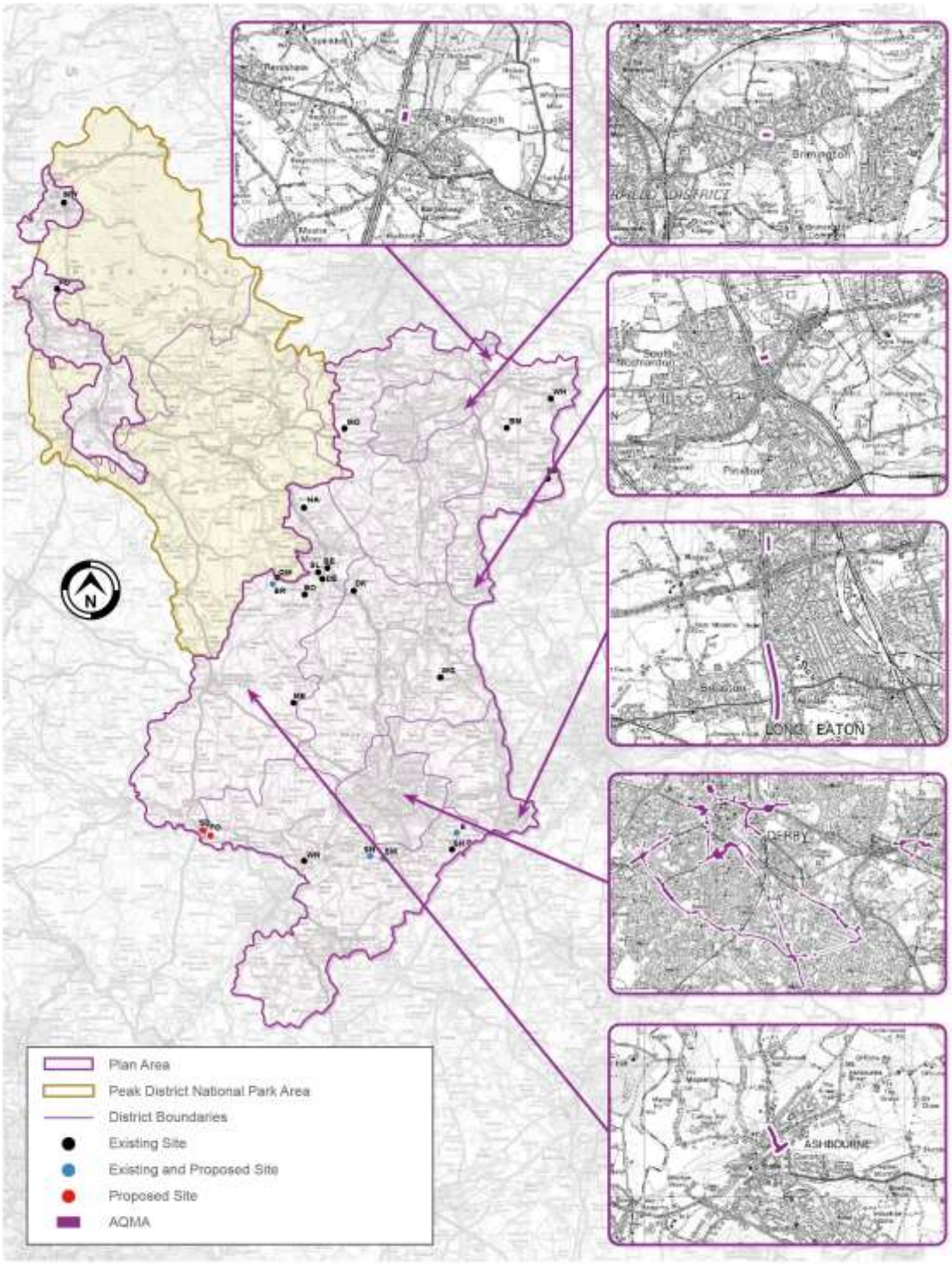
Figure 3: Air Quality Management Areas



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Source: Derbyshire and Derby Minerals Local Plan Strategic Transport Assessment (Stage 1) Dec 2021

Natural, Built and Historic Environment

1.5.1 Figure 3 depicts the important environmental assets that lie within Derbyshire and Derby. The Plan area contains a variety of very different landscapes, from the upland limestone plateau and gritstone moorlands in the north of the county adjacent to the PDNP, through the rolling pasture lands in the central area to the broad river valleys in the south. The landscape of the PDNP and nearby areas attracts significant numbers of tourists and day visitors, and tourism is an important part of the local economy. Many landscapes of the county, however, exhibit the legacy of large-scale mineral extraction, for example the limestone quarries in the north and west of the county and the former coal mining areas in the east. Figure 4 shows important recreational trails and countryside sites within the Plan area.

1.5.2 As well as lying adjacent to the PDNP, the Plan area contains many important natural, built and historic assets. Much of the county is worked as farmland, almost all of which is classified by Natural England under the Agricultural Land Classification (ALC)[17] as grade 3 and 4, with a small amount of grade 2 land to the south of Ashbourne. The best and most versatile agricultural land is defined as land in grades 1, 2 and 3a of the Agricultural Land Classification and depicted on Figure 5.

1.5.3 Figure 6 depicts that the Plan area contains one of the five biggest areas of interconnected Ancient Woodland (areas of woodland that have persisted since 1600 in England) in the country, focused within the Peak Fringe and the Lower Derwent Valley. Part of the Plan area around Swadlincote and Melbourne lies within the National Forest, an environmental project aimed at creating 200 square miles of mixed habitat forest.

1.5.4 The three main rivers in the county are the Trent, the Derwent and the Dove. As well as their importance for informal leisure, recreational activities and wildlife, all of the rivers have important flood defence regimes, including functional flood plains, which need to be protected and managed effectively, especially in relation to the potential effects of climate change. Within the south of the county, restoration schemes associated with sand and gravel sites can provide opportunities towards reducing the risk and scale of flooding. Such schemes are most effective where they are part of an

[17] Natural England - Agricultural Land Classification Maps

integrated approach to flood risk management and where they include natural flood management techniques.

1.5.5 Flood Risk in Derbyshire predominately comes from two main sources, namely Fluvial and Pluvial. Fluvial is the risk from main rivers, such as the River Derwent/Wye/Amber and Dove, all of which drain into the Trent in the south of the county, and also the River Rother to the north east. All of the main rivers are managed by the Environment Agency who have flood risk maps indicating which areas are at risk (Flood Zone 2 and 3). Surface Water flooding is flooding from surface water run-off, ordinary watercourses and groundwater. Its management lies with the Lead Local Flood Authority (LLFA), Derbyshire County Council. The Environment Agency have also produced maps indicating which areas are at risk from surface water flooding as shown on Figure 7.

1.5.6 Recent historic flooding events in Derbyshire, with the most significant being in in 2000, 2002 and 2007, affected numerous properties and infrastructure, and this is reflected in the number of properties/infrastructure still at risk, within flood risk areas. Both the Environment Agency (through its National Flood and Coastal Erosion Risk Management Strategy) and Derbyshire County Council (through its Local Flood Risk Management Strategy) will continue to manage and mitigate the flood risk.

1.5.7 The Humber River Basin Management Plan has been prepared by the Environment Agency under the Water Framework Directive. This requires all countries throughout the European Union to manage the water environment to consistent standards. The Humber River Basin District is one of the most diverse regions in England, ranging from the upland areas of the Peak District, South Pennines and the North York Moors, across the Derbyshire and Yorkshire Dales, and the fertile river valleys of the Trent and Ouse, to the free-draining chalk of the Wolds. Water supports these landscapes and their wildlife, and pressures that the water environment faces is an important issue. There are five canals within the Plan area, Peak Forest, Chesterfield, Cromford, Erewash and Trent and Mersey which are important for informal leisure and recreational activities and wildlife.

1.5.8 Groundwater provides a third of our drinking water and it also maintains the flow in many rivers. The Environment Agency has defined Source Protection Zones (SPZs) for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These show the risk of contamination from activities that might cause

pollution in the area, the closer the activity, the greater the risk. There are three main zones and a fourth of special interest, occasionally applied to a groundwater source (data.gov.uk).Groundwater protection zones are shown on Figure 8.

1.5.9 Figures 9 to 13 depict the Plan area's natural, built and historic environmental assets in more detail. The Plan Area possesses an extensive network of statutory and non-statutory sites designated for their biodiversity and/or geodiversity interest. The most significant of these, the 'European sites' (previously known as Natura 2000 sites), are designated at the international level. European sites are considered to be of exceptional importance in respect of rare, endangered or vulnerable natural habitats and species and include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Within the Plan area there are three European sites – Peak District Dales SAC, Peak District Moors SPA and South Pennine Moors SAC, with a further two (Bees Nest & Green Clay Pits SAC and Gang Mine SAC) located within the Peak District National Park. The River Mease SAC is located on the Derbyshire/Staffordshire border. The Birklands and Bilhaugh SPA and the Sherwood Forest potential (pSPA) are in Nottinghamshire.

1.5.10 Targets for the creation of priority habitats are set out in the Government's 'Biodiversity 2020' strategy according to different National Character Areas (NCAs) as identified by Natural England. These are then sub-divided into landscape character types (excluding the PDNP). These are detailed in the DCC Publication the Landscape Character of Derbyshire - 2013.

1.5.11 The Derwent Valley Mills World Heritage Site, between Matlock Bath and Derby, is of international importance and a significant tourist attraction. The reason for this international designation is that the valley saw the birth of the factory system, spearheaded by Richard Arkwright, when new types of buildings were erected to house new technology for spinning cotton. The need to provide housing and other facilities resulted in the creation of the first modern industrial settlement at Cromford. Creswell Crags in the north-east of the county is a candidate World Heritage Site, having the only Upper Palaeolithic cave art found in Britain.[18] The archaeological

[18] Derbyshire County Council Historic Environment Record

heritage is derived from the underlying geology, influencing the character and type of the remains.

1.5.12 The Plan area has 53 Sites of Special Scientific Interest (SSSIs); 1 National Nature Reserve (at Calke Abbey); around 1200 local wildlife sites and 101 Regionally Important Geological Sites, half of which lie within the Derbyshire Dales.[19] There are 9,500 entries on the Sites and Monuments Record; 476 Scheduled Monuments; 5,941 Listed Buildings and 486 Conservation Areas. Registered Historic Parks and Gardens include Sudbury, Calke Abbey, Hardwick Hall, Kedleston Hall and Elvaston Castle.

[19] Magic.defra.gov.uk,

Figure 3: Key Environmental Assets

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Figure 4 : Access and Recreation

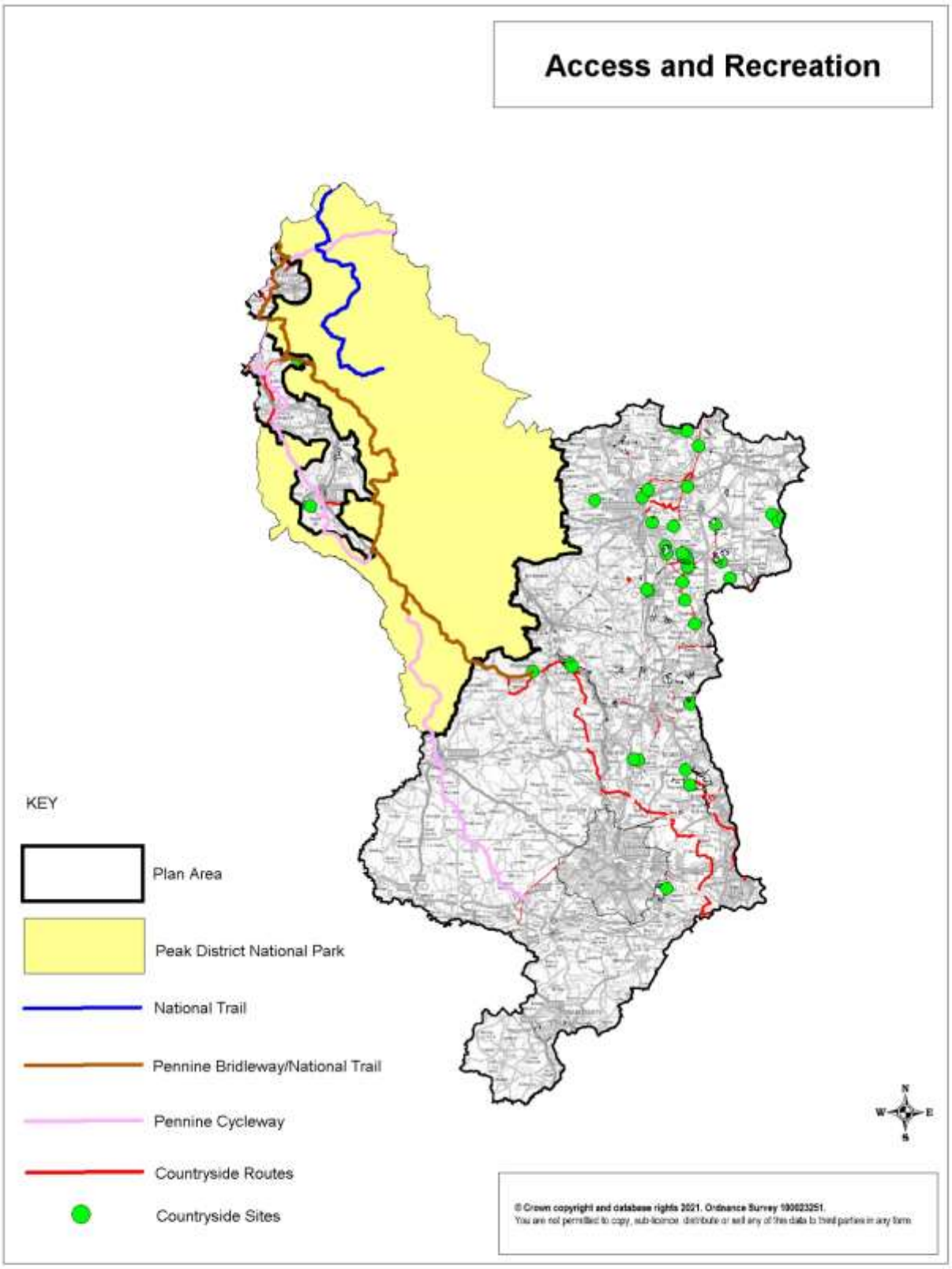

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Figure 5: Best and Most Versatile Agricultural Land

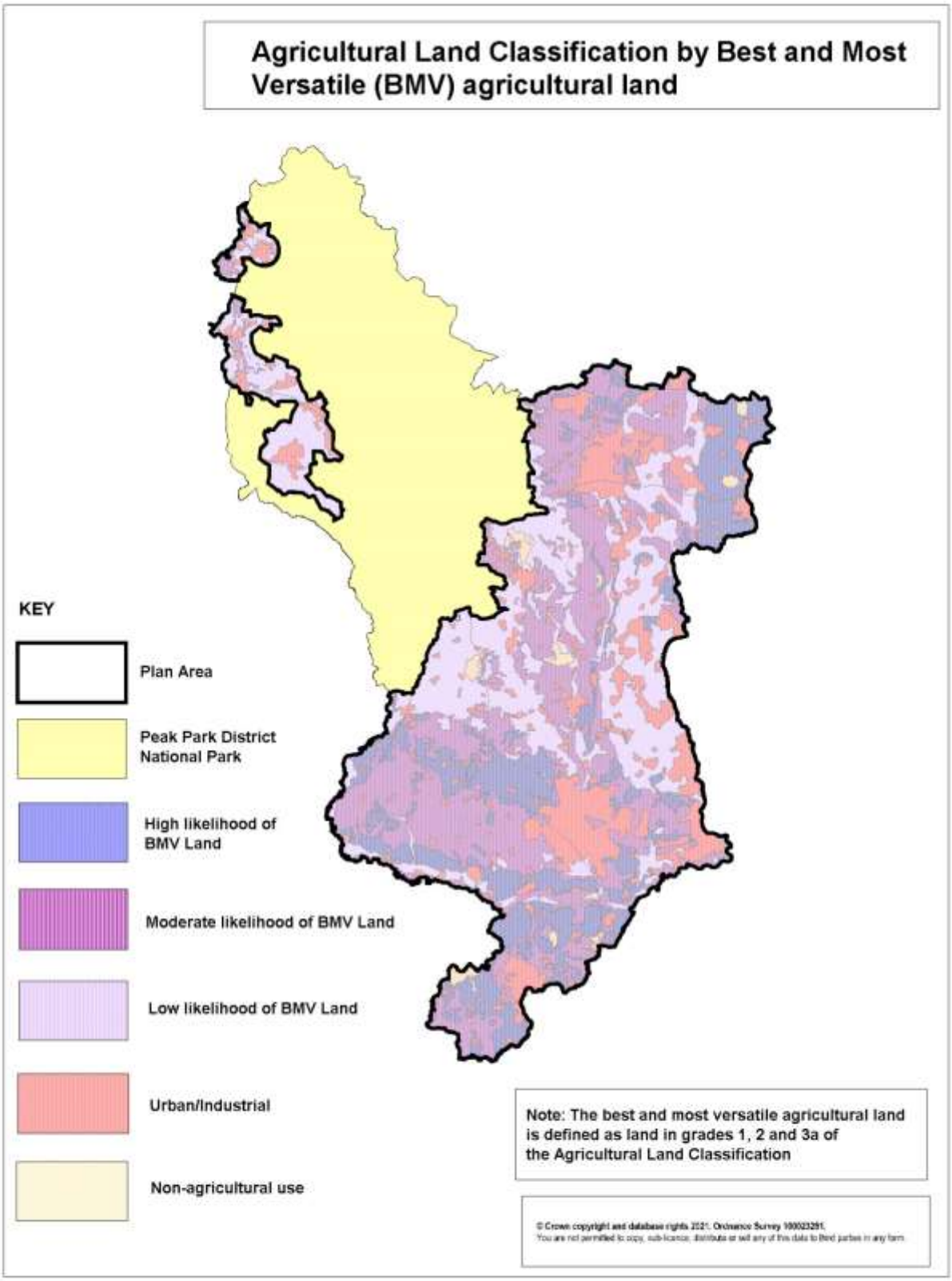

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Figure 6: Green Belt and Ancient Woodland

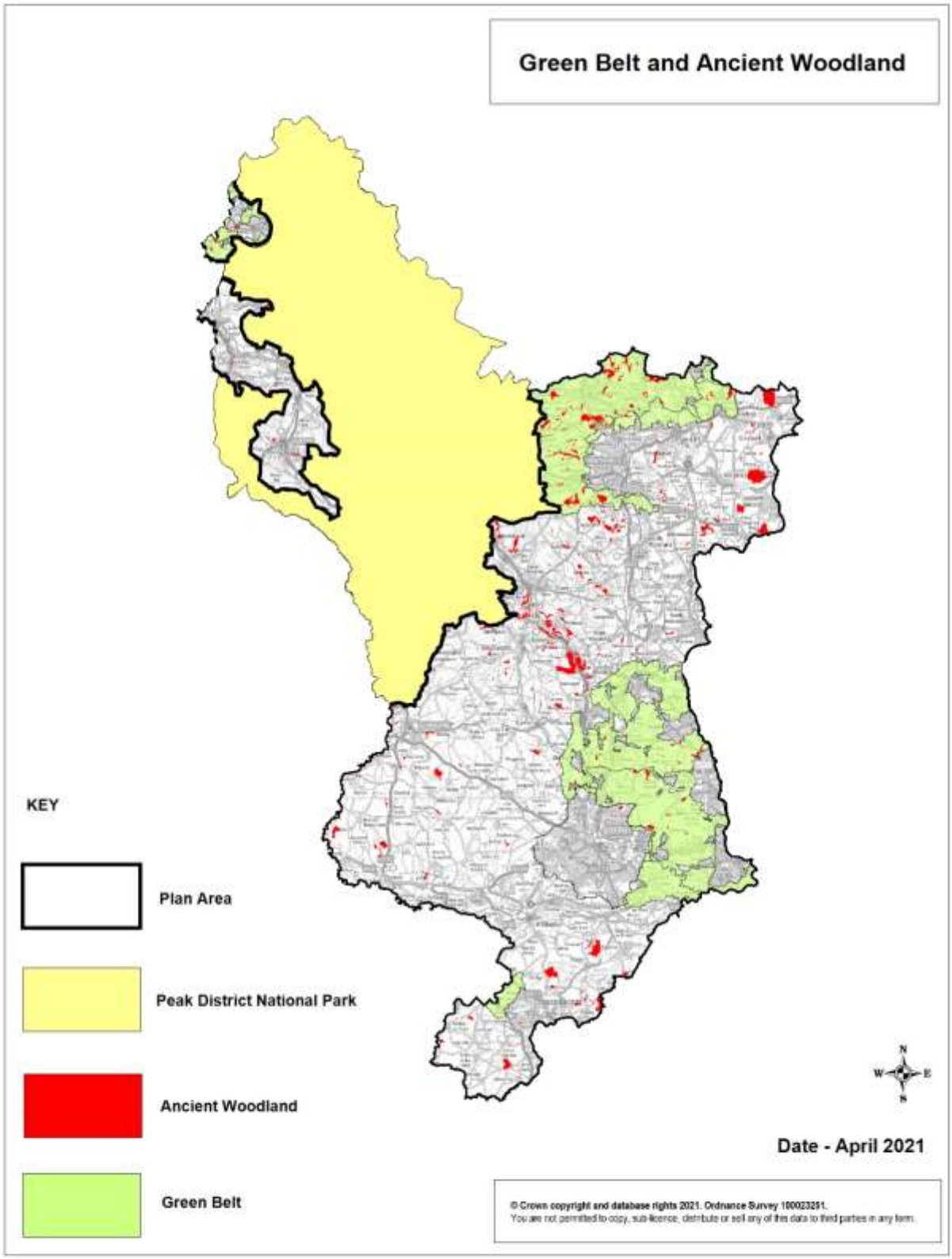

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Figure 7:Flood Risk

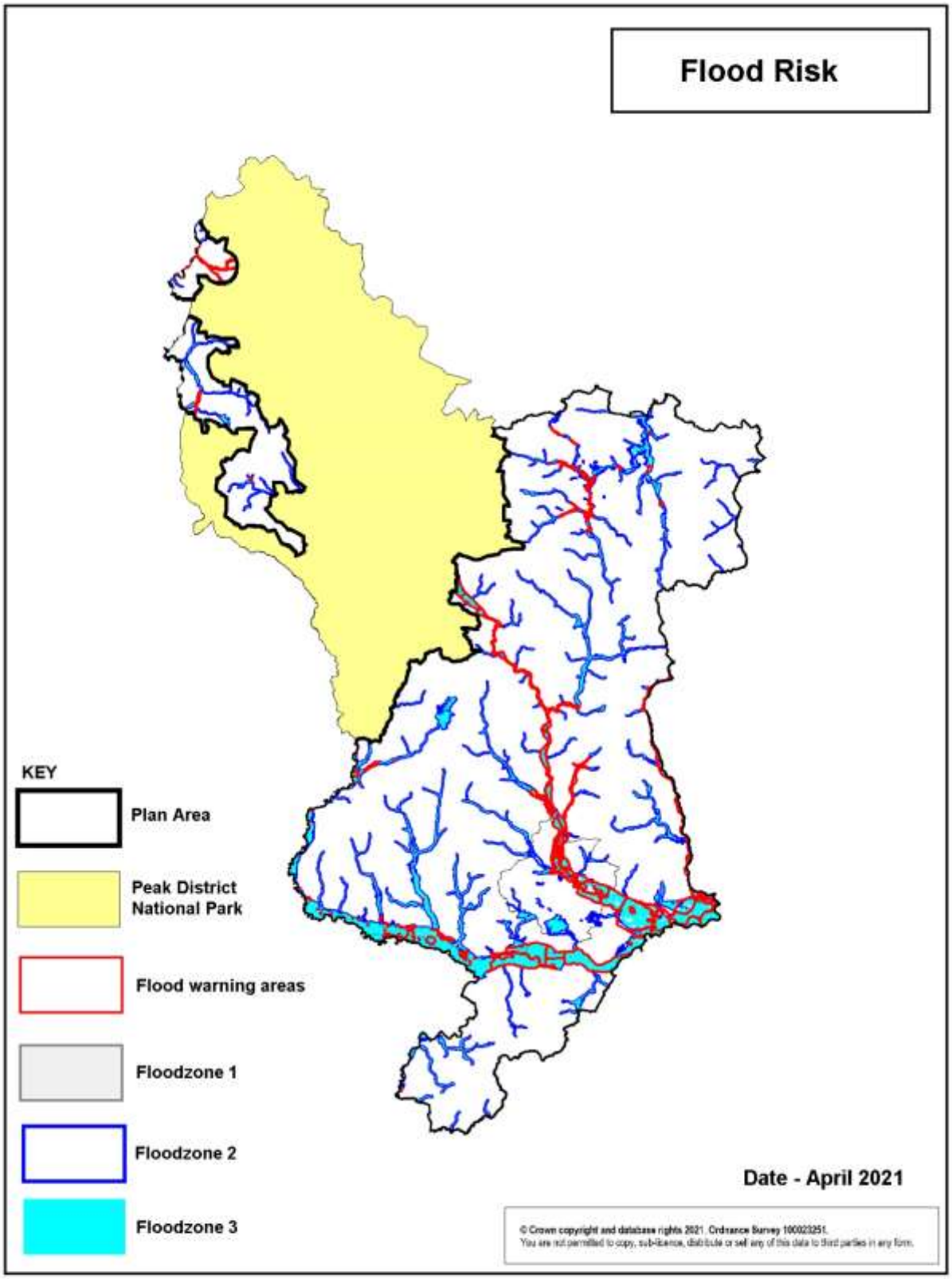

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Figure 8:Groundwater Source Protection Zones

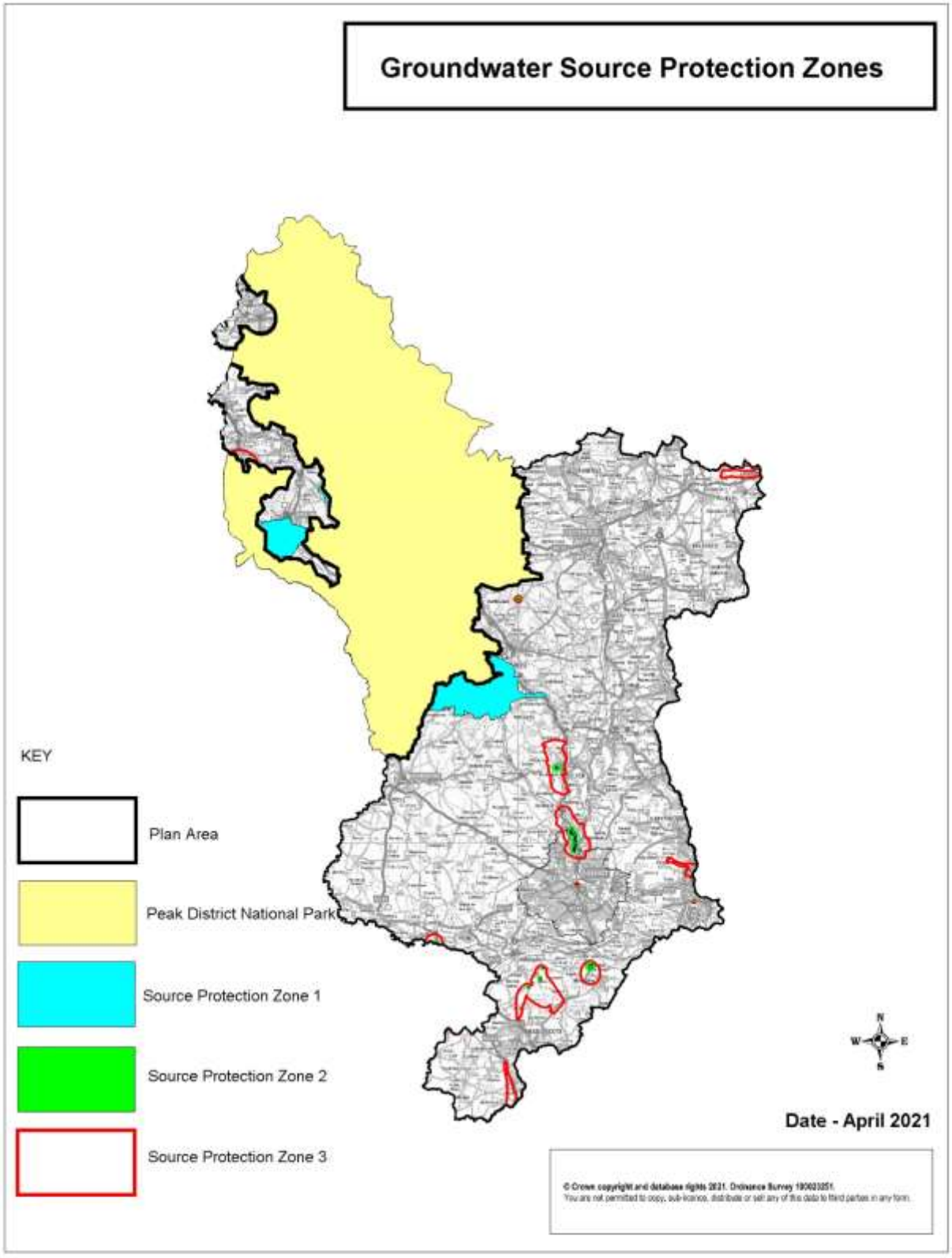

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Figure 9: Designated European Sites

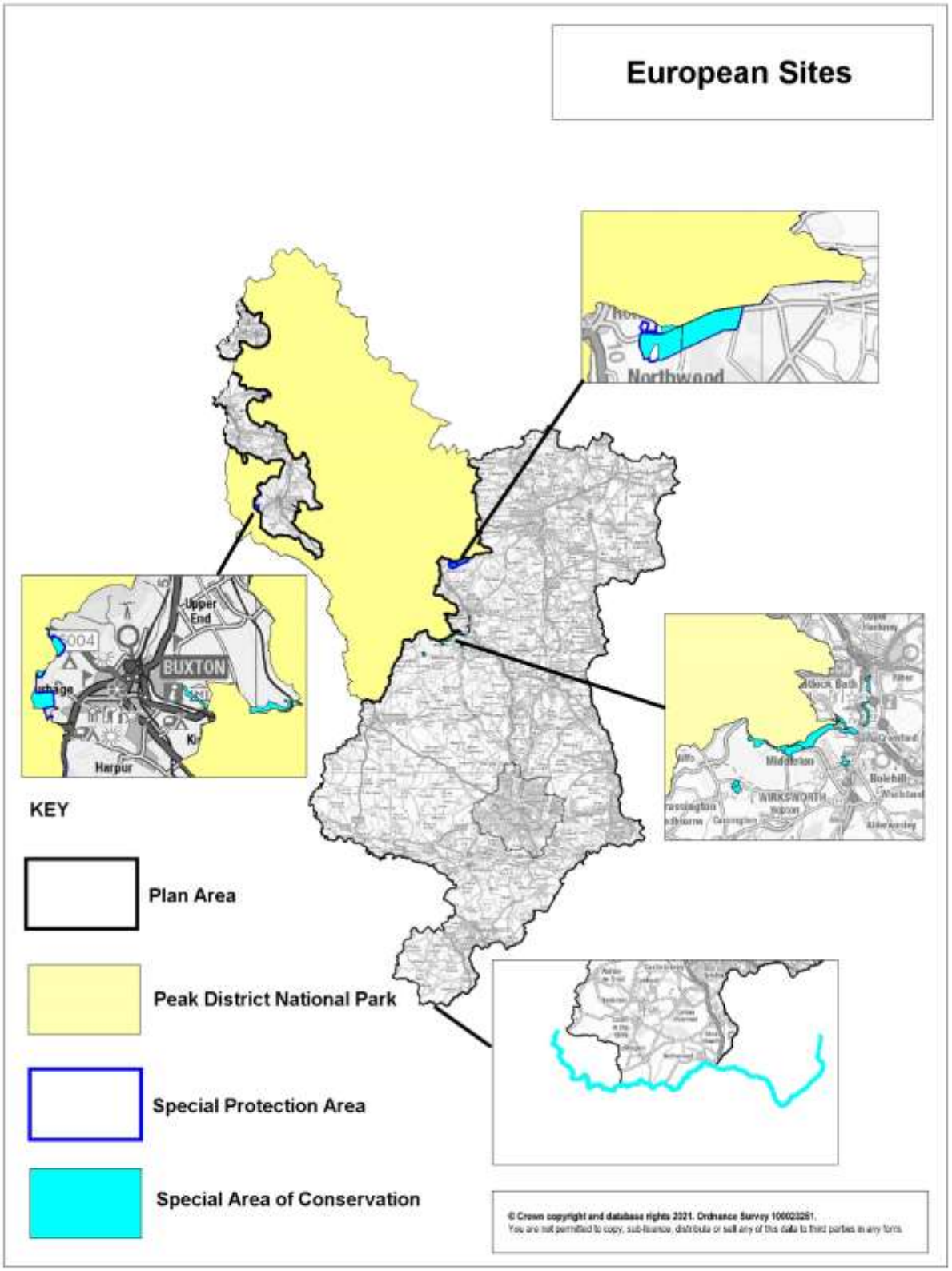

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Figure 10: Heritage

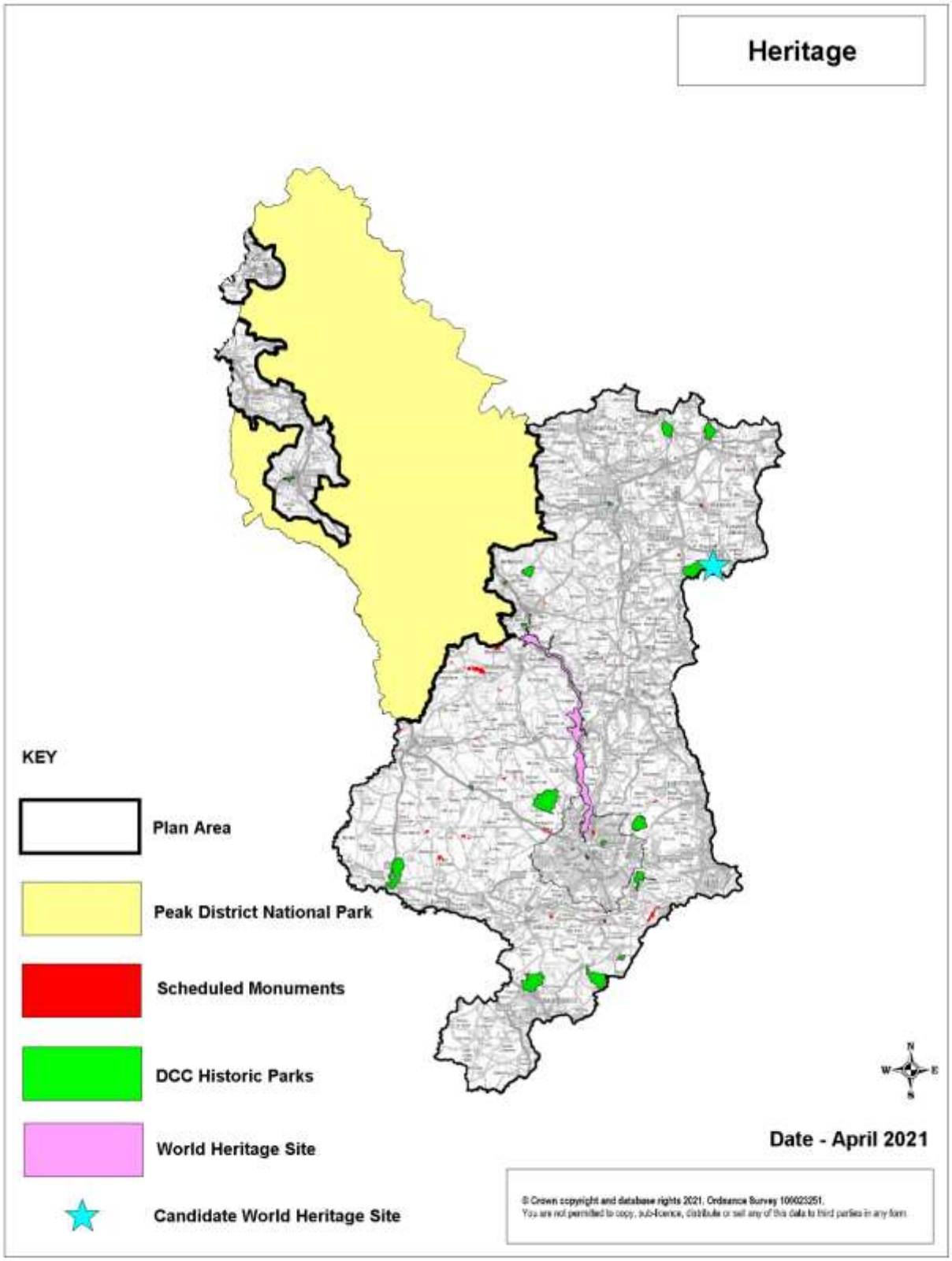

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Figure 11: SSSI's and RIGS

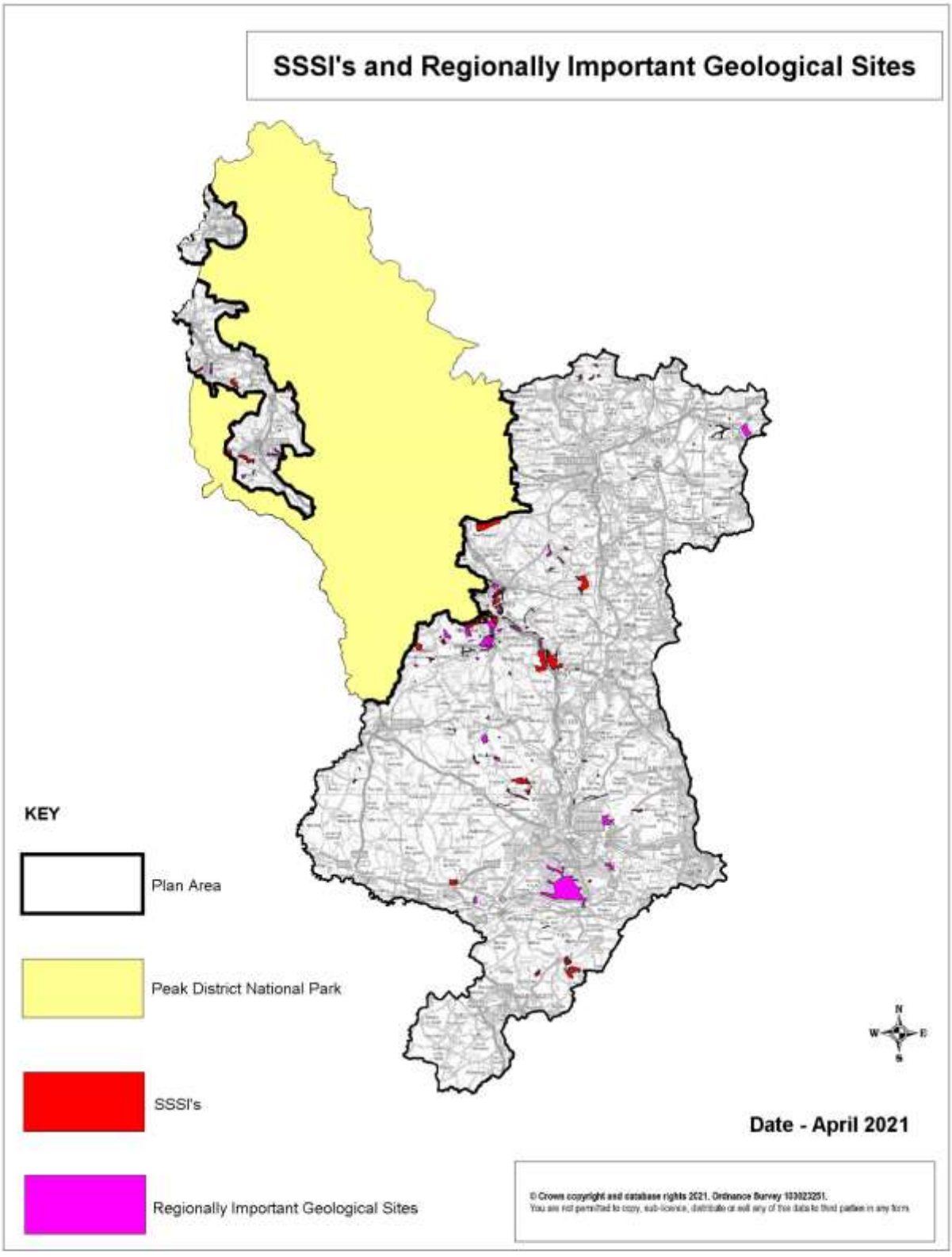

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Figure 12: Nature Reserves

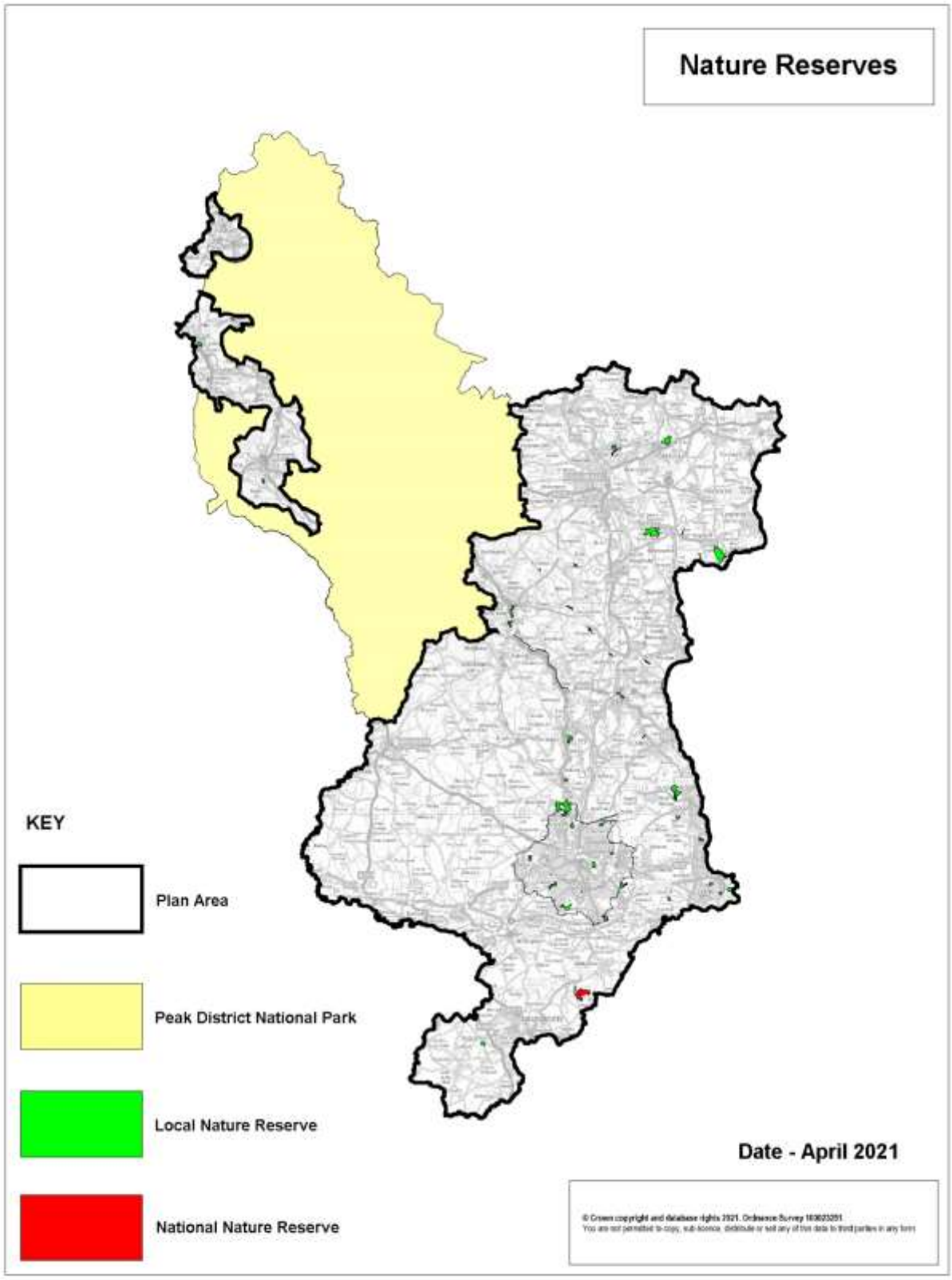

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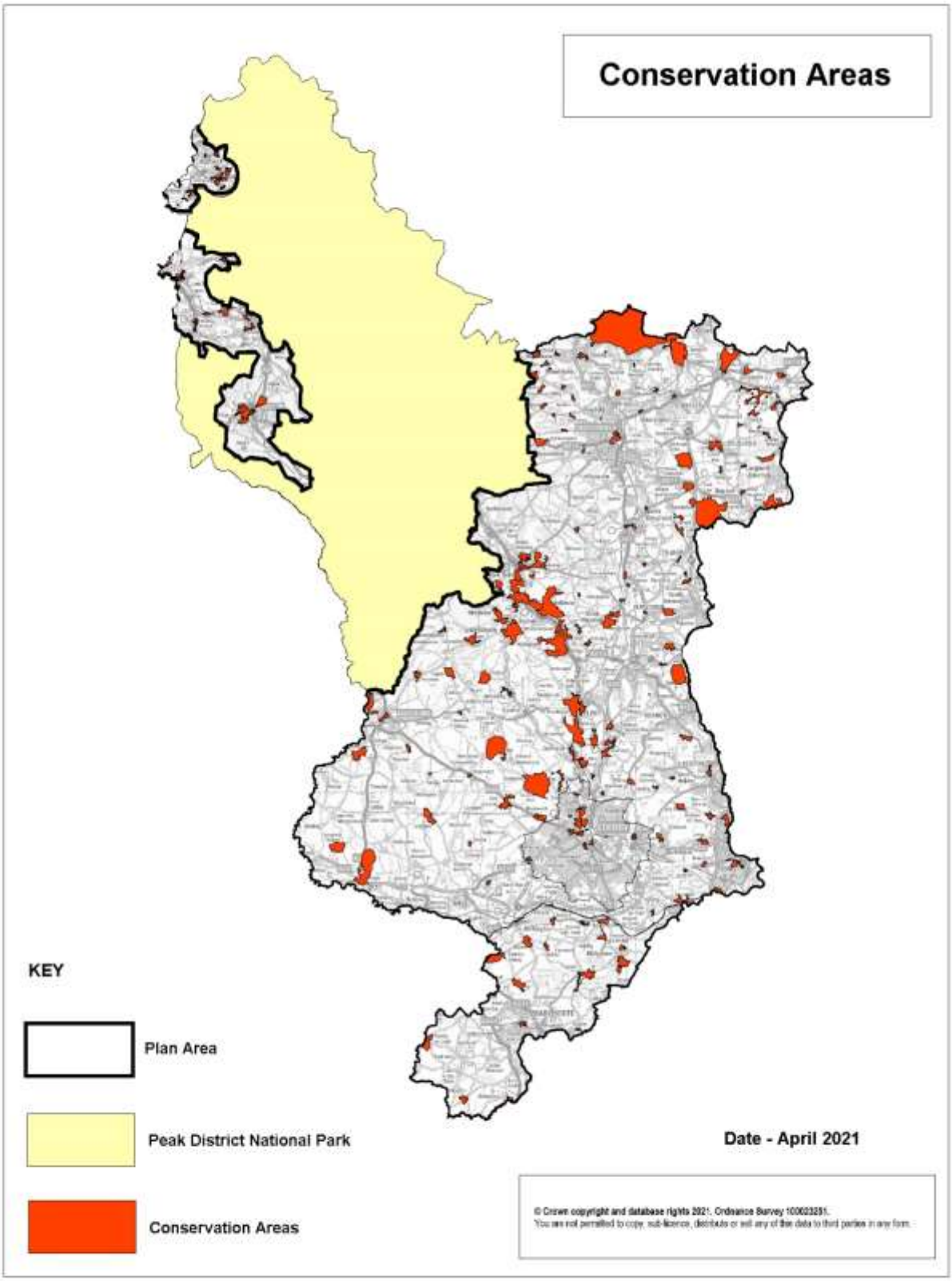
Figure 13: Conservation Areas



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2 The Significance of the Minerals Industry in Derbyshire and Derby

2.1 Introduction

2.1.1 The vast majority of mineral resources in the Plan area are in Derbyshire. There are limited unworked resources of sand and gravel in Derby City, but these have not been worked for many years. Derbyshire is an important national supplier of minerals and Derbyshire's mineral resources bring significant benefits to both the local and national economy.

2.1.2 The most significant mineral worked is limestone which accounts for 91% of annual mineral production from the Plan area, the next is sand and gravel accounting for 8%. Minerals currently extracted in smaller quantities include sandstone and brick clay which account for less than 1% of total plan area's annual production. Other minerals that are currently worked on a small scale or which have been worked in the recent past include coal, oil and gas and vein minerals (fluorspar and barytes).

2.2 Distribution of Mineral Resources

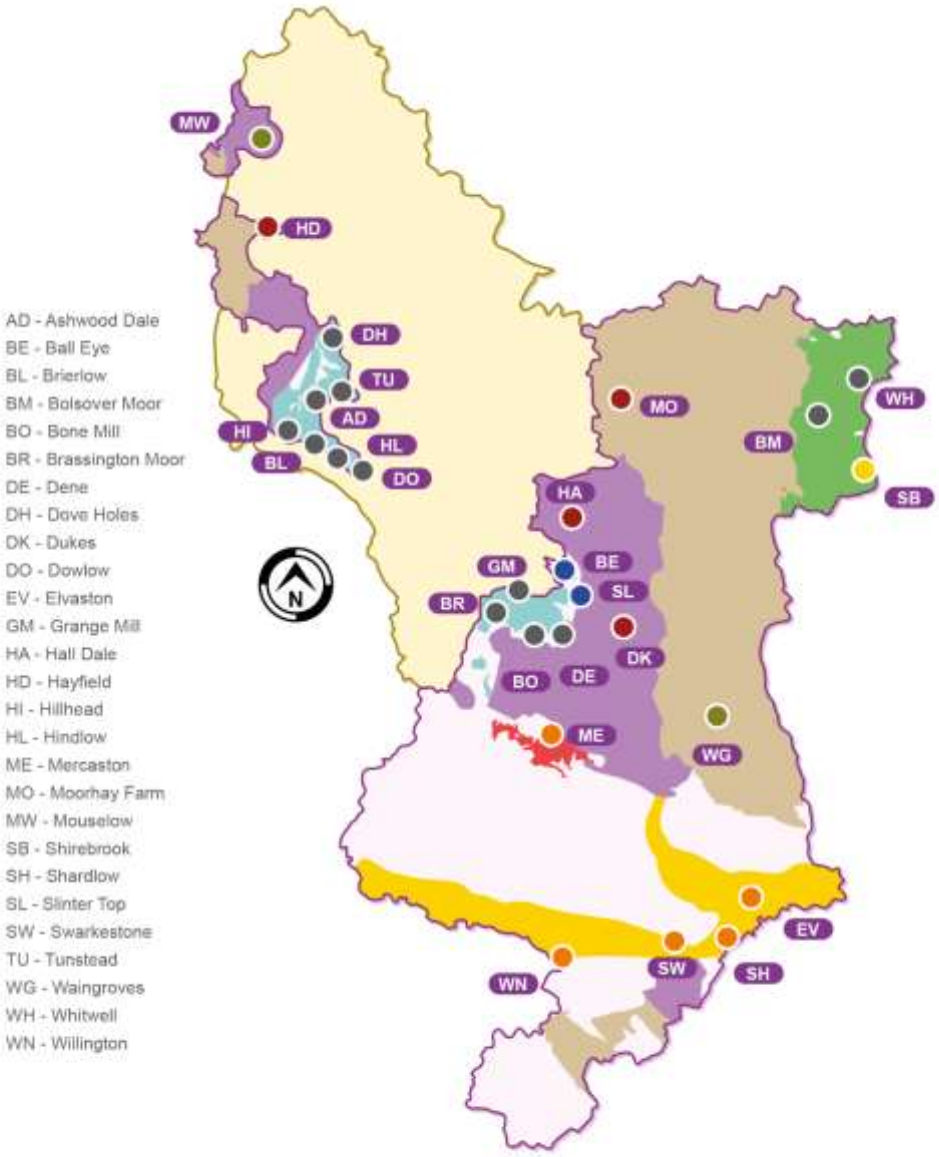
2.2.1 Figure 14 depicts permitted mineral sites at 2019 and important mineral resources; it shows that large areas of the Plan area have potential for the extraction of valuable mineral resources.

2.2.2 The most important mineral resource within Derbyshire is Limestone. The Carboniferous Limestone resource is located mainly in the north-west of the county, in the Buxton and Matlock/Wirksworth areas, whilst the Permian Limestone resource is located in the north-east area of the county, east of Bolsover.

2.2.3 Sand and gravel resources are concentrated along the river valleys, the most important being the Trent Valley to the south of Derby, as well as the adjoining river valleys of the Lower Derwent and Dove. There is a less widespread sand and gravel deposit in the hard rock formation of the Sherwood Sandstones found in a small area around Mercaston, between Ashbourne and Belper.

2.2.4 Building stone (mostly sandstone and gritstone but including some limestone) is produced mainly from small quarries in the central part of Derbyshire around Matlock and Darley Dale, but also from the north-west of the county around Hayfield and Glossop.

Figure 14: Mineral Resources and Permitted Sites



Note: Permitted sites classified as "dormant" under the 1995 Environment Act are not included

- Plan Area
- Sand and Gravel
- Carboniferous Limestone
- Permian Limestone
- Coal Measures (sandstones, mudstones and fireclay)
- Sherwood Sandstones
- Millstone Grit (sandstones, mudstones)
- Area of Peak District National Park within Derbyshire

- Clay Site
- Limestone / Sandstone Site
- Oil and Gas Site
- Sand and Gravel Site
- Vein Minerals Site
- Building Stone Site

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2.2.5 Workable deposits of vein minerals, such as Fluorspar and Barytes are found exclusively in mineralised veins and related deposits in the Carboniferous Limestone. Fluorspar occurs only in the Northern Pennines and the Southern Pennines. Production in the northern area (Durham) ceased in 1999, leaving the Peak District as the remaining source. However, production is limited, with incidental extraction opportunities arising mainly from the quarrying of the host rock Limestone.

2.2.6 The most important economic resources of clay and shales are of Carboniferous age and are associated with the Millstone Grit and the coal measures, the latter also being a potential source of fireclays.

2.2.7 There are substantial coal resources, particularly in the North Derbyshire Coalfield. Whilst some surface coal resources remain in South Derbyshire, they are largely exhausted. There is a remaining resource of deep coal in north-east Derbyshire, contiguous with the surface coal resource shown on Figure 14 and dipping beneath the Permian Limestone to the east.

2.2.8 There is some potential for exploiting conventional gas deposits in Derbyshire, mainly associated with the coal measures in the north east of the county. In the recent past coal mine methane has been extracted from the now abandoned coal mines at Markham, Whitwell and Shirebrook. However, production is presently minimal and the potential for further extraction is considered to be low. Potential unconventional gas deposits associated with the Bowland Hodder shale have also been identified in the north east of the Plan area and to the east of Derby. This resource has not been exploited to date and potential for exploitation is considered to be low.

Mineral Production

2.3.1 Figure 15 provides details of the current permitted mineral sites within the Plan area. Further information about each of the sites can be found at Appendix B of the Proposed Draft Plan. The majority of limestone and sandstone produced within the Plan area is for aggregate purposes used in building and construction, for example, in road making, house construction, in the manufacture of concrete and as railway ballast. In 2019, Derbyshire produced approximately 9.19 million tonnes of aggregate crushed rock[20]. Figures show that 37% of this total was used within Derbyshire, Derby and the PDNP;[21] with a further 6% consumed within the remaining East Midlands

[20] Local Aggregate Assessment 2020
[21] Mainly within Derbyshire and Derby due to development restrictions in the PDNP

region. A significant proportion of Derbyshire's production was exported to the North West (19%) and 15% to the Yorkshire/Humber Region. The West Midlands and East of England together also take a significant amount (7% and 6% respectively) and the South East, London and the Home Counties 8% between them. In 2019, there were a total of thirteen operational quarries within Derbyshire extracting limestone, of which twelve exploit the Carboniferous resource and one the Permian resource. The Plan area contains a large landbank of permitted crushed rock aggregate reserves estimated to be sufficient to last beyond the end of the Plan period at anticipated production rates.

2.3.2 Derbyshire makes an important national contribution to the supply of minerals used for industrial processing and manufacturing purposes supplying 85% of the country's industrial limestone for animal feedstuffs, glass, sealants and adhesives. Annual production of around 3 million tonnes is supplied from the Plan area and used in applications such as cement manufacture, flue gas desulphurisation, water purification, steel making, agricultural improvement and in the production of a diverse range of products, for example, animal feedstuffs, glass, paints, plastics, sealants, pharmaceuticals etc. All of the quarries that produce industrial minerals also produce aggregates as well. At 2019, Whitwell, Tunstead, Brierlow, Dowlow, Longcliffe and Grangemill quarries were the major suppliers of industrial mineral. Tunstead Cement works, near Buxton is one of only eleven cement works in the UK fed from its adjacent quarry. Whitwell Quarry is only one of only two sources of specialist industrial dolomitic limestone in the country. It supplies the adjacent Whitwell Works which produces refractory products for use in the manufacture of steel; a large percentage of the products are exported.

2.3.3 Sand and gravel produced in the Plan area is also used for aggregate purposes primarily in ready mixed concrete, pre-cast concrete products and as a bulk filler. In Derbyshire, a high percentage is used to make concrete. Sand is used mainly in making mortars and asphalt or building sand. In 2019, Derbyshire produced 0.99 million tonnes of sand and gravel from four active quarries, three located along the Trent Valley and one at Mercaston on the Sherwood Sandstone resource. Most active quarries have ready mixed concrete plants on site, producing concrete for precast concrete plants. Most is used within 10–15 miles from where it is quarried, mainly because of the high cost of transport and competition from other sources of

aggregate in the area. Additional reserves of sand and gravel will be required to maintain supply at anticipated production rates throughout the Plan period.

2.3.4 Building stone is important for the repair and restoration of historic buildings or with the repair/extension of existing properties or for new buildings in areas of high environmental value, such as conservation areas. It is not only of great importance for the conservation of Derbyshire's historic and built environment, but it is also valued nationally. In Derbyshire at 2019, five quarries were producing stone specifically for building purposes. These are Halldale Quarry near Darley Dale, Dukes Quarry near Whatstandwell Mouselow Quarry near Glossop, Hayfield Quarry near New Mills and Moorhay Quarry near Chesterfield.. Larger quarries, producing mainly aggregate as their principal product, also produce some quantities of building stone to order, as an ancillary product.

2.3.5 There are two operational brick clay quarries supplying material to brick making plants that lie outside of the Plan area. Mouselow Quarry at Glossop supplies Denton brickworks in Tameside. It also produces sandstone for building purposes as an ancillary product. Waingroves Quarry near to Ripley produces brick clay for export to Kirton brickworks in Nottinghamshire and Desford brickworks in Leicestershire for blending purposes. Total annual production from the Plan area is around 100,000 tonnes.

2.3.6 Historically, Derbyshire was an important supplier of deep mined and opencast coal principally used in industrial processing, for domestic fuel and to produce electricity. In the recent past a small drift mine was in operation at Eckington producing about 20,000 tonnes per annum but this closed in 2019. At present there are no coal mining sites in operation. Oil and gas is used to produce energy and are also used as a raw material by the petro-chemicals industry to produce drugs and plastics. There is currently one site in Derbyshire producing a small quantity of gas (abandoned mine methane) at the former Whitwell Colliery. In view of the climate change agenda and the move away from the use of carbon rich fossil fuels for energy production the future importance of the coal and oil and gas resources in the Plan area is uncertain.

2.3.7 The Plan area also produces secondary and recycled aggregates and there are a number of permanent, dedicated recycled aggregates production facilities (e.g. Chaddesden Sidings and Cotes Park Industrial Estate) in the area together with other, smaller sites which incorporate recycled aggregate production as part of their wider

waste management operations. There are also a number of temporary mobile recycling operations within the county, some at quarry sites.

Restoration and the Legacy of Mineral Working

2.4.1 Mineral working can have large scale impacts on the landscape and uses of land and whilst extraction is temporary in nature impacts can be long term and even permanent. It is important that worked out sites are restored to beneficial after uses at the earliest opportunity. The after use of mineral working depends to some extent on the nature of working and the availability of fill material which dictates whether the site can be restored to its original levels. Nevertheless, in general the restoration of mineral sites provides great opportunities to restore land to a wide range of after uses which can benefit both the local and wider community including employment, nature conservation, recreation, forestry/woodland, agriculture, water storage as well as increasing public access.

2.4.2 The scale of limestone/sandstone quarries means that infilling is not usually an option with final restoration influenced by the depth of the quarry and the level of the water table. Deeper remote quarries are often left to regenerate naturally and, in such cases, they can become important areas for wildlife and natural history. In shallower quarries, the quarry floor can be restored for agriculture or informal leisure uses, or built development e.g. housing has been developed at the former Cawdor Quarry.

2.4.3 Sand and gravel workings are much shallower and therefore easier to fill. In the past many sites were returned to agricultural use but more recently, sites have been restored to alternative beneficial nature conservation and recreational after-uses, for example, Attenbrough Nature Reserve, windsurfing at Long Eaton, sailing at Swarkestone and fishing at Shardlow. In the future, the contribution that the restoration of sand and gravel sites can make to increasing our resilience to climate change and particularly the risk of flooding is likely to become more important by using the extraction area next to the river for river braiding or widening or to provide increased capacity for winter flood water storage. An example of former workings restored to water storage use is Witches Oak Water, near Elvaston.

2.4.4 Historically, the coalfield area of Derbyshire was the location of many deep mines and opencast coal workings which have been regenerated to provide new landscapes and opportunities to deliver local economic growth e.g. Markham Vale, and local

recreational opportunities, e.g. Shipley Country Park, Grassmoor Country Park, Poolsbrook Country Park, Pleasley Country Park, Five Pits Trail etc

Figure 15: Existing Permitted Mineral Sites

District	Quarry	Operator	Mineral Resource	End Use	End date of permission	Transport mode
High Peak	Mouselow Quarry, Glossop	Wienerberger	Millstone Grit Shale/Sandstone	Brick Clay/Building Stone/Aggregates	2042	Road
High Peak	Hayfield Quarry	O Shea and Sons	Millstone Grit	Building Stone	2042	Road
High Peak	Dove Holes Quarry, Buxton	Cemex	Carboniferous Limestone	Aggregates	2042	Road/Rail
High Peak	Tunstead Quarry (Tunstead - Old Moor), Buxton	Tarmac	Carboniferous Limestone	Industrial Limestone/ Aggregates	2042	Road/Rail
High Peak	Ashwood Dale, Buxton	Breedon Southern Ltd	Carboniferous Limestone	Aggregates	2042	Road
High Peak	Hillhead Quarry, Buxton	Tarmac	Carboniferous Limestone	Aggregates	2042	Road/Potential Rail
High Peak	Brierlow Quarry, Buxton	Lhoist UK Ltd	Carboniferous Limestone	Industrial Limestone/ Aggregates	2042	Road
High Peak	Hindlow Quarry Buxton	Tarmac	Carboniferous Limestone	Aggregates	2042	Road/Potential Rail
High Peak	Dowlow Quarry, Buxton	Breedon Southern Ltd	Carboniferous Limestone	Industrial Limestone/ Aggregates	2042	Road/ Rail
Derbyshire Dales	Bone Mill Quarry (Ryder Point), Hopton	Longcliffe Quarries Ltd	Carboniferous Limestone	Aggregates/Industrial Dolomitic Limestone	2042	Road
Derbyshire Dales	Brassington Moor Quarry (Longcliffe)	Longcliffe Quarries Ltd	Carboniferous Limestone	Industrial Limestone/ Aggregates	2035	Road
Derbyshire Dales	Grange Mill Quarry, Wirksworth	Ben Bennet Jnr Ltd	Carboniferous Limestone	Industrial Limestone/ Aggregates	2042	Road

District	Quarry	Operator	Mineral Resource	End Use	End date of permission	Transport mode
Derbyshire Dales	Halldale Quarry, Darley Dale Non Operational	Marshalls	Sandstone	Building stone	2042	Road
Derbyshire Dales	Ball Eye Quarry, Cromford Non Operational	Deepwood Mining	Carboniferous Limestone	Aggegates/Vein Minerals	2042	Road
Derbyshire Dales	Slinter Top Quarry, Cromford	Slinter Mining Co.	Carboniferous Limestone	Aggregates/Vein Minerals	2021	Road
Derbyshire Dales	Dene Quarry, Cromford	Tarmac	Carboniferous Limestone	Aggregates	2026	Road
Derbyshire Dales	Mercaston Quarry	Hanson	Sherwood Sandstone	Sand and Gravel	2042	Road
Bolsover	Whitwell Quarry	Tarmac	Permian Limestone	Aggregates/Industrial Dolomitic Limestone	2025	Road
Bolsover	Bolsover Moor - Non Operational	Tarmac	Permian Limestone	Aggregates	2023	Road
Bolsover	Shirebrook Colliery	Infinis Alternative Energies	Coal measures	Oil and Gas - Coal Mine Methane	2029	Pipeline
North East Derbyshire	Moorhay Farm	Moorhay Stone and Slate Quarry Ltd	Sandstone	Building Stone	2024	Road
Amber Valley	Dukes Quarry, Whatstandwell	Blockstone	Sandstone	Building Stone	2029	Road
Amber Valley	Waingroves Quarry, Ripley	Forterra	Coal measures	Brick Clay	2042	Road
South Derbyshire	Elvaston - Non Operational	Tarmac	Sand and gravel	Aggregates	2025	Road
South Derbyshire	Shardlow	Hanson	Sand and gravel	Aggregates	2029	Road

District	Quarry	Operator	Mineral Resource	End Use	End date of permission	Transport mode
South Derbyshire	Swarkestone	Tarmac	Sand and gravel	Aggregates	2027	Road
South Derbyshire	Willington	Cemex	Sand and gravel	Aggregates	2024	Road