

Environmental Character Area Profile for the Minerals Local Plan: 5. Lenches Ridge

1. Introduction

- 1.1. Minerals development usually takes place on previously undeveloped land and can therefore result in permanent change to the natural environment and green spaces in Worcestershire. The impacts of both the working and the restoration of mineral sites need to be considered in detail in the development of the Worcestershire Minerals Local Plan (the MLP).
- 1.2. The Council will take a 'green infrastructure' (GI) approach to considering these impacts. The GI approach is a different way of thinking about the green spaces in Worcestershire. It moves beyond solely considering the environmental benefits of green spaces and integrates the consideration of economic, health and social benefits in the planning and management of green spaces. Rather than considering each green space in isolation it looks at the ways in which individual sites and corridors of green space collectively form the distinctive character of Worcestershire that attracts both visitors and business to the County.
- 1.3. The components of GI include biodiversity, landscape, historic environment, access and recreation and water (also known as blue infrastructure). The GI approach requires thinking about the environment as an integrated system of stepping stones or nodes in a wider network¹.

Green infrastructure and mineral workings and restoration

- 1.4. There is significant potential for mineral workings to destroy existing networks of green infrastructure if the nature and character of these networks is not taken into account. However there is also significant potential to contribute positively to green infrastructure through the restoration of mineral workings.
- 1.5. The GI approach extends beyond thinking about designated sites of biodiversity or historic interest. This means that the impact of a mineral working on the wider environment and the integrated system of stepping stones or nodes in a wider network² will need to be considered.

Environmental Character Areas³ and the Minerals Local Plan

- 1.6. The Worcestershire Green Infrastructure Partnership has undertaken an analysis of the landscape character, biodiversity and the historic environment of Worcestershire to identify 30 distinct GI Environmental Character Areas (ECAs). Details about how these were developed is set out in *Planning for a Multifunctional Green Infrastructure Framework in*

¹ Green Infrastructure Guidance – Natural England.

² Green Infrastructure Guidance – Natural England.

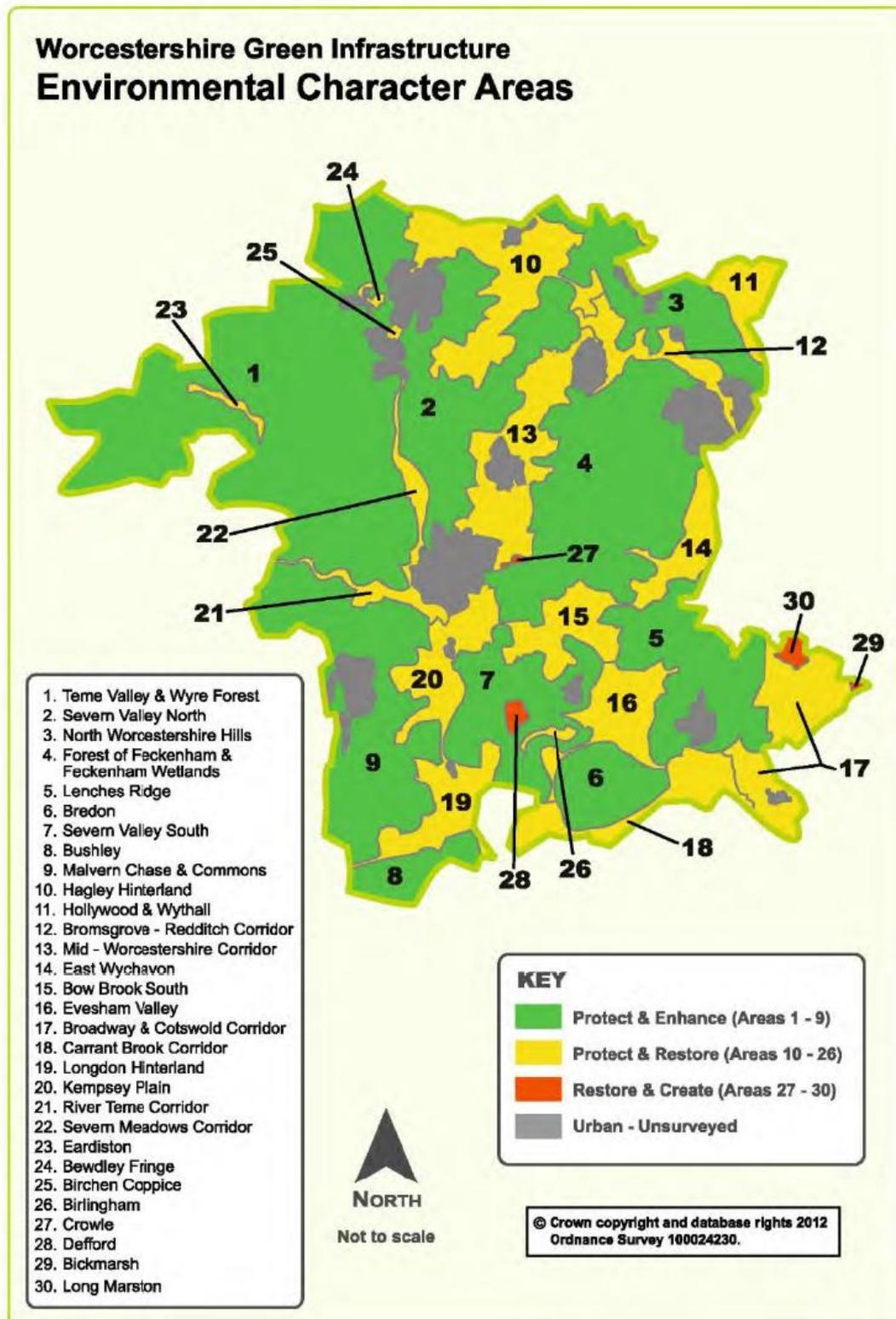
³ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

Worcestershire: Green Infrastructure Framework 2 (2012) available at www.worcestershire.gov.uk/GI

- 1.7. These underlie the distinctive character of Worcestershire and it is the Council's intention that the unique characteristics of each area will drive the restoration strategy for the Minerals Local Plan.
- 1.8. This is one of 30 profile documents which set out the characteristics and priorities for the each ECA. It sets out the mineral resources in the ECA and the GI priorities identified by the Worcestershire GI Partnership. These priorities are structured around biodiversity, historic environment, landscape character, water environment (also known as blue infrastructure) access and recreation and transport. The document is also supplemented by other locally relevant information as appropriate.
- 1.9. This information will be used to develop the spatial strategy and restoration priorities for each ECA.
- 1.10. Profiles for each of the following ECAs are available on our website www.worcestershire.gov.uk/mineralsbackground:
- 1.11. The Environmental Character Areas are:
 1. Teme Valley & Wyre Forest
 2. Severn Valley North
 3. North Worcestershire Hills
 4. Forest of Feckenham & Feckenham Wetlands
 5. Lenches Ridge
 6. Bredon
 7. Severn Valley South
 8. Bushley
 9. Malvern Chase and Commons
 10. Hagley Hinterland
 11. Hollywood & Wythall
 12. Bromsgrove – Redditch Corridor
 13. Mid-Worcestershire Corridor
 14. East Wychavon
 15. Bow Brook South
 16. Evesham Valley
 17. Broadway & Cotswold Corridor
 18. Carrant Brook Corridor
 19. Longdon Hinterland
 20. Kempsey Plain
 21. River Teme Corridor
 22. Severn Meadows Corridor
 23. Eardiston
 24. Bewdley Fringe
 25. Birchen Coppice
 26. Birlingham
 27. Crowle
 28. Defford
 29. Bickmarsh
 30. Long Marston

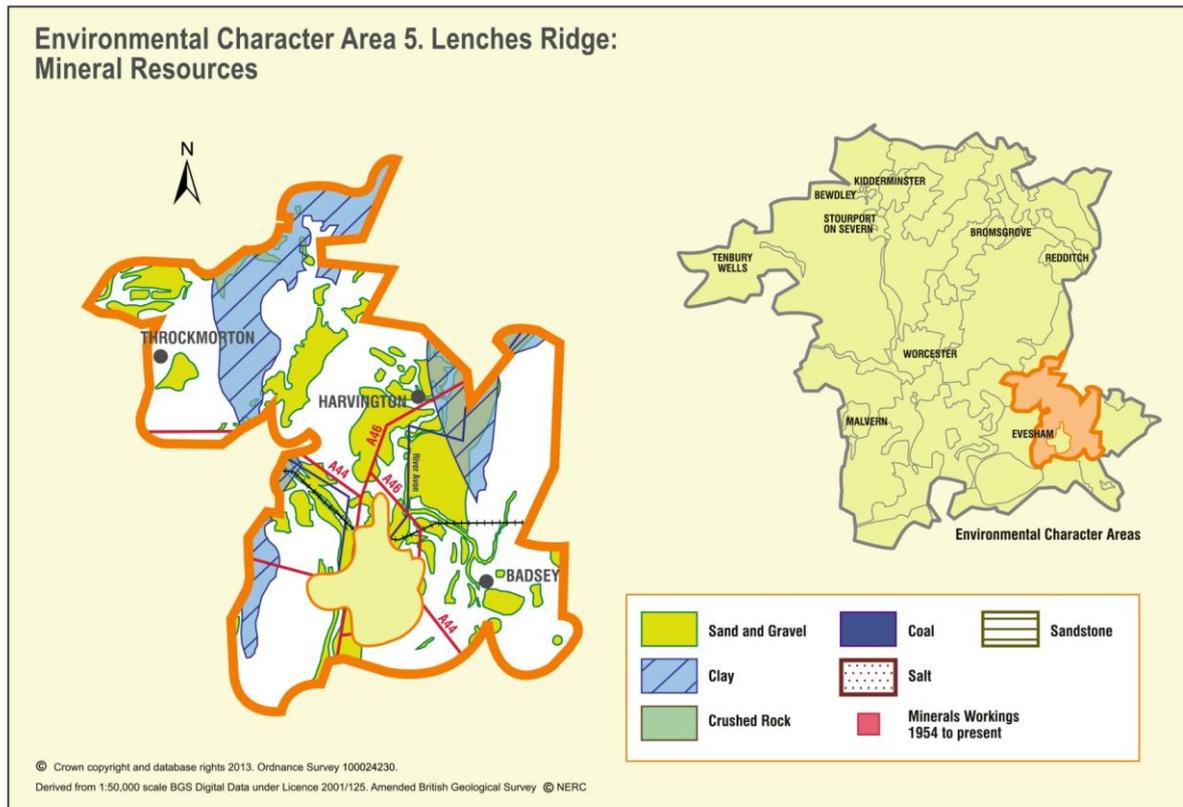
These are illustrated on Figure 1. Environmental Character Areas.

Figure 1. Environmental Character Areas



2. Characteristics and priorities of the Lenches Ridge

Figure 2. Environmental Character Area 5 Lenches Ridge: Mineral Resources



Mineral Resources

Aggregates

2.1. Details about the aggregate resources in this ECA are given in the background report "Analysis of Mineral Resources in Worcestershire" available on www.worcestershire.gov.uk/mineralsbackground. The following is therefore only a simple summary.

Sand and gravel

- 2.2. ECA 5 contains substantial potential sand and gravel resources in 1st, 2nd, 3rd and 4th river terrace and fluvio-glacial deposits. In summary, the borehole evidence is poor but 29 resource areas have been identified, estimates can be made for 6 of these as containing an estimated 12.3m³ of sand and gravel. 3 of the resource areas are considered "Key" and 5 "Significant".
- 2.3. The geological memoir reports that sands and gravels have been worked in numerous small pits along the Avon terraces, mostly in the second and fourth river terraces but that exploitation has been restricted by virtue of

the fact that the gravels are unsuitable for many purposes because of their high content of Jurassic pebbles.

Hard rock and Building stone

- 2.4. None of the rocks of the Evesham, Stratford area are particularly durable and their use as building material has been largely limited to vernacular and farm buildings and walls.

Industrial minerals

Clay

- 2.5. Old, disused clay pits are quite common in the Lower Lias clays of the Vale of Evesham. The only working pit in recent times was that at Honeybourne, in the 1960s. The clays were used for the manufacture of bricks, tiles and drainpipes.

Silica sand

- 2.6. There is no evidence that any materials from this ECA were used for industrial purposes, and they would seem to be completely different from those used as silica or foundry sand in the north of the county.

Brine

- 2.7. There is no evidence of brine working in this area or that Halite deposits might exist at depth.

Future Growth

- 2.8. The key driver for mineral extraction is to provide the raw materials required for the economy to function properly and for homes and infrastructure to be built. Minerals are unevenly distributed. Some of the minerals that we need are not found in Worcestershire and will need to be imported from outside the County. Many minerals are expensive to transport, particularly aggregates as they are a relatively low value and bulky material, and they are likely to be used close to their source, meaning that some local mineral extraction will be needed to support local growth in housing and the associated infrastructure that is required, or to provide raw materials for local industry. On average, about 80 per cent of mineral products are used within 30 miles of the quarry but this section considers the likely levels of development within 10 miles of the ECA.
- 2.9. This ECA is a largely rural area within Wychavon District. Wychavon anticipates 5,807 homes, 18.5 ha of employment land and a new neighbourhood centre in the next 14-18 years⁴.
- 2.10. The ECA surrounds the main town of Evesham⁵ which is proposed for balanced growth in the South Worcestershire Development Plan and

⁴ Information gathered by Worcestershire County Council in early 2013. This gives a good indication of the likely levels of development which can be expected, but for the latest figures please refer to the relevant City, District or Borough Council.

incorporates the category 1 villages of Badsey and Offenham, the category 2 villages of Harvington and South Littleton, and the category 3 villages of Bishampton, Blackminster, Church Lench, North Middleton and Middle Littleton which are proposed for some development in the South Worcestershire Development Plan proposed submission document⁶.

- 2.11. These and other areas beyond Worcestershire could create further demand for minerals in this Environmental Character Area.

Green Infrastructure priorities⁷

- 2.12. All Environmental Character Areas (ECA's) have been placed into one of three categories based on their overall score for Green Infrastructure.

These are:

1. Protect and enhance
2. Protect and restore
3. Restore and create

- 2.13. The category is based on an assessment of the ECAs landscape character, biodiversity and the historic environment characteristics. These characteristics were each attributed a score, with biodiversity being given a greater weighting than landscape and the historic environment, each of which were given equal but lower weightings.

- 2.14. The strategic GI approach for the Lenches Ridge ECA is to protect and enhance. The overarching principle identified by the GI partnership is to enhance the functionality and habitats of the Avon floodplain.

Biodiversity and landscape

- 2.15. The Lenches Ridge Environmental Character Area straddles the boundary of two Regional Landscape Character Areas: Mid Worcestershire Forests to the north-west and Vale of Evesham to the south-east. The ECA falls wholly or partially within the Forest of Feckenham Biodiversity Delivery Area and the Severn and Avon Vales Biodiversity Delivery Area, two of the

⁵ Main towns are second in the five tier settlement hierarchy set out in the South Worcestershire Development Plan proposed submission document. These towns provide a comprehensive range of local services and employment opportunities for their residents and the rural hinterland. The towns will continue to be the focus of balanced growth in Malvern Hills and Wychavon. A number of urban extensions and smaller infill allocations are proposed along with necessary associated infrastructure. They are less than a third of the size of the Main Towns, but provide a range of services and employment opportunities and act as local service centres. Due to the extent of floodplains around Upton upon Severn, new development will be limited.

⁶ Category 1, 2 and 3 villages are fourth in the five tier settlement hierarchy set out in the South Worcestershire Development Plan proposed submission document. Their role is predominately aimed at meeting locally identified housing and employment needs. They are therefore suited to accommodate market and affordable housing needs alongside limited employment for local needs. The scale of allocated development is significantly less than that for the urban areas and is aimed at helping to address housing needs and support local services.

⁷ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

priority opportunity areas determined by the Worcestershire Biodiversity Partnership for the delivery of county Biodiversity Action Plan targets. Information about the Biodiversity Delivery Areas is available from www.worcestershire.gov.uk/biodiversity.

- 2.16. The central part, from which the ECA takes its name, includes the village of Church Lench and its associated hamlets of Ab Lench, Atch Lench and Sheriffs Lench. They stand on a ridge which defines the northern boundary of the Vale of Evesham surrounded by farmland, woodland and orchards. This area has been classified by the Worcestershire County Landscape Character Assessment as Landscape Type Timbered Plateau Farmlands which reflects its elevated topography and wooded nature. The Lenches, at the intersection of the Warwickshire border country and the Vale of Evesham, are a topographically interesting area of ancient countryside, notably containing ridge and furrow, moats, fish ponds and mill ponds. They have significant ancient woodland cover (Splade Wood, Atch Lentch Wood SWS's), traditional orchards and much old grassland, including areas of calcareous flora. The area also has much semi-natural habitat interest in its road verges and a relatively intact ancient hedgerow network.
- 2.17. The western part of the ECA has a very different character, being classified as Village Claylands Landscape Type by the County Landscape Character Assessment. This Landscape Type does not support woodland and is characterised by medium-to-large scale pastoral fields, separated by hedgerows with scattered hedgerow and streamside trees. These are landscapes with heavy, poorly drained soils where the continuing pastoral land use has preserved large areas of ridge and furrow from medieval cultivation. The settlement pattern is nucleated with farms being sited within or on the edge of villages and not in the open countryside as most of the western part of the county. There is less opportunity here for biodiversity interest, although the streams offer important habitats, particularly the Whitsun Brook running along the north-western boundary.
- 2.18. The larger, eastern part of this ECA is also very different in character from the central part. The area is classified as a mixture of Principal Village Farmlands and Village Farmlands with orchards. The River Avon winds through it with its accompanying Riverside Meadows. This is one of the principal fruit growing areas of the Vale of Evesham with orchards prominent on south facing slopes. Where orchards are not suitable the large, rather featureless fields are intensively farmed for arable or market gardening crops. There is limited biodiversity interest, although ground nesting and arable associated birds may be important. Woodland is not characteristic, tree cover being confined to sparsely scattered hedgerow and streamside trees. This area was once heavily treed with hedgerow elms and their death transformed the character of the landscape. The settlement pattern is again nucleated, reflecting late enclosure of vast areas of former communally worked open fields.
- 2.19. Depending on the very different character areas, the priority habitats within this ECA are lowland meadow (neutral grassland) and calcareous grassland, broadleaved woodland, hedgerows, veteran trees, traditional

orchard, reedbed and wet woodland. In intensively farmed areas, connectivity across the landscape with linear corridors consisting of arable field margins, well-managed hedgerows and buffering along streams and ditches is important to allow the movement of species within the farmed landscape.

GI Priorities:

- 2.18 The landscape and biodiversity priorities identified for the Lenches Ridge ECA are⁸:
- Enhance and protect the hedgerow field boundaries, respecting the characteristic local enclosure pattern (planned or regular in the Village landscapes, organic in the Plateau Farmlands).
 - Enhance the tree cover pattern through new planting of tree groups associated with settlement and planting of watercourse and hedgerow trees to address density and age structure. Where elms have been lost, the preferred substitute is oak.
 - Orchards and fruit trees are a particular feature of the Village landscapes which dominate here and opportunities should be sought to retain and re/create them; new planting should consider traditional local varieties.
 - Seek opportunities to create and/or protect permanent pasture in the Settled Farmlands with Pastoral Land Use, and particularly in the Village Claylands to protect the characteristic patterns of ridge and furrow.
 - Link with existing site management, site expansion and buffer the key priorities.
 - Where sites are closely associated buffering should be merged to form links.
 - In the case of the River Avon corridor the link is already in place but augmentation of this in the floodplain will be critical for a number of GI aspirations.

Geodiversity

2.20. There are no geological SSSIs or local geological sites in this ECA.

Historic Environment

- 2.21. A diverse archaeological landscape, with higher ground to the NW being characterised by medieval villages, with surrounding settlement earthworks and ridge and furrow. Within the wider landscape evidence of prehistoric and Romano British settlement are sparsely located.
- 2.22. Moving down onto the River Avon corridor which is rich in sand and gravel deposits, cropmarked sites, surface finds, surveys and excavations have revealed a settled landscape from prehistoric times onwards. Below-ground evidence survives well, although in places its potential will have been reduced by the intensive arable cultivation. There is potential for alluvial deposits often associated with palaeochannels, which preserve important environmental deposits.

⁸ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

2.23. Within the eastern area the Roman road of Ryknild Street survives as a lane crossing from north to south through Honeybourne and a branch to Hinton on the Green is postulated to exist. The number of enclosure cropmarks in the vicinity of Bretforton and scatters of Roman material from Honeybourne and Bretforton and Badsey are suggestive of a well populated late prehistoric and Roman landscape. At Badsey Fields to the east of the village a Romano-British occupation site includes an inhumation.

GI Priorities:

- 2.24. The historic environment priorities identified for the Lenches Ridge ECA are⁹:
- Buffer historic landscape features, such as earthwork boundaries, ridge and furrow, abandoned prehistoric, Romano-British and medieval settlement remains.
 - Protect historic water features and buffer key sites, such as moats, fishponds and millponds.
 - Conserve and enhance diverse multi-period historic field patterns and hedgerows.
 - Explore opportunities to conserve below ground settlement sites on arable land bordering Evesham through open-space provision.
 - Conserve historic common edges.

Blue Infrastructure

Flooding

- 2.25. Flood risk is seen as a significant factor for strategic planning in this ECA. The main river that flows through Evesham is the River Avon. The River Isbourne and Merry Brook flow to the west of the town, the Badsey Brook to the east, where it joins the River Avon. The Battleton Brook, a small tributary of the River Avon flows through the southeast of Evesham. The principal flood risk in this ECA is from the River Avon in Evesham and Hazel Avenue, Evesham, in particular has been identified by Wychavon District Council as not defended to a satisfactory standard. The river Isbourne, Battleton Brook, several smaller watercourses and surface water flooding from sewers and overland flow all also contribute.
- 2.26. For the villages in south Worcestershire the main causes of flooding are the smaller watercourses and surface water flooding from sewers and overland flow. Wychavon LPA consider that the following areas in ECA 5 are not defended to a satisfactory standard:- Badsey; Harvington; Honeybourne (which adjoins this area); North Littleton and Rous Lench (which adjoins this area).
- 2.27. The geology can have an effect on the runoff, and the flooding, within a catchment as a result of the permeability of the strata. The geology within South Worcestershire is variable. Impermeable clays and mudstones

⁹ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

dominate the Warwickshire Avon sub-catchment and groundwater flooding is not considered to be a major issue in the South Worcestershire Joint Core Strategy area.

- 2.28. The River Severn Catchment Flood Management Plan makes this a Policy 3 area, where it will "Continue with existing or alternative actions to manage risk at the current level."

Water Quality

- 2.29. The River Avon and Merry Brook have a moderate ecological potential. The River Isbourne and the lower reach of Badsey Brook have a poor ecological status and the upper reaches of Badsey Brook have been classified as bad. All of the watercourses mentioned contain unacceptable levels of phosphorus to be able to achieve a good status. Additionally the River Isbourne is classified as having poor levels of fish and Badsey Brook has poor (lower reach) and bad (upper reach) levels of diatoms, contributing to their poor and bad classifications respectively.
- 2.30. The River Avon in the east of Evesham passes the Chemical Assessment under the WFD. The River Avon that flows through the west of Evesham and Merry Brook have failed due to unacceptable levels of Benzo(ghi)perylene and indeno (123-cd) pyrene. None of the minor watercourses have been assessed. Most of the ECA, is categorised as having agricultural/rural diffuse pollution pressure and, with the exception of the area from Aldington to Cleeve Prior, water company point source pollution pressure.
- 2.31. Groundwater quality is good.

Water Supply

- 2.32. No water is available from the Avon.

GI Priorities:

- 2.33. The blue infrastructure priorities identified for the Lenches Ridge ECA are¹⁰:
- Reduce dependence on raised flood defences, as this is unsustainable in the long term, by taking opportunities to restore sustainable natural storage of floodwater on undeveloped floodplains.
 - Make more space for rivers through urban areas via 'blue corridors' (i.e. Restoring access for floodwater onto key strips of floodplain. This requires redevelopment to be limited to flood-compatible land-uses e.g. parkland).
 - Some designated 'aquatic conservation' sites are in unfavourable condition. Activities that affect these sites must be changed to improve their condition.

¹⁰ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

- Ensure that the run-off from all proposed development is minimised. SUDS must be encouraged and targeted within planning approvals and retro-fitting of SUDS where surface water flooding is already a problem. Support ecological improvements. Examples of this include Severn & Avon Wetlands Project; Natural England's three fluvial SSSIs; Cotswold AONB.
- Reduce the levels of nutrients and sediments entering watercourses and take action to improve the management of water resources.

Access and informal recreation

- 2.34. This ECA is in Wychavon District. Only 3.6% of the Wychavon District is accessible natural greenspace, this is the lowest proportion across all districts in Worcestershire. As a whole accessibility to greenspace is poor with only 20% of households in Wychavon are within 5km of 100ha+sites and 2% of households within 10km of 500ha+sites.
- 2.35. Two of the three 3 sub-regional assets in Wychavon are in this ECA, these being Evesham Country Park and Evesham Battlefield. Evesham Country Park is a privately owned country park on the edges of Evesham. The county park offers a range of recreational facilities for informal recreation alongside the river Avon, with formal recreation facilities including a garden centre, restaurants and shops. There are also plans to expand the country park and the facilities on offer. Evesham Battlefield currently does not experience high levels of visitor pressure and has been identified as an underused site. However, although the site is free to access, the primary access to the site is via the Battlefield Trail which crosses the site and covers the principal areas of interest arising from the Battle of Evesham. This is not a site with unrestricted access and its primary focus will be for tourism associated with the battlefield and for walkers. There is currently not a wider recreational offer on the site. Its potential to offer enhanced recreational experience and to accommodate further visitors is dependant on the whole site being managed as a recreational facility with associated visitor provision.
- 2.36. There are deficiencies in opportunities for access and recreation in this area, particularly in the Vale of Evesham, with the Rights of Way network being less dense than in any other area of the County. There is also an absence of sites such as Country Parks, picnic places and Registered Commons. Few nature reserves exist although there are a number of smaller community sites such as Village Greens and Millennium Greens. With the proposed housing growth in Evesham, Pershore and some larger villages, a greater provision of accessible greenspace is required.
- 2.37. Additional visitor pressure is especially concerning for Evesham Country Park which is already near or at capacity in terms of visitor numbers. Efforts should be made to increase the visitor facilities and attractions at Evesham Battlefield as this site is currently underutilised and could cope with additional visitors.
- 2.38. Provision is also required at a neighbourhood level, within the towns and villages to address natural greenspace needs within the rural

communities. This should be a requirement of development and other options should be explored for existing communities such as stewardship agreements.

- 2.39. The tourism industry plays a vital role in strengthening the Worcestershire economy by increasing inward investment, creating new business opportunities and supporting jobs. Tourism also provides leisure and recreational opportunities for residents making it an attractive place to live, helping to provide a good quality of life. Walking and hiking are an important part of the visitor attractions in Worcestershire. There is one way-marked route in this ECA. The Wychavon Way runs through the Lenches as it crosses the north-western corner of the ECA on the route Holt Fleet to Broadway. There is also a network of Public Rights of Way across the ECA.
- 2.40. The market town of Evesham is surrounded by this ECA and boasts tourist attractions such as the Almonry Heritage Centre, a 14th Century building which was once part of the medieval Abbey complex and is now home to a unique and eclectic collection that tells the story of the area from the prehistoric to the present day. Other tourist attractions in the ECA itself include the Vale of Evesham Blossom Trail, the Evesham Vale Light Railway at Evesham Country Park at Twyford, and the Middle Littleton Tithe Barn which according to the National Trust is "one of the largest and finest 13th-century tithe barns in the country" and is open to the public from April to October.

GI Priorities:

- 2.41. The access and recreation priorities identified for the Lenches Ridge ECA are¹¹:
- Consider the proximity to and ability to integrate with the rights of way network, recreational way-marked routes and the cycle network;
 - Accommodate associated facilities necessary for the use and enjoyment of the site in a manner that is appropriate and able to integrate with the landscape character, wildlife and cultural interests.
 - Act as a greenway from town into the countryside and utilise existing canal, former railway lines, river corridors and wherever possible link with public transport routes.
 - Adopt minimum quality standards, (commensurate with its location and scale) that sites and routes should be expected to achieve will be those from the Green Flag Award Programme, and the Country Parks Accreditation Scheme, as appropriate.

Transport

Road

- 2.42. The two main routes in this ECA are the A44 and the A46. The A44 connects Worcester and Pershore in the north-west to Broadway and

¹¹ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

Oxford in the south-east. The A46 trunk road connects the area to the south-west at Junction 9 of the M5 near Tewkesbury, and runs north to Alcester and Warwick, creating a ring road around Evesham.

- 2.43. Other roads in this Environmental Character Area are more minor and include a level crossing on the B4085 at Blackminster.
- 2.44. The Worcestershire Advisory Lorry Route Map does not show any low bridges which would restrict the movement of vehicles over 16'3" (4.95m) on the lorry route network. Local roads may have further restrictions and will need further assessment if they are to be used for accessing mineral resources, particularly in light of Policy SWDP 11 "Vale of Evesham Heavy Goods Vehicles Control Zone" in the Proposed Submission Document of the South Worcestershire Development Plan which imposes restrictions on development which would result in a 5% increase in HGV movements in the part of this ECA to the east of Evesham.

Rail

- 2.45. The Cotswold line from Hereford to Oxford runs from east to west across this ECA. Network Rail has recently undertaken a project to re-double part of this line to enable trains to pass each other more easily, boosting capacity on the route, cutting delays and resulting in better journeys on the line between London, Oxford and Worcester.

Water

- 2.46. The River Avon flows through the ECA joining Tewkesbury and Pershore downstream in the west, through Evesham to Bidford-on-Avon and Stratford-upon-Avon upstream in the east. It is an operational river navigation, capable of carrying commercial traffic and is navigable for 45 miles from Tewkesbury to Stratford on Avon.

GI Priorities:

- 2.47. The GI transport priorities identified for the Lenches Ridge ECA are¹²:
- Opportunities should be sought to protect, enhance and create green infrastructure that promotes sustainable movement by walking and cycling, reducing the need to travel by car by providing pleasant environments that promote sustainable transport as a means to minimise the impact of transport on the natural environment and mitigate the impacts of climate change.

LTP Priorities:

- 2.48. The LTP 3 transport priorities identified for the Lenches Ridge ECA are:
- **A44 Worcester-Pershore-Evesham interurban corridor maintenance and improvement scheme** - a programme of improvements to transport infrastructure on this route, which is likely to be progressed in the short term and will include junction enhancements, street furniture decluttering, replacement and enhancement.

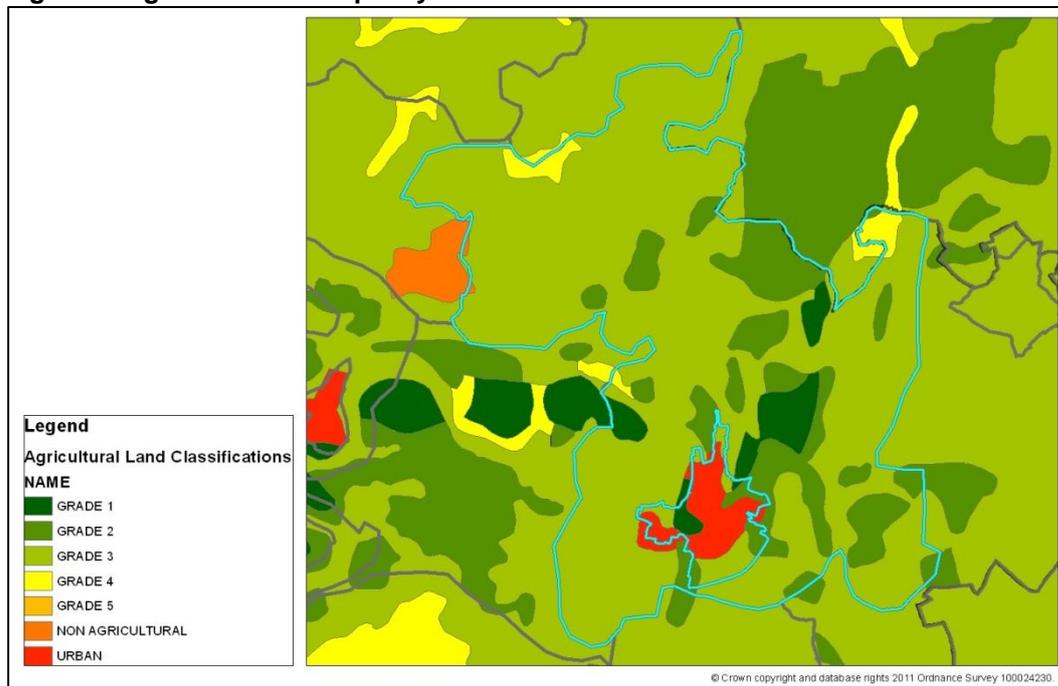
¹² Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

- **Worcester to Evesham rail line dualling scheme** - A proposed scheme to reinstate dual track between Worcester and Evesham, to further increase capacity on the Cotswold Line route. Dependent on the rail industry to progress this in the long term.

Agriculture/Forestry

- 2.49. The agricultural land use in this ECA is dominated by horticulture and some cash crops in the Vale of Evesham, with mixed farming in the north of the ECA. Horticulture involves intensive cultivation of fruits, vegetables, herbs and non-food crops such as flowers, shrubs and turf. Orchards as a dominant land use are concentrated around Evesham, extending eastwards along the Avon valley and the area is particularly noted for its orchards of stone fruit which favour the gentle south sloping sites. Cash cropping covers market gardening as well as arable farming and is strongly associated with the Vale of Evesham, where, on soils ranging from heavy Lias clay to freely draining river terrace gravels, and on holdings ranging in size from a few acres to over a thousand, almost every variety of market garden crop is grown. Mixed farming with stock rearing and/or dairying dominates the pasture lands associated with wetland soils and gleyed soils.
- 2.50. Agricultural land quality varies across the area, with the majority of the ECA classified as grade 3 land but some large areas of higher quality grade 2 and 1 land, as shown in Figure 3.

Figure 3. Agricultural land quality



- 2.51. The forestry commission's woodland opportunity maps show that much of the northern end of this ECA is listed as priority 1 or 2 for woodland creation which could benefit landscape character, biodiversity, cultural heritage and/or public access (**Error! Reference source not found.**). They also show that woodland restoration across this part of the ECA could benefit the ancient woodland landscape (Figure 5).

Figure 4. Woodland creation for landscape, biodiversity, heritage and public access

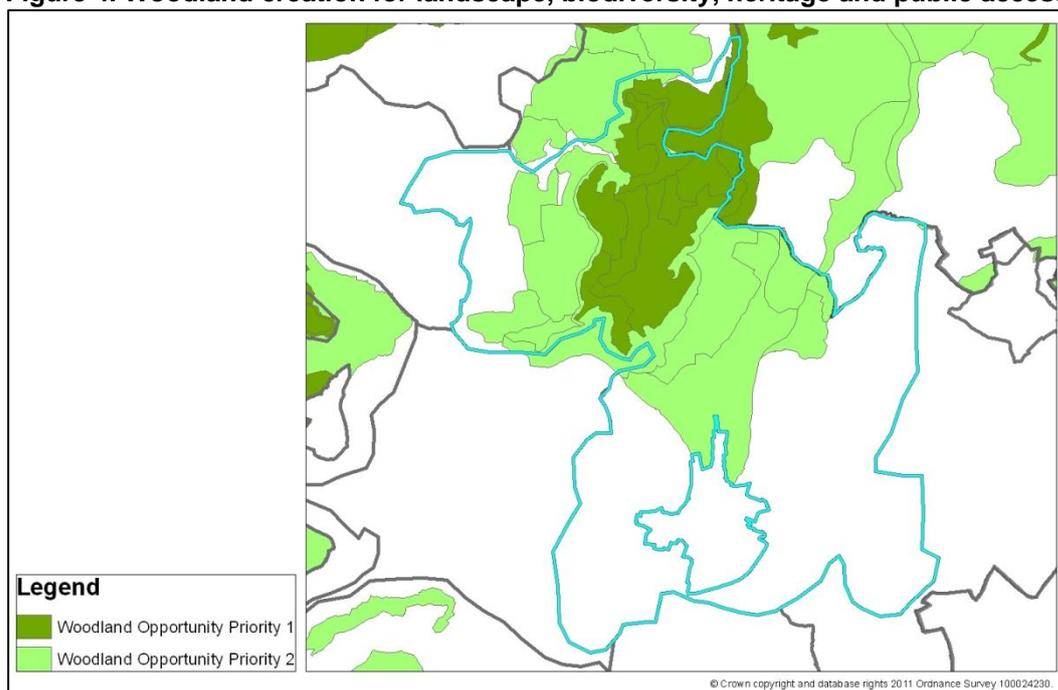
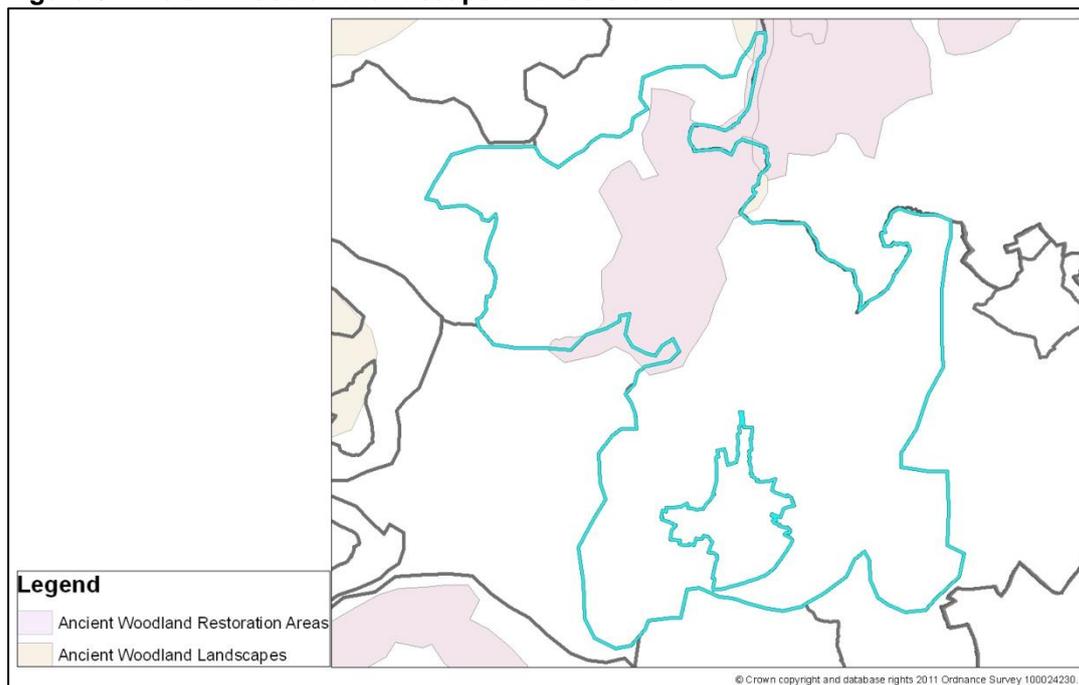


Figure 5. Ancient woodland landscape and restoration



Climate Change

2.52. Some effects of climate change will be similar across the whole county and many of the issues which can be addressed are likely to be common to all ECAs, such as:

- Improving air quality

- Providing flood risk management solutions
- Preventing water and soils pollution as a result of climate change related extreme weather conditions
- Promoting energy efficient and low carbon solutions
- Contributing to renewable energy production

Opportunities and Issues

- 2.53. Green Infrastructure features such as buffering of watercourses provide a way of minimising fluvial flooding. Planned landscaping incorporating flood defences could provide both and short term benefits and sustainable drainage schemes (SUDS) are a mechanism for managing both fluvial and pluvial flood risk.
- 2.54. Agricultural and horticultural businesses could face damaging water shortages in the coming decades as a result of climate change. In many parts of Worcestershire, water resources are under severe pressure. The majority of catchments in which horticultural production is concentrated have been defined by the Environment Agency as being either over-licensed and/or over-abstracted. Well executed water storage facilities could not only provide water supply for the business in the dry periods but a wide range of green infrastructure benefits such as biodiversity or landscape and opportunities for increased physical activity and exposure to nature.
- 2.55. The soil types around the edges of this ECA are inherently at risk of subsidence and heave. It is possible that changes in weather patterns as a result of climate change may worsen these tendencies.
- 2.56. Locally significant areas of heathland, bracken and conifer woodland in this ECA are amongst the habitats most at risk from fire as a result of climate change.

Socio-economic considerations

- 3.57. The analysis of the socio-economic situation in Worcestershire in this strategy considers the economy and health & well-being at a high level. It is not intended to draw a full picture of the economy or health and well-being in the county, instead it focuses only on the indicators which are of most relevance to green infrastructure:
- **Economy:** unemployment, household income and deprivation levels.
 - **Health and well-being:** health deprivation, heart diseases, obesity, mental health problems and respiratory conditions.
 - **Access to sites for informal recreation:** considers links between informal recreation opportunities and mental and physical well-being.
- 2.58. There is thought to be a link between green infrastructure and some aspects of health. The issues of obesity, respiratory conditions, mental health, heart disease and health deprivation have been considered in this context.

- 2.59. 26% (120,000) of all adults in Worcestershire are obese which equates 3% above the national average. Another 40% of adults are overweight. Childhood obesity, estimated 10% for 5 year olds and 18% year olds, is closely linked to the deprivation levels.¹³ Parts of this ECA have lower levels of obesity than most of the county.
- 2.60. Obesity and respiratory problems in this county generally follow the same geographical pattern.
- 2.61. Mental health problems, by contrast, tend to be found in the and around major settlements. In Worcestershire one in eight (around 56,000) adults have some form of mental health issue. The most common disorder is mixed anxiety depression, followed by generalised anxiety disorder. Additionally, 10% of children have a clinically significant mental health problem¹⁴. In spatial terms, mental health problems are found in and around major settlements but there are also some pockets in the Vale of Evesham (and in the eastern part of Bromsgrove District adjacent to Redditch.)
- 2.62. Although mortality rates from cardiovascular diseases are significantly lower than the national rate, patterns of heart diseases are more dispersed than the other health indicators assessed and poor performance is found across the county. Contrary to other health indicators, heart diseases are least prevalent in some of the urban areas.
- 2.63. The overarching principles identified by the GI partnership regarding socio-economic matters for this ECA are:
- Support both health and economic wealth.
 - Aim to increase household income and decrease unemployment and
 - Address health deprivation, concentrating on heart diseases, obesity and mental health.

¹³ Worcestershire Health and Well-being Board (2012) Joint Strategic Needs Assessment

¹⁴ As above