

Environmental Character Area Profile for the Minerals Local Plan: 16. Evesham Valley

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.

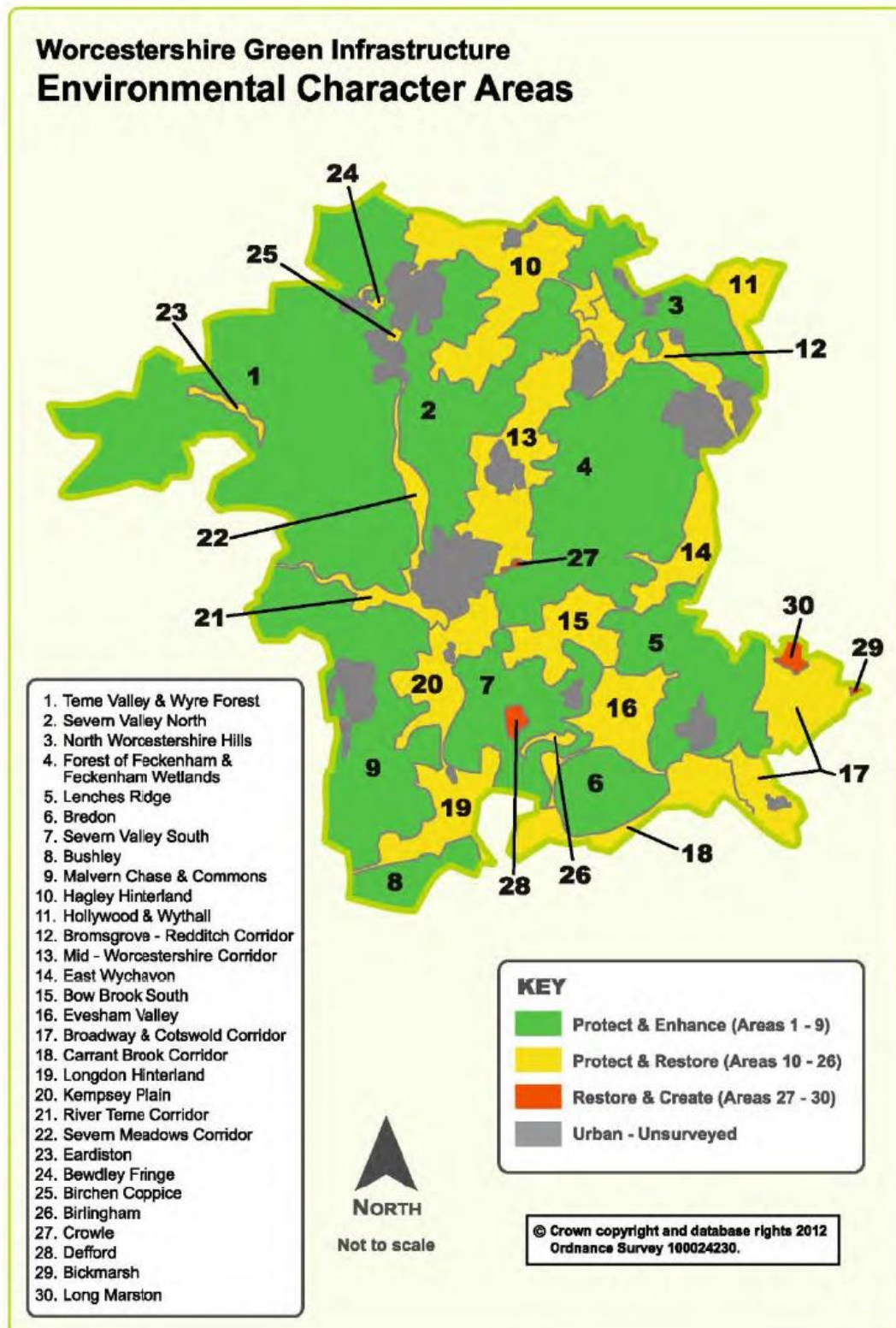
³ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

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

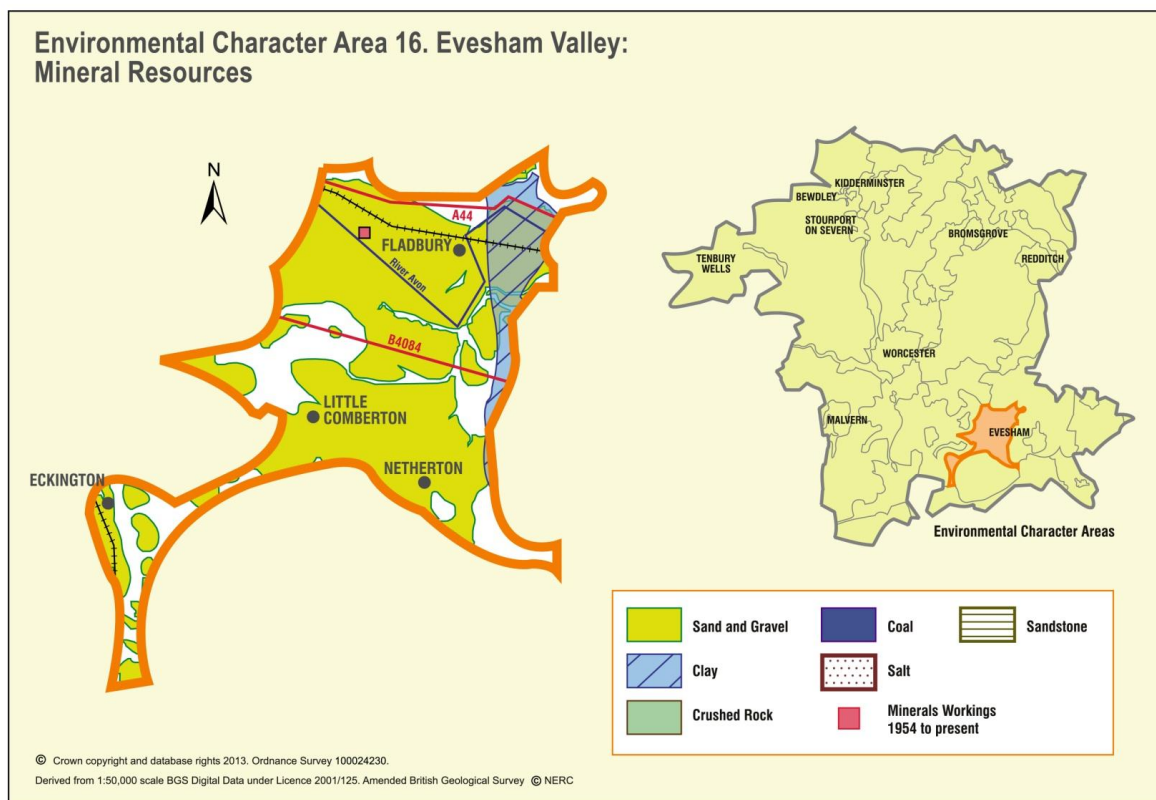
These are illustrated on Figure 1. Environmental Character Areas.

Figure 1. Environmental Character Areas



2. Characteristics and priorities of the Evesham Valley ECA 16

Figure 2. Environmental Character Area 16. Evesham Valley: 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 16 includes substantial potential sand and gravel resources in 1st, 2nd, 3rd, 4th and 5th river terrace deposits. Large blocks of resource deposits cover almost all of the ECA. The borehole evidence is poor but 11 resource areas have been identified, collectively 1,493 Ha in extent containing an estimated 19.3 M3 of sand and gravel. 6 of the resource areas are considered "Significant". At least 3 sites in this area were worked in the past but only one seems to have had planning permission.

Hard rock

2.3. There is no evidence of suitable strata in this ECA.

Building stone

2.4. The memoir for Eckington refers to "numerous old workings for building stone". Most had ceased by the end of the 19th century but one (at Saleway) was recorded as still working at that time.

Industrial minerals.

Clay

2.5. Old, disused clay pits are quite common in the Lower Lias clays of the Vale of Evesham. The outcrop of the Twyning formation has many small, shallow, old workings, a number were worked for Brick Clay. The largest was at Oddingley. The Blue Anchor Formation and mudstones in the Lias group may also have been quarried for brick clay. The only working pit was that at Honeybourne, outside of this ECA, in the 1960s. The clays were used for the manufacture of bricks, tiles and drainpipes.

Silica sand

2.6. There is no evidence of suitable strata in this ECA.

Brine

2.7. There are no records of former Brine workings in this ECA.

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.

2.9. This ECA is a largely rural area within Wychavon District. The district anticipates the development of 5,807 homes, 18.5 ha of employment land and a new neighbourhood centre in the next 14-18 years⁴. The ECA is adjacent to the main town⁵ of Evesham and other town⁶ of Pershore 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.

⁵ Main towns are second in the five tier settlement hierarchy set out in the South Worcestershire Development Plan proposed submission document. They provide a comprehensive range of local services and employment opportunities. The towns will

incorporates the Category 2 villages of Cropthorne, Eckington and Fladbury and Category 3 village of Lower Moor which are proposed for some development in the South Worcestershire Development Plan proposed submission document⁷.

- 2.10. These and other areas beyond the boundary of the ECA could create demand for minerals in this Environmental Character Area. Particularly Worcester City to the north west of the ECA, which is anticipated to experience significant development over the life of the Minerals Local Plan and Tewkesbury and Ashchurch approximately 3km to the south of the ECA which are proposed as strategic or housing allocations in the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy "Developing the Preferred Option" consultation document.

Green Infrastructure priorities⁸

- 2.11. 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

- 2.12. 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.

- 2.13. The strategic GI approach for the Evesham Valley ECA is to *protect and restore*. The overarching principle identified by the GI partnership is to protect and restore the River Avon corridor and functional floodplain habitats.

Landscape and biodiversity

- 2.14. The Evesham Valley Environmental Character Area is an area of intensively cultivated and generally calcareous, fertile and free-draining

continue to be the focus of balanced growth in Malvern Hills and Wychavon, with urban extensions and smaller infill allocations along with necessary associated infrastructure.

⁶ Other towns are third in the five tier settlement hierarchy set out in the South Worcestershire Development Plan proposed submission document. 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. An urban extension is proposed for Pershore.

⁷ 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.

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

soils. Predominantly described as Principle Village Farmlands within the Worcestershire Landscape Character Assessment, the area has very restricted semi-natural habitats which are fragmented by the medium-to-large scale arable/cropped lowland fields. This is an open, large scale landscape, denuded of native trees since the dominant elms were lost to Dutch Elm Disease. Woodland is not characteristic, trees generally being confined to groups in and around the nucleated villages. Domestic orchards are a dominant feature with lines of fruit trees, usually damsons growing in the hedges.

- 2.15. The ECA is roughly transversely bisected by the River Avon with its accompanying Riverside Meadows and, concomitantly, the 'Severn and Avon Vales Biodiversity Delivery Area'. This BDA targets the fragmented riparian habitats associated with the river corridor including wet pasture meadows, ditches, reedbeds and wet woodlands, exemplified by sites such as the Oxtan Ditch and Meadows, and the Lower Moor Pits and Lench Ditch Local Wildlife Sites.

GI Priorities:

- 2.18 The landscape and biodiversity priorities identified for the Evesham Valley ECA are⁹:
- Enhance and protect the hedgerow field boundaries with a planned enclosure pattern of medium-to-large fields. Seek opportunities to address density and age structure in linear tree belts along hedgerows, ditches and watercourses in the Meadows, or the tree cover associated with dwellings in the Village Farmlands. Encourage planting of oaks or disease resistant elms to replace hedgerow elms lost to disease.
 - In the unsettled Riverside Meadows opportunities should be sought to retain pastoral land use and management regimes that support natural river and flood plain function.
 - In contrast, the cropping horticultural land use of the Village Farmlands is particularly characteristic, and localised domestic orchards and lines of fruit trees (often damson) are notable features to be protected or enhanced where appropriate.
 - Newly created green infrastructure should augment the existing resource, and link priority habitats including neutral grassland, field boundaries and traditional orchards.
 - Maintain the River Avon corridor as a key green infrastructure link and augmentation: the floodplain will be critical for a number of GI aspirations.

Geodiversity

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

Historic Environment

- 2.17. This area is dominated by sand and gravel terraces which combined with intensive agricultural land use has resulted in the discovery and identification of extensive prehistoric and Romano British occupation and

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

funerary sites. This is reflected by the large number of Scheduled Ancient Monuments in this character area. The broader meanders of the river are likely to have left a series of palaeochannels sealed beneath later alluvial deposits.

- 2.18. The second Avon Terrace is important for the identification and recovery of Palaeolithic artefacts and associated environmental remains, and is seen as a key research objective for the region.
- 2.19. Of particular significance in this character area, though not scheduled due to the wide area covered, is the complex of elongated enclosures at Fladbury. These monuments have been interpreted as being of Neolithic date and represent a ceremonial complex that has no known parallels. The understanding of this particular landscape is a key research objective.

GI Priorities:

- 2.20. The historic environment priorities identified for the Evesham Valley ECA are¹⁰:
 - Explore opportunities to protect below ground archaeology associated with extensive prehistoric and Romano-British settlement in the Evesham hinterland.
 - Protect below ground archaeology and deposits of high palaeoenvironmental potential associated with the Avon corridor.
 - Buffer historic landscape features, such as earthwork boundaries, ridge and furrow and medieval settlement remains.
 - Protect historic water features and buffer key sites, such as fishponds and millponds along tributaries of the Avon.
 - Protect and enhance the historic field pattern and hedgerow network associated with enclosure of medieval open-fields, market gardening allotments and traditional orchard enclosures.

Blue Infrastructure

- 2.21. The main watercourse in ECA 16 is the River Avon but the Merry Brook, Piddle Brook and River Isbourne and other, un-named watercourses, also pass through it. The principal flood risks are from the River Avon in Evesham (outside the ECA itself) and the River Avon and its tributary Piddle Brook to the land east of and including Pershore (outside the ECA itself). The Water Cycle for the SWDP specifically notes that Wychavon LPA considers that Little Comberton is not defended to a satisfactory standard.
- 2.22. There is also a general risk from surface water flooding from sewers and overland flow.
- 2.23. 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 dominate the Warwickshire Avon sub-catchment and Groundwater

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

flooding is not considered to be a major issue in the South Worcestershire Joint Core Strategy area.

- 2.24. 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."
- 2.25. Almost all of this ECA, except for an area around Little Comberton, is categorised as having water company point source and agricultural/rural diffuse pollution pressure. The River Avon and Merry Brook have a moderate ecological potential. The River Isbourne, poor. All contain unacceptable levels of phosphorus to be able to achieve a good status. The River Isbourne is also classified as having poor levels of fish contributing to its poor classification.
- 2.26. The River Avon that flows through the west of Evesham and Merry Brook have failed the Chemical Assessment under the WFD due to unacceptable levels of Benzo(ghi) perelyne and indeno (123-cd) pyrene (see section 6.2.4).
- 2.27. Groundwater status is good in this ECA.
- 2.28. Water Supply: No water available.

GI Priorities:

- 2.29. The blue infrastructure priorities identified for the Evesham Valley ECA are¹¹:
 - 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.
 - Ensure that the run-off from all proposed development is minimised. For example, SUDS must be encouraged and targeted within planning approvals.
 - Encourage the 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.
 - Reduce the impacts of abstraction on the environment as part of the Restoring Sustainable Abstraction programme.

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

Access, informal recreation and tourism

- 2.30. 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 within 5km of 100ha+ sites and 2% of households within 10km of 500ha+ sites.
- 2.31. There are no sub-regional recreation assets in this ECA, with the closest sub-regional recreation assets being Evesham Country Park and Evesham Riverside.
- 2.32. There are deficiencies in opportunities for access and recreation across the Vale of Evesham, with the Rights of Way network being less dense than in any other area of the County. There is also a lack 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.
- 2.33. Provision is required at both a strategic and neighbourhood level. At a neighbourhood or local scale there is scope for 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.
- 2.34. Tourist attractions in this ECA include Aztec Watersports at a former mineral working near Lower Moor.

GI Priorities:

- 2.35. The access and recreation priorities identified for the Evesham Valley ECA are¹²:
- 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.

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

Transport

Road

- 2.36. The A44 crosses the northern end of the ECA, connecting Pershore to the west and Evesham to the east. Other roads in this Environmental Character Area are more minor.
- 2.37. 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.

Rail

- 2.38. The Cotswold Line runs through the northern end of this Environmental Character Area, connecting Worcester and Evesham. The Birmingham-Bristol line runs near the south western boundary of the ECA through Eckington.

Water

- 2.39. The River Avon flows through Wyre Piddle and Fladbury in the northern end of the ECA, joining Tewkesbury and Pershore downstream in the west, to Evesham, 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:

- 2.40. The GI transport priorities identified for the Evesham Valley ECA are¹³:
- 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:

- 2.41. The LTP 3 transport priorities identified for the Evesham Valley 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.
 - **Worcestershire Parkway Major Scheme** – this scheme, which is likely to be progressed in the medium term, would involve the development of a new parkway station at the intersection of the Bristol to Birmingham/North West/North East and the Worcester -

¹³ Worcestershire County Council (July 2012) *Planning for a Multifunctional Green Infrastructure Framework in Worcestershire: Green Infrastructure Framework 2*

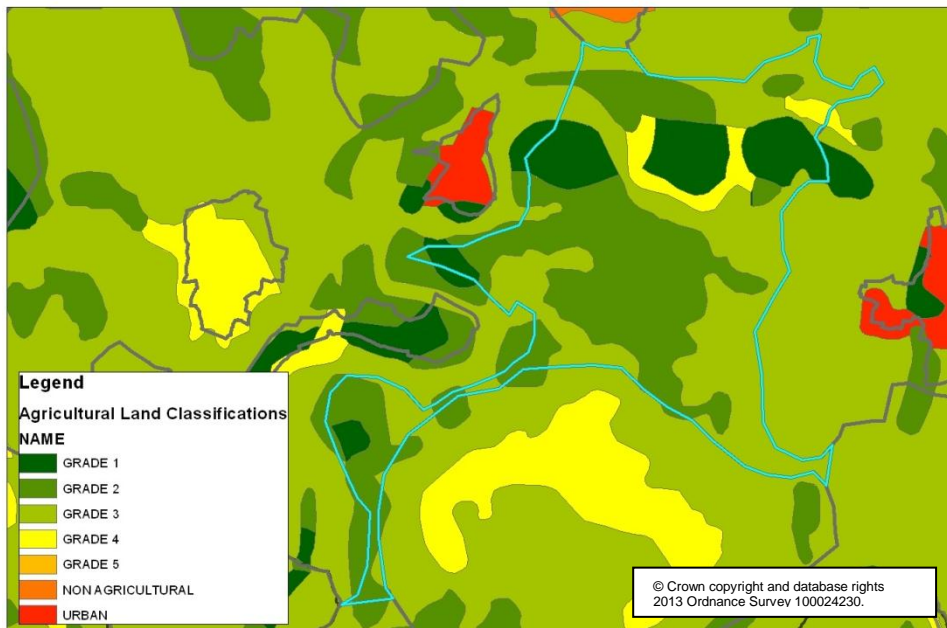
London (Cotswolds Line) main line railways to provide significantly improved direct access to national rail services from Worcestershire, and provide significant opportunities for local economic growth.

- **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

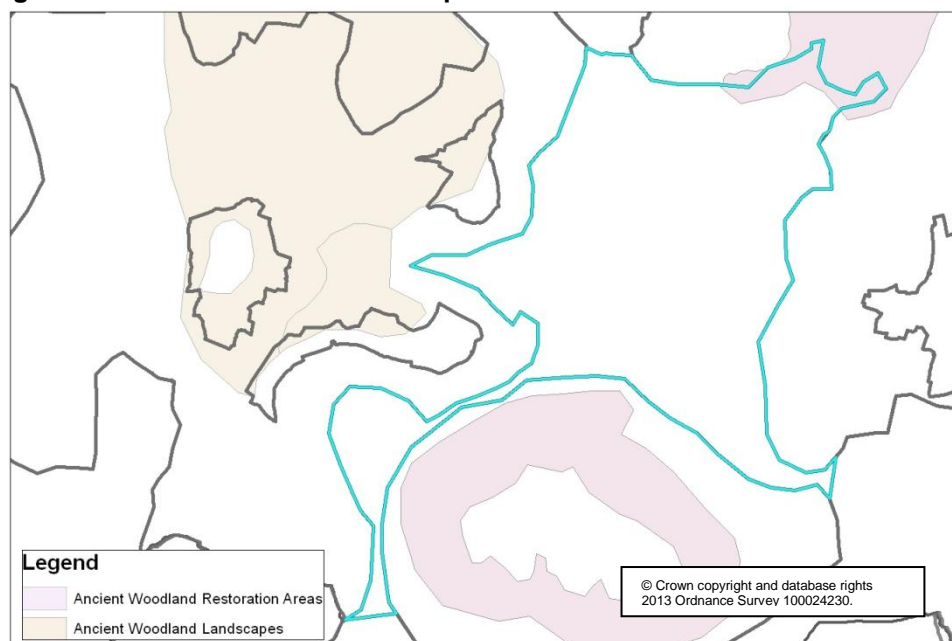
- 2.42. The majority of the land use in this ECA is cash cropping. Cash cropping covers market gardening as well as arable farming and is strongly associated with the Vale of Evesham, where, on soils ranging from heavy Lias clay to freely draining river terrace gravels, and on holdings ranging in size from a few acres to over a thousand, almost every variety of market garden crop is grown.
- 2.43. Agricultural land quality varies across the area, but is dominantly high quality grade 1-3 land. Small areas of low quality grade 4 land is present adjacent to the River Avon near Fladbury, but this is immediately adjacent to the areas of grade 1 land within the meanders of the river, as shown in Figure 3.

Figure 3. Agricultural land quality



- 2.44. The forestry commission's woodland opportunity maps show that only the very north eastern tip of this ECA near Wood Norton is listed as priority 2 for woodland creation which could benefit landscape character, biodiversity, cultural heritage and/or public access. They also show that woodland restoration across this part of the ECA could benefit the ancient woodland landscape (Figure 4).

Figure 4. Ancient woodland landscape and restoration



Climate Change

2.45. 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

2.46. Green Infrastructure features such as buffering of watercourses provide a way of minimising fluvial flooding. Planned landscaping incorporating flood defences could provide both short term benefits and sustainable drainage schemes (SUDS) are a mechanism for managing both fluvial and pluvial flood risk.

2.47. 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.

- 2.48. The soil types in some, particularly the west, 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.

Socio-economic considerations

- 2.49. 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.
- 2.50. 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.
- 2.51. 26% (120,000) of the Worcestershire's adult population is obese and another 40% is overweight. The adult obesity levels in Worcestershire are higher than the national average. The level of childhood obesity is around the national average, at 10% of five year olds and 18% of eleven year olds. In terms of land cover, most of the Worcestershire area has some problems with obesity. The villages in the eastern part of the county, including parts of this ECA are however amongst the better performing areas in the county.
- 2.52. Obesity and respiratory problems in this county generally follow the same geographical pattern. Mental health problems, by contrast, tend to be found in the and around major settlements. 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.
- 2.53. The overarching principles identified by the GI partnership regarding socio-economic matters for this ECA are:
- Enhancements across both health and economic GI related issues.